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Consumers' Food Product Experience: The Role of Values

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Julkaisun nimike
Arvojen rooli kuluttajien ruokatuotekokemuksissa

Tiivistelmä

Viime vuosina ruoan kuluttamiseen liittyvien arvojen, kuten terveellisyyden, turvallisuuden ja eettisyyden, yhteiskunnallinen ja taloudellinen merkitys on vahvistunut. Kyseiseen havaintoon pohjautuen tämän tutkimuksen tavoitteena on analysoida, miten arvot ohjaavat kuluttajien ruokatuotekokemuksia. Kahdessa kokeellisessa kuluttajatutkimuksessa mitattiin ruokamotivaatioita, tuoteasenteita ja -mielikuvia, ostoaikomuksia, makukokemuksia ja todellisia ruokavalintoja kuluttajien arvojen aktivoinnin jälkeen. Koetilanteissa oli arvioitavana useita erilaisia ruokatuotteita. Erityisesti toisilleen vastakkaisten arvojen, hedonismin ja perinteisyyden, vaikutukset olivat tarkasteluiden kohteena.

Tärkeimmistä tutkimustuloksista ensimmäinen on se, että kuluttajan arvojen aktivoituminen ei yksiselitteisesti ohjaa ruoan valintakäyttäytymistä, vaikka toisistaan poikkeavat arvot vaikuttaisivat eri tavalla ruoan aistittavaan laatuun, tuoteasenteisiin tai valintamotiiveihin. Toiseksi, tuotespesifeistä assosiaatiorakenteista johtuen tiettyä arvoa korostava viestintä voi erityisellä tavalla vaikuttaa ruokatuotteen kokemiseen. Kolmanneksi, tunnetun brändin yleisesti tuottama positiivinen vaikutus makukokemukseen voi kumoutua, kun kuluttajan arvot eivät ole sopusoinnussa brändimielikuvien kanssa.

Tutkimustulokset tuottivat neljä oleellista implikaatiota. Akateemista uutuusarvoa on sillä havainnolla, että kuluttajien motivationaaliset rakenteet voivat vaikuttaa ruoan aistinvaraiseen miellyttävyyteen. Havainto kuluttajan arvojen ja brändimielikuvien välisen (epä)yhteneväisyyden roolista maun kokemisessa antaa aiheen jatkotutkimuksille. Ymmärrys siitä, että erilaiset kuluttajaryhmät liittävät sekä ruoan tuotemuotoon että sen raaka-aineeseen erilaisia merkityksiä, tehostaa markkinoinnin suunnittelua ja tuotekehitystä. Kaupallisesta näkökulmasta voidaan myös todeta, että ruoan tyydyttäväkin maku voi riittää tuotteen hyväksyntään, jos ruokabrändiä kyetään markkinoimaan kuluttajaa hyödyttävillä emotionaalisilla ja funktionaalisilla ominaisuuksilla.

Asiasanat
Ruoan kuluttaminen, arvot, maku, brändit

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Abstract
In recent years, the societal and economic significance of values in food consumption (e.g. health, safety and ethicality) has been on the rise. Consequently, the purpose of this inter-disciplinary study is to investigate how consumers' values guide their food product experiences (FPEs) that are reflected in the food choice motives, product/brand attitudes and images, purchase intentions, sensory perception and choice behaviors. Two experimental consumer studies involving value activation manipulations, tasting and measurement of perceptual, attitudinal and motivational constructs were run. A broad range of food products was represented in the empirical analyses. The role of the value opposition between hedonism and tradition in consumers' FPE received special attention.

The first key finding indicates that even if differences in consumer values are linked to differences in preferred sensory qualities, product attitudes or food choice motives, activated values do not unambiguously guide actual food choice behaviors. Secondly, due to differences in food-specific association structures, messages stressing certain food value may differentially influence consumers' FPE. Thirdly, the positive impact of brand familiarity on taste perception can be nullified, when consumer values are incongruent with food brand symbolism.

A few essential implications arise. The possibility that consumers' motivational constructs affect preferred sensory qualities of food is a novel academic observation. The revelation of the power of consumer value – brand symbolism (in)congruity in taste perception opens up a rich avenue for further research. The need to produce target group-specific understanding of both raw material- and carrier-related associations is a relevant implication for product development and marketing planning. Another important commercial insight is that an objectively better taste of food is not necessarily decisive for a consumer, if unique emotional and functional consumer benefits are delivered by brand marketing.

Keywords
food consumption, values, taste perception, brands

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Helsinki, November 2011, Rami Paasovaara

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1 INTRODUCTION

In developed countries, food choice options in supermarkets and restaurants are saturated with abundance. Consumers can choose what they want to eat, for both nutrition and enjoyment. Because food choices vastly differ between individuals, situations and product classes, it can be described as a complex phenomenon. It has been acknowledged that food choice is controlled by a very large number of variables; food choice is an outcome of interactions between the consumer (biological, physiological and psychological factors), product (e.g. food flavour and package) and environment (e.g. time, physical surroundings, social and cultural factors) (see e.g. Meiselman 2007; Rozin 2007).

Of consumer-related social psychological factors, values such as health, safety and ethicality have recently been involved in many discussions concerning food production and consumption (e.g. Clarke et al. 2008: Vandendriessche 2008), stemming from growing health problems, such as obesity and foodborne diseases (WHO 2010) and concerns about environmental well-being. As the general significance of these values has been stressed, some consumption trends have emerged as a result. For instance, ethical consumption, which is associated with personal endorsement of values of health, security and protecting the environment and with organic food purchases (Shaw et al. 2005), has constantly been increasing. To illustrate the point, Organic Trade Association (2010) has reported that U.S. organic food sales have grown from $6.1 billion in 2000 to $24.8 billion in 2009, and Otto Group (2009) expects that despite the current economic crisis, ethical consumption (favouring organic, fair trade and local products) continues to develop positively in Germany.

For food marketers, knowledge about consumer values can be very useful for segmentation and marketing communication planning. This arises from the fact that consumers tend to differ in their personally important values. Consumers purchase many products because they believe these products will help to attain a value-related goal (Solomon 2007). Therefore, some consumers are, for instance, willing and some unwilling to buy organic foods. As universalistic consumers (those who endorse values such as welfare for all people and protection of nature) appreciate and prefer organically grown food, power-oriented consumers (those who support values such as wealth and authority in their lives), in turn, are not that interested in consuming it (e.g. Dreezens et al. 2005a; Kihlberg & Risvik 2007). They form two consumer segments that make different food choices. Consumers in the former segment are likely willing to pay a price premium when purchasing organic bread (they can find e.g. naturality and purity cues appealing), while the latter might prefer a conventional alternative or even an alternative that

is produced from genetically modified grains (if available) (cf. Dreezens et al. 2005a).

The importance of values has also been noticed in the development of food policies. For instance, European Technology Platform: Food for Life Finland has recently prepared a national research strategy for the food sector. According to the report (see Kaukovirta-Norja 2011), key themes in this strategy are sustainable and profitable production, and consumer welfare. In order to advance regeneration and competitiveness of the food sector, three strategic challenges have been set for the whole food chain: 1) *enhancing the understanding of consumer values*, needs and choices, 2) controlling the safety and traceability of foods, and 3) improving the systems and methods in production and logistics. As regards to the firstly mentioned challenge, ETP Food for Life Finland stresses that more understanding of consumer values is needed, already in the growing/production stage, so that food products will meet consumer needs, prediction of food choices becomes easier and thus, the food chain becomes more efficient.

Previous illustrations reflect the fact that personal values are capable of guiding consumer behaviour (see e.g. Schwartz 1992). However, relatively little is known when and how values influence behaviour (Verplanken & Holland 2002). This concerns food consumption as well. In general, it may be hard to identify value effects, because values are very abstract constructs and thus, many food-related actions are only indirectly linked to values (Brunso et al. 2004a; Aertsens et al. 2009). Food values, or food choice motives, that reflect consumers' purchase and eating criteria, may be easier to detect than personal values, but also their role can be challenging to understand in different food choice and eating situations, since consumers tend to prioritize different food values in different occasions. That is, there are specific situations in which consumers need to solve value conflicts regarding food consumption; for instance, they might have to weigh whether to prefer taste or convenience over health (Connors et al. 2001). So, a general question arises: How do both stable personal values and variable food values work and interact behind food consumption?

Obviously, there is still a need for much greater understanding on how values affect food consumption. For instance, to what extent consumer values guide food taste preferences? Recently, some consumer researchers have started to fill in this gap, as they have investigated the relationship between values and taste experiences. For instance, Kihlberg and Risvik (2007) have studied how bread liking is related to values. They found that out of five samples, one bread was perceived differently by consumers with different value orientations. Furthermore, based on their taste test findings, Allen et al. (2008) have suggested that when a food prod-

uct symbolises human values that a consumer personally supports, then this value-symbol congruency leads to a more favourable taste experience and, vice versa, the incongruence leads to a less favourable taste experience of that food product. The present study focuses on these aspects that have been given less academic attention. Namely, it examines how consumer values influence food liking and food choices. Next, the goals of the dissertation and intended contributions to food-related consumer research are more specifically defined.

1.1 Purpose, objectives and structure of the dissertation

This study examines the role of personal values in consumers' experience of various food products. Thus, consumer's perspective will be in the forefront of this thesis. To phrase it more formally, *the purpose of this study* is to comprehensively and critically evaluate to what extent and in what ways consumers' values guide their food product experiences that are reflected in the food choice motives, product/brand attitudes and images, purchase intention, sensory perception and choice behaviours.

The purpose is achieved through the following three objectives. *The first objective* is to develop a conceptual framework that is based on an extensive literature review, for understanding the role of values in food consumption. *The second objective* is to empirically analyze the extent to which consumers' activated central values exert a direct influence on their food product image perception, food choice motives, sensory evaluation and actual choice behaviours. *The third objective* is to empirically analyze the extent to which consumers' activated central values exert an indirect influence, either through consumer value - product associations (in)congruity or consumer value - brand symbolism (in)congruity mechanisms, on their sensory evaluation, product attitudes, purchase intention and choice behaviours. This thesis is divided to five main chapters, and its contents are illustrated in Figure 1.

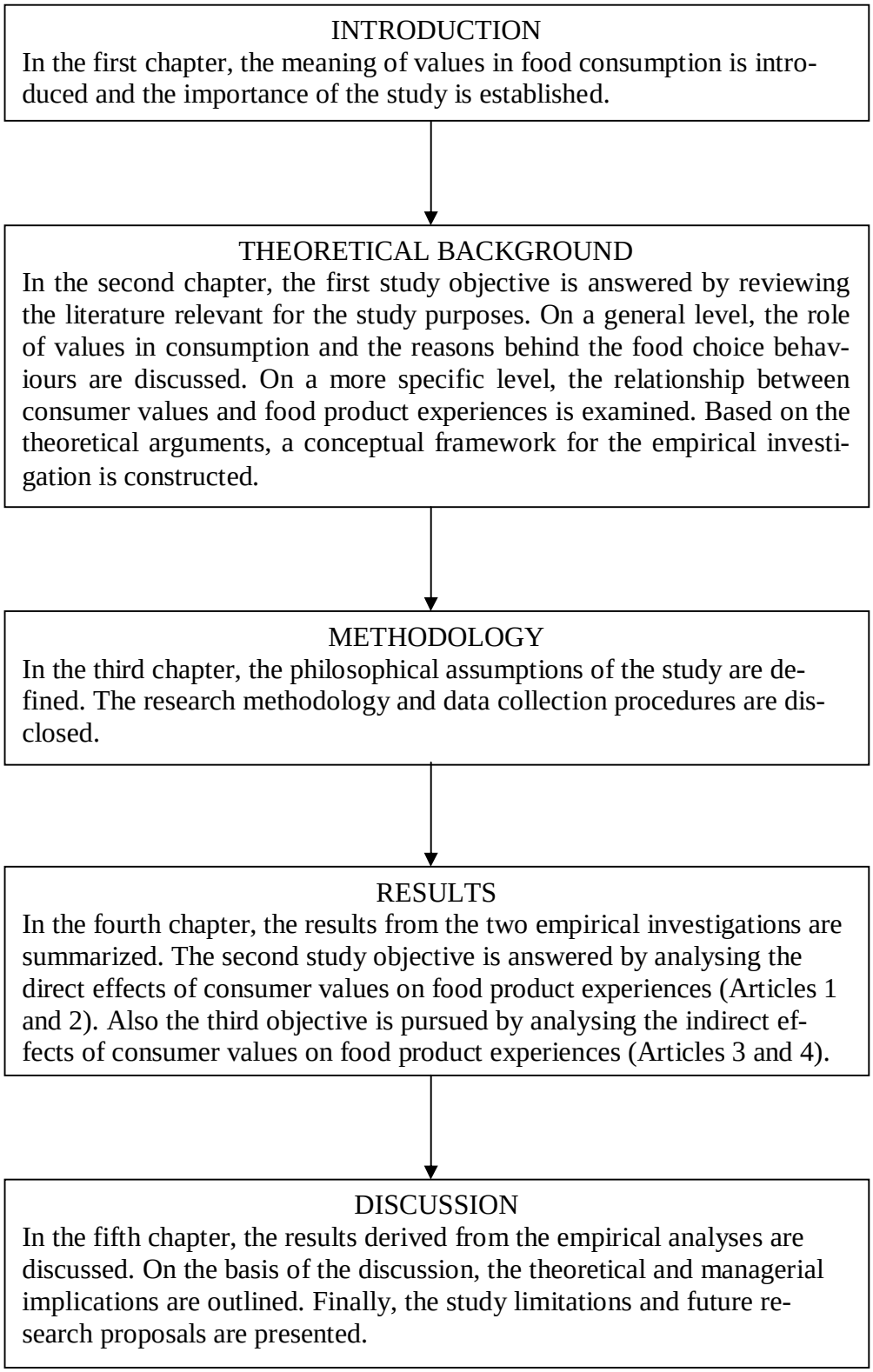

Figure 1. The structure and logic of the dissertation.

1.2 Positioning and the academic contributions of the dissertation

This study is located in the field of consumer research and its general subject is food consumption. Food consumption is likely one of the most personally involving areas of human behaviour, since food is typically consumed several times every day, it is associated with a multitude of decisions to be made (purchase, eating context, company etc.), and eating causes physiological effects in the body. As the spectrum of food products is enormous, new food products are constantly launched and consumer segments are becoming even more fragmented, there is a need for advanced understanding of consumer behaviour in relation to food. Certain specific areas have been less explored; this study tries to fill in those gaps to which previous research has not paid much attention.

On a general level, this study contributes to food consumption research in the following ways. First of all, the study has an interdisciplinary nature. It has its main roots in marketing, but also some ideas from psychology (e.g. individual differences in value orientations) and sensory science (e.g. taste perception) are included in order to understand food-related consumer behaviour more comprehensively. Although the usefulness of integrating policies from different disciplines has been acknowledged (e.g. Frewer & van Trijp 2007), still the majority of food-related research is conducted through the lens of one discipline. For instance, most consumer behaviour studies in the field of marketing do not involve tasting (Grunert 2003). Sometimes food tasting is included but the taste tests fail, because marketing researchers are unable to perform those tests as professionally as food scientists (Garber et al. 2003). Thus, interdisciplinary research can take several different aspects into account and produce more profound knowledge about food consumption patterns (cf. Köster 2009). This study tackles the said shortcoming by integrating views and methods from both marketing and sensory science, as consumers' food product experiences are investigated by exploiting procedures from both disciplines.

Secondly, there are a limited number of studies that have analysed the relationship between consumer values and actual food-related behaviours. Much more often in food research, consumers' food consumption behaviours are approximated by their previous purchases, product attitudes, choice motives and buying intentions, although it is values that are the fundamental reasons behind consumers' food preferences and although predicted choice behaviour does not always reflect actual behaviour. Those studies that have linked consumer values to food-related behaviours have neglected certain values. The relationship between values stressing environmental aspects and organic food consumption, and the juxtaposition

between values of universalism and power have probably gathered the most of the attention (see e.g. Kihlberg & Risvik 2007; de Boer et al. 2007). This study focuses on the value juxtaposition of hedonism and tradition that has not received much academic attention in the food research context.

Thirdly, the use of value activation is included in the value effect analyses. Namely, a specific focus is put on activating consumers' central values, so that their food-related behaviours such as food choice and sensory perception would really be value-driven (Verplanken & Holland 2002). The application of this theory has typically been neglected in past value-related food studies, even though it offers a way to maximise the likelihood of the emergence of the value effects.

Fourthly, there is a need for more precise understanding of product and brand information by which marketers can appeal food consumers. More specifically, because consumer values are expected to guide food choices, successful marketing communication of food products requires that consumer values fit product's physical and symbolic properties. This study seeks to increase knowledge about the effects of product information on experience of different foods among consumers varying in their personally important values.

On a more specific level, each article of the dissertation contributes to food consumption research in the following ways. Article 1 investigates actual food choices, instead of behavioural intentions or self-reported behaviour as predictors of food choices, among consumers with different value orientations. Köster (2003) has noticed that the measurement of actual food choices is often neglected in the studies that have claimed to analyse the effects of attitudes and values on food choices.

Article 2 examines the link between consumer values and sensory perception as well as the relationship between consumer values and food choice motives. In fact, there exists no exact knowledge on how consumer values influence rye bread liking, although rye bread products are commonly consumed, for instance, in northern Europe. The study also explores food choice motives among consumers with traditional and hedonistic values; this exploration has been overlooked by prior research.

Article 3 investigates whether consumers' sensory perception of, attitudes toward and buying intention of food products are modulated by the perceived (in)congruity between consumer values and the associations linked to product type and raw materials. In terms of the extant literature, the physiological aspects of consumers' product experiences and the role of food product association structures in them have attracted research interest to a lesser extent. Also, consumer

research has not paid much attention to consumers' experiences of spelt and sea buckthorn products. Thus, the study enhances understanding of product experiences and marketing communication of unfamiliar foods.

Article 4 explores the perceived fit and misfit between consumer values and food brand perceptions. It has been argued that consumers tend to favour food products and brands whose properties are in accord with their personally supported values (e.g. Allen et al. 2008; Solomon 2007). They strive for consistency in their values and behaviours, because inconsistency produces feelings of unpleasantness and thus, an unfavourable taste experience of a food product (Allen et al. 2008). However, this consumer value – brand symbolism (in)congruity has explicitly been linked to consumers' taste perception only very recently (Allen et al. 2008). The present study tries to broaden the understanding of this poorly explored phenomenon by also considering the role of brand familiarity in affecting consumers' taste experience.

2 LITERATURE REVIEW AND DEVELOPMENT OF THE CONCEPTUAL FRAMEWORK

In this chapter, the emphasis is on understanding the impact of values on food consumption. First, consumer values are defined and a short overview on value theories is made, and then the value-behaviour –relationship is examined in the light of existing literature on psychology. Second, two influential food choice models that recognize also the impact of values on food choices is scrutinized. Third, a comprehensive literature review is conducted in order to clarify the role of values in food consumption. Last, a conceptual framework dealing with the direct and indirect influence mechanisms of values in consumers' food product experience is constructed for empirical investigation.

2.1 The relationship between values and consumer behaviour

2.1.1 Defining consumer values

Illustrated Oxford Dictionary (2003: 920) defines the word "value" in several different ways. For instance, value is "the worth, desirability, or utility of a thing", "the amount for which a thing can be exchanged in the open market" and "one's principles or standards; one's judgement of what is valuable or important in life". The latter definition represents the content of the value concept that concerns the consumer at the personal level. Although values can be consumption-specific (e.g. convenient shopping) or product-specific (e.g. ease of use) (Solomon 2007: 138), this study concentrates on consumer values that can shortly be defined as *desirable goals that vary in importance and serve as guiding principles in people's lives* (Schwartz 1994: 88). These individual value priorities are a product both of shared culture and of unique personal experience (Schwartz 1999: 25). More specific definitions of values can be found in Table 1. Next, the content of the value concept is explained through the characteristics that Schwartz (1992) has defined. These characteristics are commented in the light of Rokeach's (1973), Feather's (1995) and Verplanken & Holland's (2002) value definitions.

Values are concepts or beliefs that pertain to desirable end states or behaviors. Values have been considered as enduring beliefs that people hold about desirable ways of behaving or about desirable end states (Rokeach 1973: 5; Feather 1995: 1135). In other words, they are prescriptive or proscriptive (i.e. normative) beliefs, wherein some means or end of action is judged to be either desirable or un-

desirable (Rokeach 1973: 7). Thus, a value is a belief that some condition is personally or socially preferable to its opposite (Solomon 2007: 136; Rokeach 1973: 10). Values are also motivational constructs, since living up to a value fulfills a particular, highly abstract goal (Verplanken & Holland 2002: 434).

Table 1. Definitions of consumer values.

Author(s)	**Definition**
Rokeach (1973: 5)	"A value is an enduring belief that a specific mode of conduct or end-state of existence is personally or socially preferable to an opposite or converse mode of conduct or end-state of existence".
Schwartz (1992: 4)	"Values are concepts or beliefs, pertain to desirable end states or behaviors, transcend specific situations, guide selection or evaluation of behavior and events, and are ordered by relative importance".
Feather (1995: 1135)	"Values can be conceived as abstract structures that involve the beliefs that people hold about desirable ways of behaving or about desirable end states".
Verplanken & Holland (2002: 434-435)	"Values are motivational constructs (cognitions) that may define a situation, elicit goals and guide action".

Values transcend specific situations. Values are abstract structures that are relatively stable but not unchanging across the life span (Feather 1995: 1135). If values were completely stable, individual and social change would be impossible, and if values were completely unstable, continuity of human personality and society would be impossible (Rokeach 1973: 5–6). Since values can be considered as reasonably stable constructs, they transcend specific objects and situations and therefore, they are not only focused on a given or specified object or situation (Rokeach 1973: 18).

Values guide selection or evaluation of behavior and events. Values are standards that guide human action in daily situations (Rokeach 1973: 13-14). They also guide evaluation of people and events by their associations with a person's goals (Verplanken & Holland 2002: 435). Values can influence choice behaviour by determining the attractiveness of outcomes that are relevant to those values (Feather 1995). However, only a small subset of central values has the capacity of

actually driving behaviour, even though most values are widely shared (Verplanken & Holland 2002: 435).

Values are ordered by relative importance. Values are hierarchically organized in terms of their importance for self (Feather 1995: 1135). Most values are culturally shared, but individuals differ in how they rank the importance of specific values (Verplanken & Holland 2002: 434). The strength of a person's values may affect how much effort and time a person puts into an activity, the choices that are made between alternative activities and the way situations are construed (Feather 1995: 1135). Together, values form an organized system, wherein each value is ordered by its priority in respect to other values. A value system is a learned organisation of principles and rules to help one choose between alternatives, resolve conflicts, and make decisions (Rokeach 1973: 11, 14).

As mentioned above, values can be considered as enduring beliefs about what is (un)desirable but also as having a motivational function in influencing goal-directed behaviour (Rokeach 1973; Schwartz 1992; Feather 1995). Although values and beliefs, and values and motives have similarities in how they function, they are different concepts. Generally, a belief is a firm opinion or an acceptance of a fact (Illustrated Oxford Dictionary 2003: 80). Thus, the main difference is that a belief refers to what is considered as true, while a value refers to what is considered as important. A motive is a factor that induces a person to act in a particular way (Illustrated Oxford Dictionary 2003: 531). Both motives and values pertain to desirable goals, but values serve as drivers of consumer motivations (Solomon 2007: 148).

In this context, it is reasonable to distinguish values from attitudes and social norms in order to eliminate conceptual ambiguity. Even though values have also been considered to be special cases of attitudes, because desired end states are seen as objects of attitudes (Levy 1986), there are several differences between these two constructs. Unlike values, attitudes are focused on a given object or situation, attitudes do not serve as standards, and attitudes are multiple in number. In addition, values are determinants of attitudes and have a more immediate link to motivation. (Rokeach 1973: 18.) Moreover, values serve as better predictors of an individual's behaviour over extended periods of time (Chryssohoidis & Krystallis 2005). Next, even though values can be normative in nature, two clear differences between values and norms emerge. First, a social norm refers to a specific way of behaviour in a specific situation, while a value transcends specific situations. Second, a value is more personal and internal, whereas a norm is consensual and external to the person. (Rokeach 1973: 19.)

Although values, motives and attitudes are concepts with distinctive characteristics, they can also be considered as beliefs on different levels of abstraction. According to Vinson et al. (1977), the belief system consists of global values, domain-specific values and evaluations of product attributes. Global values are generalized personal values that are very centrally held enduring beliefs guiding actions and judgments across specific situations. Domain-specific values are consumption-related beliefs that are relevant to experiences in specific situations or domains of activity. Motives are certain kind of domain-specific values. Evaluations of product attributes are less centrally held, descriptive beliefs that can be considered as product and brand attitudes. Domain-specific values have an intermediate role in the interconnected hierarchical structure between personal values and attitudes. (Vinson et al. 1977) This also means that even though values and attitudes can be considered as individual concepts, they are not isolated from each other, because there are reciprocal causal influences between these constructs (Hauser et al. 2011: 329).

2.1.2 Value theories

Differences between cultures, social classes, occupations, religions and political orientations reflect differences in underlying values (Rokeach 1973: 26). Thus, in general, individual and cultural differences in value orientations create variation in consumer behaviour in a given situation. Several value theories have been developed for understanding the content and structure of values people possess and for measuring individual and cultural value differences. The value theories developed by Milton Rokeach, Geert Hofstede and Shalom Schwartz are probably the best known and most cited value theories in different fields of social sciences. Next, the principles of these theories are disclosed.

Rokeach's theory of values. Based on his earlier work on beliefs, values and attitudes, Rokeach (1973) wrote a book about the nature of human values. He studied values in American society and found variation in the importance of several values among people with different backgrounds. The endorsement of various values differed according to gender, age, education, income, occupation, race, religion, political orientation and some personality traits. That is, from the point of view of values, Rokeach examined the quality of life among Americans differing in their cultural and individual properties. He also examined value-attitude and value-behaviour -relationships in terms of many issues, such as religion and politics. The analysis was mainly based on his primary data sample (n=1400) that was collected in 1968 as part of a national opinion research project (Rokeach 1973: 55).

Rokeach measured Americans' values using a survey instrument. For the questionnaire, he formulated 18 terminal values (e.g. freedom, happiness, an exciting life), that serve as desired end-states of existence or goals to be achieved, based on a literature review, his own values, some students' values and adult interviews. He also formulated 18 instrumental values (e.g. independent, cheerful, imaginative), that are preferable modes of behaviour or means of achieving the terminal values, on the basis of hundreds of personality-trait words. The respondents needed to arrange both terminal and instrumental values in order of importance, as guiding principles in their own lives (Rokeach 1973: 27).

Schwartz's theory of values. Rokeach's conceptualisation has been a major basis for Schwartz in his efforts to develop a universal value structure. Schwartz (1992) has developed a circumplex model of individual-level motivational types of values, in which ten value types are organized on two bipolar dimensions (openness to change vs. conservation, and self-transcendence vs. self-enhancement). These value dimensions reflect the psychological dynamics of conflict and compatibility that individuals experience when pursuing their different values in everyday life. In the model, adjoining values are complementary to each other (e.g. stimulation and hedonism), whereas opposite values are conflicting with each other (e.g. universalism vs. power). The Schwartz's model is presented in Figure 2.

To clarify the contents of the value types, their central meanings are next shortly defined. Power addresses social status and prestige, and control for or dominance over people and resources. Achievement expresses personal success through demonstrating competence that is in accordance with accepted social standards. Hedonism mirrors pleasure and sensuous gratification for oneself. Stimulation reflects excitement, novelty and challenge in life. Self-direction portrays independent thought and action (choosing, creating, exploring). Universalism represents understanding, appreciation, tolerance, and protection for the welfare of all people and for nature. Benevolence refers to preservation and enhancement of the welfare of people with whom one is in frequent personal contact. Tradition denotes respect for, commitment to, and acceptance of the customs and ideas that traditional culture or religion impose on the self. Conformity reflects the restraint of actions, inclinations, and impulses likely to upset or harm others and to violate social expectations or norms. Security signifies safety, harmony, and stability of society, of relationships, and of self. (Schwartz 1994: 89.)

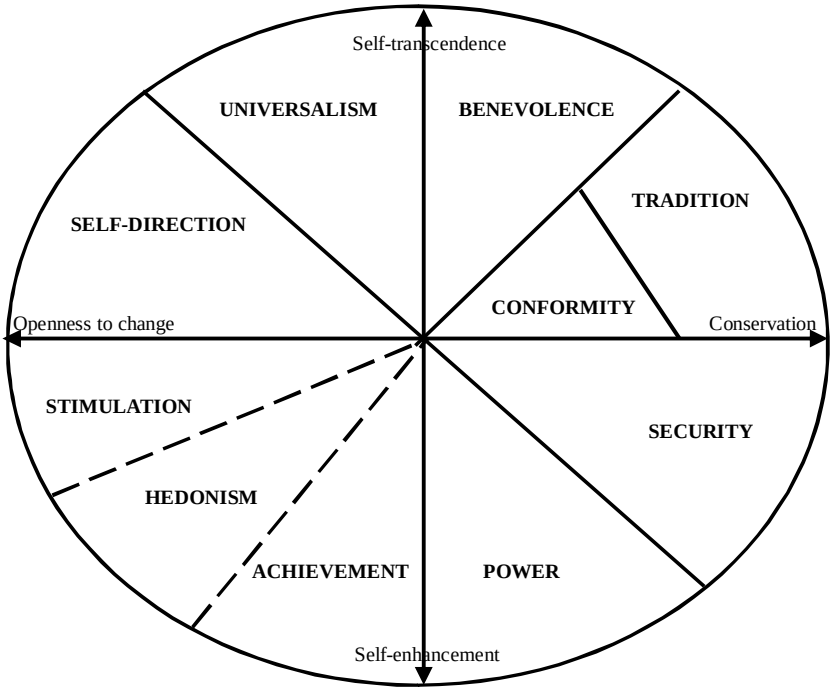

Figure 2. Schwartz's (1992) model of distinct types of individual values.

Schwartz developed a theory-based value survey for measuring people's value priorities. The value questionnaire consists of 56 values, from which 21 are identical to those in the Rokeach survey and the rest were selected from instruments developed in other cultures. In order to confirm the universality of value types and the dynamic relations among them, he conducted the value surveys among 9000 teachers and students in 20 countries. (Schwartz 1992: 17–18.)

Hofstede's theory of values. Hofstede studied national cultures between 1967 and 1978. Based on his research, he aspired to develop a commonly acceptable, well-defined and empirically based terminology to describe a large number of cultures. In 50 countries, he and his colleagues collected 116 000 questionnaires that dealt with work-related values (and attitudes) among employees of a large multinational corporation. Based on the subjects' responses to 47 questions, national characteristics could be revealed. According to Hofstede's data coupled with his theoretical reasoning, national countries differ from each other in terms of four criteria (value dimensions): individualism versus collectivism, large or small power distance, strong or weak uncertainty avoidance and masculinity ver-

sus femininity. Each country was given index scores that illustrate the degrees of each dimension in the society. (Hofstede 1983.)

The value dimension of individualism versus collectivism focuses on the degree the society reinforces individual or collective achievement and interpersonal relationships. The value dimension of power distance focuses on the degree to which inequality in power and wealth between people is accepted in the society. The value dimension of uncertainty avoidance focuses on the level of tolerance for uncertainty and ambiguity within the society. The value dimension of masculinity versus femininity focuses on the degree the society emphasises masculine work role model of male achievement, control and power; in feminine societies relationships with people are preferred before money, and the quality of life, the preservation of the environment and helping others are considered important.

To illustrate the meaning of these value dimensions in different cultures, Finland and Mexico can be used as examples. In Finland power distance is relatively small and individualism high, in Mexico vice versa. Further, a strong uncertainty avoidance and masculinity are associated with Mexico, while relatively weak uncertainty avoidance and femininity are characteristic to Finland. Later, after conducting an additional international study, Hofstede also found a fifth dimension of cultural values. The value dimension of long-term orientation focuses on the degree the society embraces values of long-term commitments and respect for tradition. In general, wealthy countries are more individualist, whereas poor countries are more collectivistic and display larger power distances. (Hofstede 1983; Cyborlink 2010.)

For the purpose of this study, the utilization of the Schwartz's value theory (1992; 1994) is appropriate for three reasons. First, Hofstede's value theory concentrates only on value differences between cultures, while Schwartz's theory deals with both individual and cultural levels of values, making comparisons between individuals' personally important values possible. In addition, Ng et al. (2007) argue that the cultural distance measures based on Schwartz's values may be superior. Second, Rokeach's theory does not explain how values, in relation to each other, can be organised. In turn, Schwartz's theory explains how values can be conflicting or compatible in a structured form. Third, Schwartz's value theory has been noticed to act as an applicable theory to explain consumer behaviour also in the context of food (e.g. Kihlberg & Risvik 2007; de Boer et al. 2007; Brunso et al. 2004b).

2.1.3 Theory of planned behaviour

Rokeach (1973: 326) has stated that culture, society, and personality are the major antecedents, and that attitudes and behaviour are the major consequents of values. If values are used to explain consumer behaviour, then the relationship between values, beliefs, attitudes, motives and behavioural intentions should be understood. If values are seen as desirable life goals and if behaviour is seen as implemented action that is motivated by these goals, then the above mentioned constructs have a moderating or mediating role between values and value-driven behaviour.

One model that explains or rather predicts consumer behaviour is the theory of planned behavior (Ajzen 1991). According to the theory of planned behavior, human action is guided by beliefs about the likely outcomes of the behaviour, by beliefs about normative expectations of others and by beliefs about the presence of factors that control the performance of the behaviour. These beliefs (or values that are considered as enduring beliefs; see e.g. Vinson et al.'s (1977) discrimination of belief levels) produce an attitude toward the behaviour, and this attitude together with social pressure and behavioural control constitute an intention that is assumed to be the antecedent of behaviour. In general, the more favourable the attitude and subjective norm, and the greater the perceived control, the stronger should be the person's intention to perform the behaviour. (Ajzen 2002) For instance, Maio and Olson (1995) found that altruistic values were positively related to attitudes toward donating and intentions to donate. They also emphasize that both value-attitude and value-intention relations are stronger when people have value-expressive attitudes (that express central values and the self-concept) than when they have utilitarian attitudes (that express some other goals, e.g. maximising personal rewards).

Also in the arena of food consumption, the theory of planned behavior has been tested. In their literature review concerning personal determinants of organic food consumption, Aertsens et al. (2009) stated that values are stable motivators for behaviour and that the relations between values and attitudes are moderated by beliefs. They concluded that organic food purchases are positively and significantly related to purchase intentions together with (perceived) behavioural control. Further, intentions are influenced by attitudes, (personal and subjective) norms and (perceived) behavioural control. Also Tarkiainen and Sundqvist (2005) have found that consumers' intentions to buy organic food can be predicted from their attitudes, which, in turn, can further be predicted from subjective norms, and that behavioural intentions reliably predict self-reported behaviour. Vermeir and Verbeke's (2008) findings related to sustainable (i.e. economically, ecologically

and socially responsible) dairy product consumption confirmed that attitudes and perceived behavioural control are significant predictors of behavioural intentions, irrespective of consumer values.

To conclude, these findings and the theory of planned behaviour indicate that because of attitudes and other moderators in this context, values often have an indirect influence on behavioural intention. Therefore the value-attitude and attitude-intention -relationships are thought to be stronger than the value-intention -relationship. Since the theory of planned behaviour only predicts behaviour, what is then the strenght of values in explaining actual behaviour? Logically, as the conceptual distance between these constructs (e.g. value-attitude-intention-behaviour) increases, the correlations are expected to get weaker. Thus, in theory, the direct link between abstract values and actual behaviour should be weaker and harder to realize than other (closer) links between the constructs. This is supported by a common observation that sometimes even strong intentions do not lead to actual behaviour, due to various possible personal, product-related and contextual reasons (see e.g. Rimal et al. 2004).

2.1.4 Value activation theory

Attitude activation and attitude strenght are typical concepts in attitude research. An attitude must be activated in memory in order to guide judgment and decision making. The likelihood that an attitude is activated often depends on the strenght of association between an object and evaluation (e.g. Sanbonmatsu et al. 2007; Simmons & Prentice 2006). Attitude strenght refers to durability and impactfulness; strong attitudes resist change in the face of a persuasive appeal, they remain stable over time, and they exert a powerful influence on thinking and behaviour (Visser et al. 2003). Centrality is an attribute of attitude that indicates the strenght of an attitude (Holland et al. 2003).

The concepts of "activation" and "centrality" have also been involved in value research, but not to the same extent. These concepts may function similarly within both attitudes and values, but it needs to be noted that in this study values are considered as being conceptually separated from attitudes, so the terms "value activation" and "value centrality" are used. However, this does not mean that attitudes and values are not interdependent or they are isolated from each other (see e.g. Hauser et al. 2011). In fact, the relationship between values and attitudes seems to be strong, when (central) values are activated. In a study by Dreezens et al. (2008), participants were primed with value "universalism" and after that they were asked to evaluate their attitude toward organically grown food. A strong value-attitude connection was found. Their results suggest that values are more

likely to significantly influence attitudes when the relevant value is activated. They also emphasize that without value activation it seems very difficult to suggest a link between a value and an attitude.

In a similar vein, consumer behaviour can be affected by value activation. For instance, in many situations, consumers may have an opportunity to act on the basis of their important values, but a value-congruent behaviour will not be realized. In those cases, a value-stressing stimulus may be missing. Therefore, in order to maximise the likelihood of value-congruent behaviour, consumer's central values (the most important values that contribute to a person's sense of identity) need to be activated. Activation occurs automatically when values are in the primary focus of attention of an individual, but values can also be activated by situational circumstances and by information a consumer faces (Verplanken & Holland 2002).

In a series of studies by Verplanken and Holland (2002), consumers' central values were cognitively activated by priming (information processing tasks). They found, for instance, that consumers made more environmentally friendly television choices, but only when environmental values were central to their self-concept and when they were primed with value-relevant information. Furthermore, when one value is activated along with others in a given situation, the behavioural outcome will be a result of the relative importance of all competing values that the situation has activated (Rokeach 1973: 6).

Another set of studies also illustrates the effect of value activation. In a study by Smeesters et al. (2003), participants endorsing social values (so called high consistent pro-socials) were significantly more cooperative than participants with an individualistic and competitive value orientation (so called high consistent pro-selfs), when they were activated by information related to social behaviour (morality primes). Lehtola et al. (2008) found that value activation had a moderate but positive impact on consumers' food product experience. Participants' sensory and product image evaluations of organic tomatoes were enhanced when pro-organic values were central to them and when they were activated by a value-stressing product message (appealing information about organic tomatoes); non-activated participants showed lower evaluation scores. In conclusion, it seems important to activate the central values of consumers, if value-congruent behaviour is to be witnessed in circumstances where values are not automatically guiding action or decision-making.

2.1.5 Consumer value – product/brand meanings (in)congruity theory

Consumers attach different meanings to products. Ligas (2000) has stated that a consumer classifies product meanings as either more functional or more symbolic. A functional meaning highlights the physical characteristics, features and benefits associated with the product, while a symbolic meaning captures more intrinsic and abstract notions about the product. When self-relevance and commitment to a product-related activity is high, product meanings can be linked to personal goals such as values that motivate and direct the individual. (Ligas 2000) This means that depending on the product and the consumer (and the context), the product's functional and symbolic meanings can have a stronger or weaker as well as more positive or negative relation to personal values. Product/brand meanings are typically based on the associations related to each individual product or brand.

Regarding food product associations, a distinction between primary and secondary associations can be made. Those few brand/product associations that consumers relatively easily (even automatically or unconsciously) retrieve from memory can be referred to as the primary or top-of-mind associations (Woodside and Thelen 1996). The brand/product associations that are weaker do not self-evidently come to consumers' mind unsolicitedly, and may require more conscious effort or outside cues to be retrieved from memory: they are secondary associations. Each food product has a unique configuration of the primary and secondary associations that are linked to how consumers perceive it (cf. Woodside and Thelen 1996). Depending on a particular food product, either associations related to its raw material or to the type of food (produced from this raw material; the so-called carrier) can pre-dominate over the other (Luomala et al. 2007). When a consumer associates or disassociates the meanings related to the raw material or to the carrier of a food product with the values (s)he personally supports or rejects, it can be called as the consumer value − product associations (in)congruity.

Especially, the symbolic meanings of a product can play a major role in explaining value-driven consumer behaviour. Interactions between consumer values and product symbolism as regards to product selection and rejection can be examined by the self-concept/product-image congruity theory, or shortly self-congruity theory (Sirgy 1982). According to the self-congruity theory, consumers prefer products/brands with images that are congruent with their self-concept. In other words, consumers tend to choose products with symbolic meanings that are in accordance with their perceived self-image. Because values are suggested to be tied to the self-concept (Rokeach 1973) and object symbols tend to be evaluated based on their human value content, the congruence between consumer values and product symbols can be called as value-symbol –congruity (Allen et al.

2008). Thus, as Allen et al. (2008: 296) have stated, "*Consumers likely react to a product's symbolic meaning; a product that symbolizes a human value that they endorse may result in a more positive attitude toward that product, and a greater likelihood of purchasing it, whereas a product that symbolizes a value that they reject results in an unfavourable attitude and a lower probability of purchase*".

Value-symbol congruity can also be applied in the context of consumers' taste evaluation. Allen et al. (2008) showed in their experiments that human values and cultural symbols influence taste evaluation, as consumers compare the human values symbolized by a product to their human value priorities. They found that participants who rejected social power values (that are symbolized by meat) had a more favourable taste evaluation, attitude and purchase intention when they believed they had tasted a certain vegetarian product than when they believed they had tasted an alternative beef product, regardless of the product (a beef roll vs. a vegetarian roll) they actually evaluated. Similarly, in their cola drink study, participants who supported the values symbolized by Pepsi (e.g. exciting life and enjoying life) had a more favourable taste evaluation when told they had tasted Pepsi than when they believed they had tasted the low-priced alternative Woolworth cola.

2.2 Food choice models

Consumer's food choice is an outcome of a complex process that has inspired many researchers to develop holistic models, in which different inter-related factors are displayed. In the majority of these food choice models, influential factors are divided into three main categories that concern the consumer, the product, and the environment. In Table 2, some models that are relevant for consumer research are presented. The list of studies is not exhaustive, but still represents the nature of conceptions and antecedents researchers have discovered to be associated with food choices.

Table 2. Some influential food choice models from the last three decades.

Model presents	Important factors	Study
Food preferences	Characteristics of the individual, food and environment	Randall and Sanjur 1981
Food preferences	Biological, physiological and psychological + personal + socio-economic + educational + cultural, religious and regional + intrinsic + extrinsic	Khan 1981
Food choice and intake	Food-related, person-related, economic and social	Shepherd 1985
Food choice	Food-related, consumer-related, context-related	Gains 1994
Food choice	Life course; influences: ideals, personal factors, resources, social framework and food context; personal system: value negotiations, strategies	Furst et al. 1996
Consumer behaviour with respect to food	Properties of the food, person-related, environmental + decision process	Steenkamp 1997
Food choice	Food-related, person-related, situation-related	Sobal et al. 2006
Eating and drinking behaviour and food choice	Biological and physiological, psychological + extrinsic and intrinsic product characteristics + situational and socio-cultural	Köster 2009 (J. Mojet's model 2001 presented)
Food choice	Decision process, environmental influences, individual differences	Marreiros and Ness 2009

To give an insight to what elements and stages are included in a food choice process, two models from Table 2 are presented next, namely the conceptual models of Steenkamp (1997) and Furst et al. (1996). These two models comprehensively and in a fairly simple way illustrate the procedural nature of food choice with several different influential factors, including personal factors such as values. However, other models will not be entirely neglected, since their elements are adduced in the discussion.

2.2.1 Examining the food choice process through Steenkamp's model

Steenkamp (1997) has divided factors that affect food choices into product-, consumer- and environment-related categories (see Figure 3; in addition, table 3 illustrates how these factors have been examined in some food studies). Generally, they are the central features in most of food choice models. The factors in these

three categories can also exert their influence in interaction with each other. Sometimes a certain factor can be regarded as belonging to two categories at the same time. For example, personal values can be seen to represent individual factors, and cultural values can be seen to represent environmental factors.

To start with, properties of food include both physical and chemical properties and nutrient content. These are quality attributes of food products, including for instance sensory attributes (appearance, texture, aroma and taste) and size, but they also consist of composition attributes such as fats, carbohydrates, proteins, dietary fibre, minerals, vitamins, additives and chemicals (Schröder 2003). Food properties affect consumer behaviour by means of their physiological (e.g. satiety, hunger, thirst and appetite) and sensory effects (how consumer perceives sensory attributes) (Shepherd 1985). In general, consumers usually choose foods that they like from a sensory perspective (e.g. Urala & Lähteenmäki 2006).

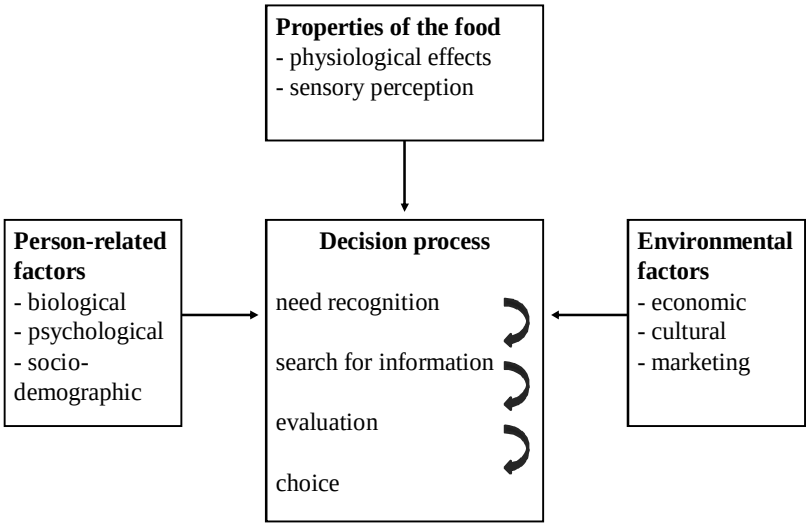

Figure 3. Steenkamp's (1997) model for consumer behaviour in respect to food.

Person-related factors, which shape food choices due to individual differences, include biological, psychological and socio-demographic factors. Biological factors are for instance genetic factors (Köster 2009) as well as age, gender and body weight (Steenkamp 1997). For instance, an individual's taste and food preferences

can change over years because of aging process (de Graaf 2007). Psychological factors include cognition, emotion, *values*, attitudes, motivation, decision-making style, memory, learning, previous experiences and personality traits such as variety-seeking tendency, ethnocentrism and neophobia (Köster 2009; Marreiros and Ness 2009; Steenkamp 1997; Lähteenmäki & Arvola 2001). Socio-demographic factors encompass for instance education level, occupation, ethnicity, religion, marital status and place of residence (urban/rural). To illustrate, ethnicity has been shown to influence food choices in the USA. In a study by Cullen et al. (2007), Hispanics purchased more fruits and vegetables than African Americans.

Table 3. Examples of studies examining the influence of certain product-, consumer- and environment-related factors on food choice.

Factor	Subject/analysis	Study
Product: properties of the food	Tasting and liking of a food guided the food choice: the actual liking ratings influenced the snack bar choices	Urala & Lähteenmäki 2006
Person: biological	Children prefer sweet tasting foods, while elderly may favour foods with higher concentrations of tastants/odorants due to a loss in sensitivity for taste and for smell.	de Graaf 2007
Person: psychological	Variety seeking tendency can promote trials of new foods and accelerate the development of boredom to specific foods. Conversely, food neophobia can obstruct trials of new foods.	Lähteenmäki & Arvola 2001
Person: socio-demographic	Ethnicity affected food choices in the United States: Hispanics purchased a greater percentage of fruit and vegetables than African Americans. Whites purchased more alcohol products than African Americans.	Cullen et al. 2007
Environment: economic	Low income consumers tend to be price sensitive; typically, they make different food choices than high income consumers	Ritson & Petrovici 2001
Environment: cultural	Price and ethical concern were more important food choice motives for Japanese consumers than for Taiwanese and Malaysian consumers	Prescott et al. 2002
Environment: marketing	Brand showed a high impact on consumer choice of yogurts.	Ares et al. 2010

Environmental factors include economic, cultural and marketing factors (Steenkamp 1997), and social and situational influences (Sobal et al. 2006); they are contextual influences that determine what, where, when, with who, how and why food choices are made. Economic factors mainly refer to family income and food costs (Khan 1981; Steenkamp 1997). Typically, the less money a consumer/household has, the more monetary issues count in food choices (Ritson & Pe-

trovici 2001). Culture suggests or may even require what, when and how much is to be eaten (Rozin 2007). Therefore, also motives for food choice vary between cultures (e.g. Prescott et al. 2002). The social and situational influences are related to social surroundings (e.g. eating alone or with family/friends), time (e.g. morning or evening, weekday or weekend), place (e.g. physical surroundings, location, home or restaurant), circumstances (e.g. atmosphere, distractions), manners (e.g. habits, rules) and seasonal variations (Köster 2009; Sobal et al 2006; Gains 1994; Khan 1981).

Marketing activities (e.g. branding, advertising, packaging, country of origin) are on the one hand an environmental force in influencing food choice decisions, but on the other hand they are also associated with extrinsic product characteristics (Köster 2009; Khan 1981). Despite this complication, branding is a marketing activity that affects consumer choices. Namely, consumers seem to appreciate familiar (well-known, strong) brands, when making their food purchases. Among various food product categories, familiar brands have been associated with stronger purchase intentions (e.g. Ares et al. 2010), choice preferences (e.g. Goodman 2009; Hoyer & Brown 1990) and purchase loyalty (e.g. Esch et al. 2006; Espejel et al. 2007).

In the core of the Steenkamp's (1997) model (see Figure 3), the four stages of the consumer decision-making process, which is affected by the food-, person- and environment-related factors, are presented (based on Engel, Blackwell and Miniard 1995). At the first stage, a need arises when there is a discrepancy between a desired and an actual state of being. The need recognition can be triggered by depletion of a food product, by dissatisfaction with the current product, by willingness to experience new products and by marketing activities. At the second stage, consumers search for information about the alternatives; this can be based on previous experiences with the food product (internal search). External information search (e.g. examining product package information) is usually limited, if consumers' involvement-level is relatively low, time pressure high, quality variation low, and if product innovations or price changes are few in number. At the third stage, a consumer evaluates those alternatives that fulfil the same need. The evaluative criteria can be for instance taste, price, brand name, freshness, country of origin and fat content, depending on the product in focus. In general, quality and guarantee cues increase consumers' confidence in a purchase situation, as consumers weigh the consequences or benefits that are the likely outcomes of using the product. The perceptions of evaluative criteria are formed by direct observation (e.g. product trial) or by accepting information confronted (e.g. recommendations from others, product cues). At the fourth stage, food choice behaviour is affected for instance by product attitudes, social influences, habit and satiation

capacity (see Table 3). (Steenkamp 1997) However, this decision-making process is not that exhaustive in many situations; food choice is often based on heuristics (see the next model).

2.2.2 Examining the food choice process through Furst et al.'s model

Furst et al.'s (1996) model differs from Steenkamp's (1997) model in several ways. First of all, it is based on an empirical analysis of qualitative data, which produced factors affecting food consumption that are perceived and weighed differently by consumers. Secondly, the decision process is less structured, and focuses more on the evaluation of food choice consequences. Thirdly, personal factors together with contextual influences are emphasized, leaving product-related factors in the background. Fourthly and most importantly as regards to this study, values have been given the central role in the model. Next, the components of the Furst et al's (1996) model (Figure 4) are disclosed. Table 4 illustrates some studies that have found links between this model's factors and food choices.

Life course refers to the influences of past personal experiences and historical eras. It includes personal roles and the social, cultural and physical environments to which a person has been and is exposed (Furst et al. 1996). Life course experiences have been shown to affect, for instance, consumers' current intake of fruits and vegetables (Devine et al. 1998). These experiences generate influences that materialize in the form of ideals, personal factors, resources, social framework and food context. The ideals are expectations, standards, hopes and beliefs, by which people judge and evaluate their food choices. They reflect cultural and symbolic meanings of food as well as aspirations, *values* and sense of identity, and they describe how things should or could be (Furst et al. 1996). To illustrate the influence of values, Botonaki and Mattas (2010) discovered that consumers who embrace achievement values (i.e. personal success through competence, capability, ambition) are typical convenience food users.

Personal factors are based on psychological and physiological traits, and include for example likes and dislikes, individual foodstyles, food centeredness, mood, age, gender, sensory preferences and state of hunger (Furst et al. 1996). For instance, when a consumer is having a stressful period in her/his life, unhealthy food choices become more salient (Oliver & Wardle 1999). Resources determine food choice options, since money, equipment, storage facilities, skills, knowledge and time are either available or unavailable, depending on the individual's outlooks and situations (Furst et al. 1996). For example, time scarcity has been found to correlate with food choices that favour fast food (Jabs & Devine 2006).

A social framework consists of interpersonal relationships (e.g. between family members, workmates and friends) and social roles that may raise issues of conflicting priorities in households (e.g. who provides food, what to eat together) (Furst et al. 1996). For instance, Bevelander et al. (2011) found that young consumers' food choices are susceptible to peer influences. The food context includes the physical surroundings (e.g. availability of certain foods, market factors) and social environment, in which food choices occur (Furst et al. 1996). Even temperature, sounds and lighting of the surroundings can change consumers' food choice preferences (Stroebele & de Castro 2004).

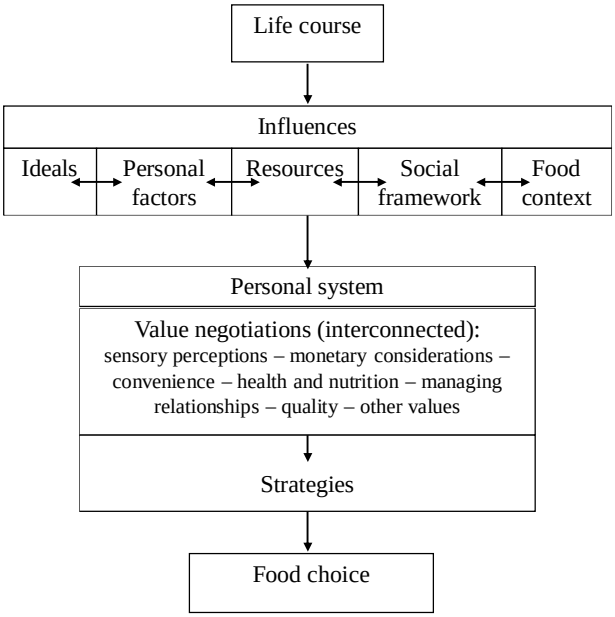

Figure 4. Furst et al.'s (1996) model of the food choice process.

A personal system for food choice is formed by life course influences. Consumer values together with other personal and contextual influences affect how food values guide food selection. According to their personal system, people weigh and accommodate food values in a particular food choice situation. The most important food values that were found to guide food choices in the study of Furst et al. (1996) were sensory perceptions (e.g. taste), monetary considerations (e.g. price, worth of food), convenience (e.g. ease of access and preparation), health/ nutrition (e.g. well-being, weight control), managing relationships (e.g. maintain-

ing harmony in a household) and quality (e.g. levels of excellence). In general, these food values or food choice motives have been detected to be a major factor in consumers' food choice decisions (e.g. Lappalainen et al. 1998; Connors et al. 2001; Steptoe, Pollard & Wardle 1995). When a person ponders which of the food values is dominant and decisive in a given situation, negotiations or prioritizations are needed in solving value conflicts. An example of a value negotiation is a consumer's wish to eat healthily, but s(he) may still choose convenience or indulgent food for a meal (Leipämaa-Leskinen 2007). Lastly, consumers develop strategies for making food choices. Thus, food choices are typically made with the help of heuristics, habits or rules that simplify the choice task in different settings (Furst et al. 1996; Scheibehenne et al. 2007).

Table 4. Examples of studies examining influences and value negotiations concerning food choice.

Factor	Subject/analysis	Study
Life course	Past life-course events and experiences were strong influences on present systems for fruit and vegetable choices. Life-course transitions (e.g. changes in roles, health, or resources) are occasions when food choice systems may undergo change and may offer opportunities for interventions.	Devine et al. 1998
Ideals	Values: Consumers for whom achievement value is personally important tend to consume convenience foods.	Botonaki & Mattas 2010
Personal factors	Stress: Among UK students, stress increased snacking behaviour while the intake of fruits, vegetables, meat and fish decreased during stressful periods.	Oliver & Wardle 1999
Resources	Time scarcity led to changes in food consumption patterns: a decrease in food preparation at home and an increase in the consumption of fast foods.	Jabs & Devine 2006
Social framework	Teenage girls followed unhealthy food purchases of a peer during shopping.	Bevelander et al. 2011
Food context	Changes in food intake and choice can be detected as a function of differences in people present, food accessibility, eating locations, time of consumption, ambient temperature, lighting and sounds, and temperature, smell and colour of foods.	Stroebele & de Castro 2004
Food value negotiations	Consumers would like to engage in several food-related activities, but significant barriers prevent them from fulfilling these desires. For instance, healthy eating was found to be difficult to fulfil due to the wishes of convenience in cooking, economical food purchases or indulgence in eating.	Leipämaa-Leskinen 2007
Strategies	Many daily food decisions are based on simple heuristics that aim to satisfy people's most important preferences without the need to make trade-offs rather than on weighing and adding of several aspects.	Scheibehenne et al. 2007

In summary, a food choice is influenced by a multitude of interacting factors that relate to the consumer, product and environment. For instance, past experiences, context and individual differences in interaction affect food choice behaviours. Personal values represent psychological factors or ideals that guide food choices, but in many food choice and eating cases, other personal factors and contextual influences can force the consumer to act against her/his personally important values. Thus, personal values seem to have a relatively small role in explaining food choices, since several other factors also influence the outcome. Food values, instead, seem to have a greater role, because consumers tend to prioritize their needs and wants; dominant food values vary in different food choice situations. As a result, food choice can be considered as a process, in which decision making is needed to determine food choice criteria and to evaluate the compatibility of the food, which is being considered for selection, with personal (e.g. values) and situational factors. On the other hand, sometimes simple heuristics are adequate to guide food-related decisions. Although the reasons behind food choices have been the main focus in this chapter, it needs to be noticed that food choice decisions are also involved in food preparation, cooking, eating and disposal that occur after food acquisition (Marshall 1995).

2.3 Evidence for the value effects in consumers' food product experience

In this study, a concept called "food product experience" (FPE) is used. It includes different elements related to food consumption, such as sensory evaluation, product attitudes, product images, purchase intentions and food choice behaviours (Lehtola et al. 2008). In general, a product experience is the outcome of human-product interaction in a given context, involving subjective feelings and behavioural, expressive and physiological reactions (Desmet & Hekkert 2007). Thus, a consumer's FPE is a subjective response to a given food product, meaning that FPEs can vary between consumers due to individual differences. Personal values are an example of such consumer characteristics that can shape product experiences (Desmet & Hekkert 2007). In the next subchapters, a literature review is conducted to illustrate how values are attached to the antecedents of behaviour (motives, attitudes, intentions) in the context of food, and how values explain food-related behaviours (food choice, sensory perception). In other words, the review clarifies the role that values play in consumers' food product experience.

2.3.1 The relationship between values and food choice motives

Values have been said to have a motivational function (Rokeach 1973). This indicates that values are closely related to motives. In fact, motives are a type of domain-specific values (Vinson et al. 1977); food choice motives are relevant to the domain of food consumption. Therefore, some authors have considered them as food-related values (Connors et al. 2001) and eating-related values (Simmons 1989). For instance, Honkanen et al. (2006) defined that ethical food choice motives represent this level of the value construct, considering motives as more specific than personal values but more abstract than attitudes.

Only few studies have examined specifically the relationship between personal values and food choice motives. This may derive from the fact that some food choice motives are tightly knit to certain personal values, leaving the analysis of this relationship unnecessary. For instance, those consumers who might report the food choice motive "health" (e.g. Steptoe et al. 1995) to be an important eating or purchase criterion, are assumingly also likely to embrace the personal value "healthy" (not being sick physically or mentally) (see Schwartz 1992). However, past research has shown some positive and negative correlations between central consumer values and food choice motives (Table 5).

Table 5. Two food studies analysing the relationship between values and food choice motives.

Author(s)	**Value(s)**	**Relation to a food motive**
de Boer et al. (2007)	Security	Neg. correlation with taste orientation
	Conformity	Neg. correlation with taste orientation
	Tradition	Neg. correlation with taste orientation
	Self-direction	Pos. correlation with taste orientation
	Stimulation	Pos. correlation with taste orientation
	Hedonism	Pos. correlation with taste orientation
Brunso et al. (2004b)	Universalism	Pos. correlation with health motive
	Stimulation	Pos. correlation with novelty motive
	Stimulation	Pos. correlation with social motive
	Stimulation (Spain)	Pos. correlation with convenience motive
	Power (Germany)	Pos. correlation with convenience motive
	Tradition	Pos. correlation with security motive

Brunso et al. (2004b) studied the relationship between Schwartz's values and food-related lifestyle, which is a mediating construct between values and behaviour as it pays attention to the underlying motives driving the way people perceive and experience food in their everyday life, among German and Spanish consum-

ers. To illustrate the cultural similarities and differences in their results, the health motive was positively related to universalism and negatively related to power in both countries, the convenience motive was positively related to stimulation (negatively to benevolence) in Spain but positively related to power (negatively to universalism) in Germany, and the taste motive was positively related to hedonism (negatively to tradition) in Germany but positively related to security (negatively to self-direction) in Spain. In addition, de Boer et al. (2007) found that the taste orientation (e.g. being proud of one's taste, being eager to taste something new) correlated positively with self-direction, stimulation and hedonism but negatively with security, conformity and tradition. This indicates that the taste motive or sensory appeal is more important to the hedonistic consumers.

2.3.2 The effects of consumer values on food product attitudes and buying intentions

Consumers' attitudes and intentions can predict food choice behaviours. If consumer's food-related product attitudes and purchase intentions are positive, then the likelihood of food purchase should be higher compared to a situation where these predictors of behaviour are negative. However, these predictors as such do not directly reveal the fundamental reasons for a food choice. Therefore, many researchers have tried to understand and predict food choices based on consumers' values. Table 6 presents studies that have analysed the influence of consumer values on attitudes and intentions as regards to food products.

Table 6. Food studies analysing the influence of values on attitudes and intentions.

Author(s)	**Value(s)**	**Value effect(s)**	**Food product(s)**
Botonaki & Mattas (2010)	Achievement Tradition	Pos. attitude Pos. attitude	Convenience food Natural food
Dreezens et al. 2005a; 2005b	Power Power Universalism Universalism	Pos. attitude Neg. attitude Pos. attitude Neg. attitude	Genetically modified Organically grown Organically grown Genetically modified
Grunert & Juhl 1995	Universalism, self-direction and benevolence Power, security and conformity	Pos. associated with environmental attitudes Neg. associated with environmental attitudes	Organic foods
Honkanen & Verplanken (2004)	Universalism & hedonism	Neg. attitude	Genetically modified
Tudoran et al. 2009	Health	Pos. attitude	Functional foods
Vermeir & Verbeke 2008	Traditional values Power seekers	Pos. intention Neg. intention	Sustainable foods (e.g. organic, fair trade)

Several authors have found connections between consumer values and product attitudes and purchase intentions. To illustrate, universalism has been related to positive and power to negative attitudes toward organic foods (Dreezens et al. 2005a; Dreezens et al. 2005b: Grunert & Juhl 1995). In turn, universalism has also been related to negative attitudes toward genetically modified foods (Dreezens et al. 2005a; Dreezens et al. 2005b; Honkanen & Verplanken 2004). Traditional values have been associated with positive attitudes toward natural food (Botonaki & Mattas 2010) and with the positive purchase intention of sustainable foods (Vermeir & Verbeke 2008). In addition, those consumers who endorse health have displayed positive attitudes toward functional foods (Tudoran et al. 2009), and convenience food-related attitudes have been positive among consumers that embrace achievement values (Botonaki & Mattas 2010).

2.3.3 The effects of consumer values on food choices

In accordance with the presented findings on value-attitude relationship, similar value effects have been shown on various food consumption behaviours such as product choice, purchase and usage (see Table 7). Universalism has been found to relate to a more frequent consumption of organic foods (Aertsens et al. 2009; Fotopoulos et al. 2011; Kihlsberg & Risvik 2007; Krystallis et al. 2008) and to an appreciation of high quality foods in general (Worsley et al. 2010), but to a less frequent consumption of meat products (de Boer et al. 2007) and white bread (Worsley 2003). Power, in turn, has been associated with a lower level of consumption of organic foods (Kihlsberg & Risvik 2007).

Benevolence- (Fotopoulos et al. 2011; Krystallis et al. 2008) and security-values (Aertsens et al. 2009; Fotopoulos et al. 2011; Shaw et al. 2005) have also been found to correlate with a higher level of organic (or quality/healthy) food consumption. In addition, security and conformity values have been shown to correlate positively with vegetable intake (Nijmeijer et al. 2004). In the study of Goldsmith et al. (1997), social values (self-respect, warm relationships, accomplishment, security, self-fulfilment, belonging) correlated negatively but significantly with the use of convenience food (take-home and microwave meals).

Table 7. Food studies analysing the influence of values on food choice.

Author(s)	Value(s)	Value effect(s)	Food product(s)
Aertsens et al. (2009)	Security (health) Hedonism (taste) Universalism	Purchase	Organic foods
de Boer et al. (2007)	Universalism	Lower self-reported consumption frequency	Meat
Fotopoulos et al. (2011)	Security, universalism and benevolence	Higher purchase frequency	Quality foods (e.g. organic and PDO)
Goldsmith et al. (1997)	Social values	Neg. correlation with self-reported purchase frequency	Convenience food
Kihlberg & Risvik (2007)	Universalism Power	Higher self-reported consumption frequency Lower s-r. cons. freq	Organic foods
Krystallis et al. (2008)	Universalism & benevolence	Higher purchase frequency	Organic foods
Nijmeijer et al. (2004)	Security & conformity	Higher self-reported consumption frequency	Vegetables
Shaw et al. (2005)	Security	Food shopping	Healthy foods
Worsley (2003)	Universalism	Neg. relation to consumption	White bread
Worsley et al. (2010)	Universalism	Self-estimated shopping behaviour	High quality foods

The relationship between personal values and food choices has also been linked to cultural differences. For instance, White et al. (2004) found, when examining the consumption of convenience and freshly made Indian foods among English and Indian people living in the UK, that the consumer groups' perceptions of Indian foods were guided by certain differences in values. Both groups shared the values of health and enjoyment, but while the values of social life, adventure and savings were important for the English respondents, good life, religion and culture were desirable value ends for the Indians.

2.3.4 The effects of consumer values on sensory perception of food

Sensory perception (i.e. evaluation of appearance, scent, flavour and texture of food and drink samples or products) has been linked to personal values only infrequently in consumer and sensory studies. Allen et al. (2008) analysed the influence of certain central values on taste evaluation and found that congruity between consumers' values and product symbols led to an enhanced taste experience, whereas incongruity resulted in the deteriorated taste experience (see chapter 2.1.5). Kihlberg and Risvik (2007) studied the liking of bread among two consumer segments that were formed according to subjects' age (under or above 30

years). The segments differed from each other by their value orientations. The consumers who were under 30 years old endorsed values such as true friendship, enjoying life and being successful, while the consumers above 30 years old endorsed values such as accepting life, wisdom and national security. They evaluated the liking of organic and conventional bread samples (five in total), and the taste of one conventional bread sample was rated significantly better among the younger consumers embracing more hedonistic values. In Lehtola et al.'s study (2008), those consumers (with so called pro-organic values) who were activated by value-congruent product information liked the taste and smell of an organic tomato product significantly more than their non-activated counterparts. Table 8 lists the essential features from these three studies.

Table 8. Food studies analysing the influence of values on sensory perception.

Author(s)	**Value(s)**	**Value effect(s)**	**Food product(s)**
Allen et al. (2008)	Low social power High excitement and enjoyment High excitement and enjoyment	Higher taste evaluation Higher taste evaluation Lower taste evaluation	Vegetarian food Pepsi cola Woolworth cola
Kihlberg & Risvik (2007)	Younger (e.g. hedonism) vs. older consumers (e.g. accepting life)	Younger liked more	White bread sample
Lehtola et al. (2008)	Activated pro-organic values	Improved flavour and scent	Organic tomatoes

The scarcity of studies that examine the relationship between values and sensory perception indicates that most food researchers have probably not thought that there might exist a link between abstract consumer values and taste preferences. However, several studies have shown that product/brand attitudes and associations shape the sensory perception of foods, especially when consumers recognise the brand. For instance, revealing brand cues, in comparison to blind evaluation, has improved consumers' taste experience of a meat product (Vranesevic & Stancec 2003), convenience food (Robinson et al. 2007), orange juice (Hoegg & Alba 2007), beer (Allison & Uhl 1964) and tomato puree (Di Monaco et al. 2003).

2.3.5 Evaluative summary

A review of the studies that have analysed value effects on actual or predicted food consumption behaviours reveals that four research themes seem to dominate the field. First, many of the studies presented here have focused on the relationship between universalistic values and organic foods and found that consumers endorsing universalism have a positive attitude toward and a tendency to purchase organic foods. Other values such as hedonism and tradition seem to be less explored in the arena of food consumption. Second, the use of Schwartz's value theory as a conceptual basis in the majority of studies indicates that it has been accepted to be applicable in analyses concerning food consumption. Third, researchers have concentrated on studying specialty foods (e.g. organic, genetically modified, functional, convenience) instead of conventional foods, which likely derives from the increased popularity of these food consumption trends. Fourth, conscious activation of consumers' central values is missing from most of the study procedures, although value activation enhances the likelihood of value-congruent behaviours.

This study takes into consideration the observations mentioned above. First, of consumer values, tradition and hedonism are put in the focus of this research. Health and safety values are considered as well. Second, because of the validity of the Schwartz's theory, it will be utilized in the empirical research. Third, instead of food products characterized by higher involvement levels, also conventional food products with lower involvement levels are included in the empirical study. Finally, activation of consumers' central values will be systematically and deliberately performed.

2.4 Development of the conceptual framework

In the previous chapters, a literature review concerning the relationship between consumer values and food product experience was conducted. On the basis of the review, a theoretical model of the focal research phenomenon is formulated. The conceptual framework of the study is presented in Figure 5 ("A" means article, in which the depicted relations are studied). It illustrates how consumer values are postulated to be linked to a food product experience. It has been defined earlier that a food product experience consists of elements that predict behaviour (attitudes and images, motives, purchase intentions) and that deal with actual behaviours (sensory perception, food choice). It has also been noted that in order to maximize the likelihood of value-congruent behaviour, consumer's central values need to be activated by value-stressing stimulus. Theoretically, the relationship

between the activated consumer values and food product experiences can be examined either through a direct or an indirect influence mechanism.

The direct influence mechanism supposes that food product experiences are immediately influenced by consumers' activated central values (ideally, other influential factors and mediating or moderating variables are eliminated from the context). Based on the theoretical discussion regarding consumer values, value activation and food consumption, consumers with distinct value orientations are predicted to differ in their food product attitudes, food choice motives, food choices and sensory perception. These relationships are studied in the first two articles.

The first article (A1) investigates the extent to which consumers' activated central values influence both food product images and actual food choices. It is expected that

> **H1**: After the value activation consumers will favour food products that are in accordance with their central values.

The second article (A2) examines the extent to which consumers' activated central values affect their food choice motives and sensory perception of food. It is expected that

> **H2**: There will be variation in both general food choice motivations and in food liking among consumers embracing different and opposing central values.

The indirect influence mechanism assumes that food product experiences are moderated by consumers' activated central values. This means that the perceived (mis)fit between consumers' values and the associations and symbolism related to food products and brands are postulated to have an influence on food product experience. The last two articles investigate these relationships that have been under theoretical discussion in chapter 2.1.5.

In line with the consumer value − product associations (in)congruity theory, it is expected in the third article (A3) that

> **H3**: Food product-related communication activating different consumer values is effective in influencing sensory perception of, attitudes toward and buying intention of these food products if it is congruent with the primary associative component of the carrier – raw material combination.

In the fourth article (A4), consumer value-brand symbolism (in)congruity is expected to modify food product experiences in the following way:

> **H4a**: When consumers' activated central values are congruent with the food brand symbolism, it has positive effects on taste perception.
>
> **H4b**: When consumers' activated central values are incongruent with the food brand symbolism, it has negative effects on taste perception.

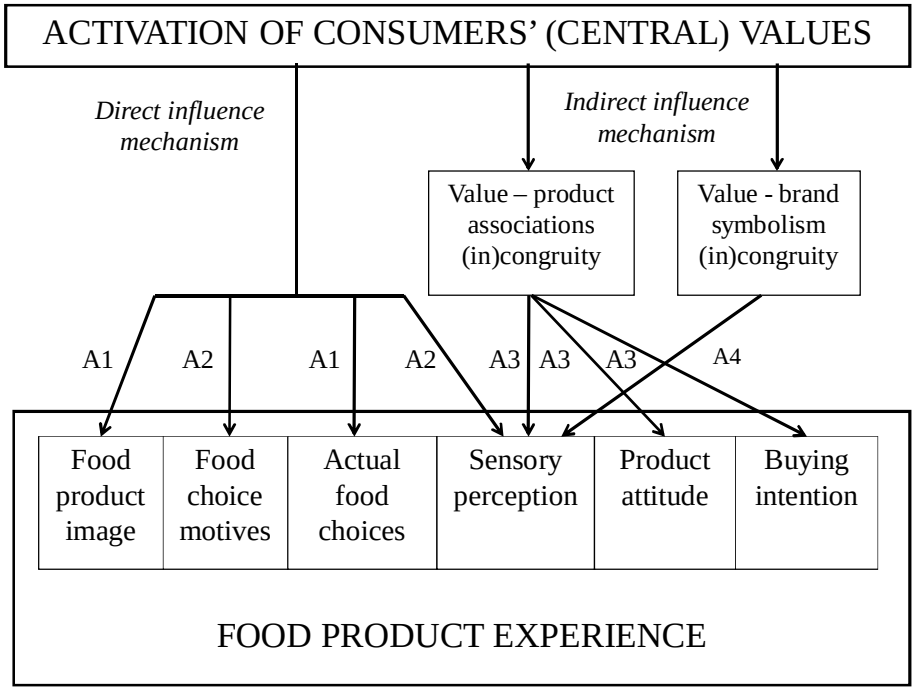

Figure 5. Conceptual framework: direct and indirect influences of consumer values on elements of food product experience.

Next, in the empirical part of the dissertation, the links between activated central values and food product experiences (see the hypotheses and figure 5 above) are explored. First, the methodological choices are justified, and after that the results from two empirical studies are presented.

3 RESEARCH METHODOLOGY

This chapter introduces the principles and methods that were used in the data gathering and analysis. First, the premises of philosophy of science on which this research is grounded are discussed. Second, the selection of an appropriate research approach is justified. Third, the operations used in data collection are summarised. Lastly, the data analytic procedures are specified.

3.1 Paradigmatic assumptions

In consumer research, as in other fields of social sciences, there exists alternative ways of gaining knowledge about people. Thus, methodological choices and processes vary between researchers, disciplines and research phenomena. However, a researcher needs to follow specific philosophical principles in order to conduct a credible and convincing study. Accordingly, (s)he endeavours to obey those beliefs and views that are considered to be true and right under a certain paradigm (i.e. philosophical framework) (Metsämuuronen 2003: 21). Therefore the philosophical background of the study should be brought forth so that the choices made under the research process can be understood.

The research approaches used in consumer behaviour studies can roughly be divided into positivist and interpretivist perspectives. The paradigm of positivism stresses the objectivity of science and regards the consumer as a rational decision maker. In contrast, the paradigm of interpretivism emphasises the importance of symbolic and subjective experiences and meanings, and the possibility to interpret consumer behaviour in numerous ways. It also emphasises that there exist multiple and socially constructed realities. (Solomon 2007; Hudson & Ozanne 1988.) These two paradigms prominently differ in their philosophical assumptions, but they both are acknowledged and extensively applied in consumer research. Sometimes methods from both approaches are employed in a single study to increase its trustworthiness. (Hanson & Grimmer 2007; Hunt 1991.) This study has roots in positivist approach which remains the dominant paradigm in consumer and marketing research (Solomon 2007; Hanson & Grimmer 2007).

The principles of positivism can be examined through its ontological, axiological and epistemological assumptions. According to the positivistic ontological assumptions regarding the nature of reality, there is only one real world in which objective perceptions are structuring reality. Parts of the reality can be "separated from their usual context and placed in the controlled settings for observation". In such circumstances, as in laboratory experiments, the researcher is able to deal

with complex relationships and control unstudied variables, and make accurate measurements and observations of this world. (Hudson & Ozanne 1988.) In line with these statements, this study examines certain parts of the reality under monitored circumstances. More specifically, the relationships between different food- and consumer-related variables are measured and controlled in the experimental conditions.

Axiological assumptions pertain to the fundamental goals of research. Positivists aim at explaining and predicting a phenomenon by demonstrating the systematic association between the variables of interest. Finally, epistemological assumptions refer to knowledge creation and to the boundary conditions for making generalizations based on study findings. Positivists seek out general laws that can be applied to a large number of phenomena, people, settings and times. They try to identify causal linkages, so that human action can be explained by real causes that temporally precede behaviour. In addition, positivists try to maintain objectivity by being independent and separated from subjects during investigation. (Hudson & Ozanne 1988.) In accordance with these assumptions, this study tries to explain how consumer values can influence food-related behaviours.

However, although this study follows the basic assumptions of positivism, the philosophy of science that drives the study's research process is rather *critical rationalism* than logical positivism. The principles of critical rationalism do not reject the philosophical assumptions and scientific methods used by positivists, but certain theoretical ideas are criticized. Positivists rely on induction in knowledge creation: science starts with observations, and a theory can be verified by the accumulation of further observations. According to the philosophy of critical rationalism, reverse approach is stressed. Science begins with problems rather than observations. A theoretical framework is first constructed by critically determining the theoretical underpinnings that possess the highest level of explanatory force and predictive power. Next, the logical consequences of the theory (hypotheses) are exposed to rigorous empirical tests in order to explain facts or to solve problems. Thus, the theory will be deductively tested, and the hypotheses will be falsified or corroborated, but never verified to be conclusively true or false. (Ormerod 2009; Thornton 2009; Yogesh 1994.) So, based on these statements of critical rationalism, the constructed theoretical framework and generated hypotheses of this study guide the research activities.

3.2 Research strategy

In line with the philosophy of critical rationalism and positivistic assumptions, experimental procedures are applied in this study. Experimental research tries to control and examine the phenomenon that is under investigation, as accurately as possible. An experimental study design ought to be formulated in such a way that the dependent variables are influenced only by the desired independent variables. When other variables than the independent variables are controlled, it is possible to conclude how an independent variable causes variation in the dependent variables. In experimental research, which is usually conducted in laboratory-like conditions, it is possible to make causal inferences about the relationship between reasons and consequences as regards to the phenomenon in focus. (Nummenmaa 2004.)

This study relies on experimental research for the following reasons. First, sensory perception is one of the study's key constructs. How to understand consumers' liking of foods, if they do not taste them? To gain knowledge about consumers' taste experiences, setting up an experiment is a reasonable way to do it, because it allows the researcher to arrange exactly the same kind of sensory evaluation circumstances for each of the participants and to control all of the influential factors. Second, actual consumer behaviour cannot be captured accurately without observing it in experimental or quasi-experimental conditions. If food consumers' choice behaviours are of key interest to a researcher, then measuring actual behaviour gives more reliable information about the phenomenon compared to knowledge gathered, for instance, by surveys, in which information about self-assumed consumer behaviour (e.g. willingness to buy, expected food quality) is produced. Third, in an experiment, it is possible to gather very diverse information simultaneously. For instance, in this study knowledge regarding consumer behaviour (food choice, taste perception), consumer characteristics (e.g. values, food choice motives) and food qualities (product images, sensory attributes) was collected. And fourth, an experimental test situation allows interaction between the researcher and participants. During the experimental tasks, help and guidance of the researcher is present, and the researcher can monitor the actions and progress of the participants. That enhances the possibility of gaining reliable data of high quality.

This dissertation involves two experimental studies. Study 1, constructed by the between groups -design (see Figure 6), measures consumers' food-related sensory perception, product attitudes and purchase intention (respectively) after value activation. Since value activation is a focal independent variable of this research, a useful way to investigate its effects on the dependent variables is to form con-

sumer groups where the value activation is conducted differently. To find out effects on both the product and value levels, four consumer groups were assembled according to the product type (one food and one drink) and the value (safety vs. health).

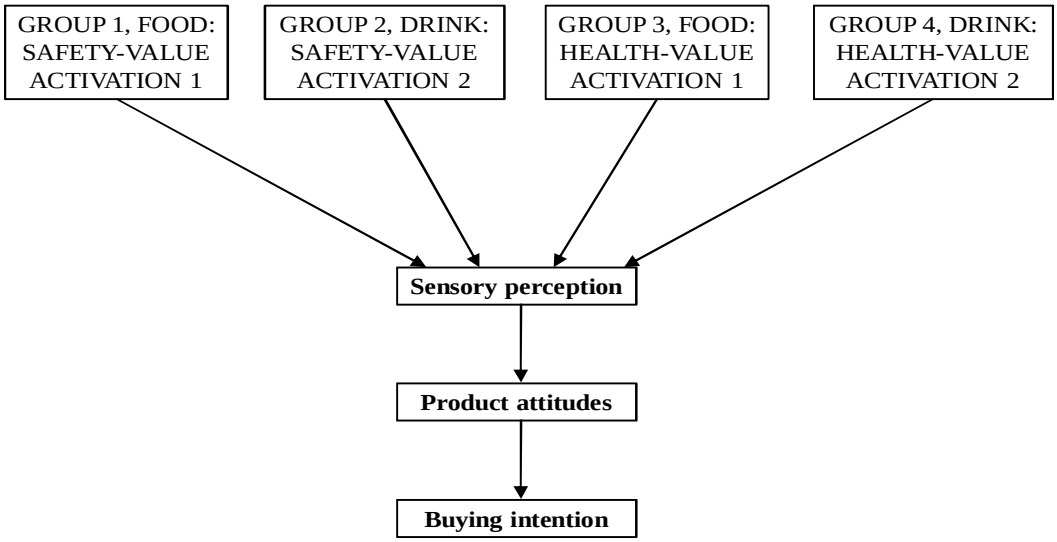

Figure 6. The experimental design of Study 1.

Spelt porridge and sea buckthorn juice were selected as the food products to be used in the experiment, because they represent raw material-based healthy food products that are also less well-known. The idea of using safety and health as food values in the value activation came from a qualitative pilot study suggesting that Finnish consumers related these values strongly to locally grown and produced natural foods such as spelt and sea buckthorn (Lehtola and Luomala, 2005). In addition, health and safety values are central to Finnish consumers. In his research, in which the data was gathered using Schwartz's value survey, Puohiniemi (2002) found that years 1995, 1999 and 2001 the most important personal value on average was 'family security' (safety for loved ones) and the second most important one was 'healthy' (not being sick physically or mentally). Thus, these values seem to be strongly related to both consumers and these target products in Finland. Last, the value activation raises also an intriguing question. Does the activation of the values (safety vs. health) still cause differences in consumers' experiences of spelt and sea buckthorn products, although these values are closely related to each other and thus, they are not conflicting (see Schwartz 1992)? De-

pending on product associations that are influenced by value activation, a FPE can vary between consumers (see chapter 2.1.5).

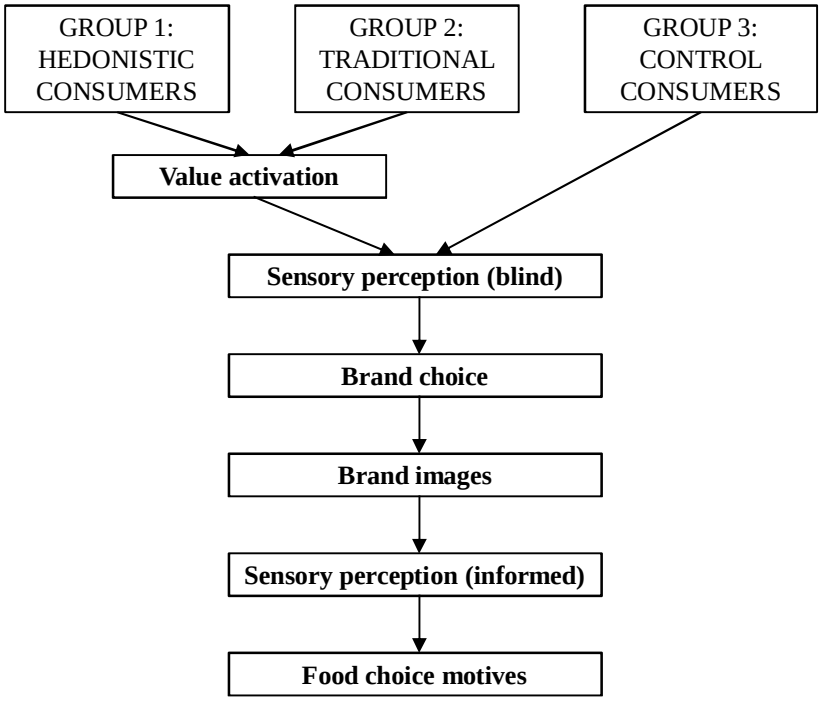

Figure 7. The experimental design of Study 2.

The second study, employing the mixed within and between group -design (see Figure 7), measures sensory perception, choices, images and motives related to food products among consumers with pre-determined central values (hedonism vs. traditionalism) and among consumers whose value centrality is neither controlled nor activated. The within study design enables consumers' sensory perception to be investigated in each of the experimental groups by comparing the blind and informed (brand-cued) food liking evaluations. To clarify the contents and phases that comply with the study designs, the data collection and experimental procedures of both of the studies are revealed next.

3.3 Data collection

Two independent consumer samples were collected for investigating the relationship between consumer values and food product experiences. Table 9 presents the background information about the conducted consumer studies. The first study (data 1) deals with the data that has been analysed in the third paper of the dissertation (Article 3). The data was gathered as a part of a research project, in which the parties were the University of Vaasa, EPANET (a cooperation network of Finnish universities in South Ostrobothnia), Seinäjoki Polytechnic and local enterprises from the food industry. The second study (data 2) produced the three other papers of the dissertation (Articles 1, 2 and 4). The data was collected during an interdisciplinary research project, in which the parties were the University of Vaasa (consumer research), the University of Turku (sensory research), four food companies, two non-profit funder organisations and a consultant company (see Paasovaara et al. 2007).

Table 9. Data collection details.

	STUDY 1	STUDY 2
TIME	summer 2003	autumn 2005, spring 2006
PLACE	Northern Ostrobothnia, Finland	Helsinki, Finland
SAMPLE SIZE	129	419
EXAMINED VALUES	health & safety	hedonism & tradition
PRODUCTS	Spelt porridge Sea buckthorn juice	Four well-being drinks Four drinkable yogurts Four cold cuts Three rye breads

3.3.1 Study 1 procedure

A total of 129 female consumers participated in a taste experiment that consisted of three phases. The consumers were divided into four experimental groups: the first was exposed to a safety-stressing spelt porridge claim, the second to a safety-stressing sea buckthorn juice claim, the third to a health-stressing porridge claim and the fourth to a health-stressing juice claim. In the first phase, the study participants' values were activated by textual safety- and health-related claims and pictures of spelt porridge and sea buckthorn juice. In the second phase, they evaluated the sensory characteristics of either spelt porridge or sea buckthorn juice (four

items) using a nine-point Likert scale. In the third phase, they indicated their attitudes toward the product (four items) and purchase intention (2 items) on a five-point agree-disagree scale. They also responded to the demographic background questions. In addition, they answered the statements of the Need for Cognition Scale (Cacioppo and Petty, 1982) that measures consumers' ability and willingness to process information. More extensive methodological details can be found in the original Article 3.

3.3.2 Study 2 procedure

More attention is paid to the details of the data collection in Study 2, because the amount of variables and phases is relatively large. To start with, before carrying out the experiment, a consumer register was created. Participants were recruited mainly from companies and educational institutes using posters with the slogan "Searching for tasters". Interested consumers filled in a background questionnaire (e.g. contact information, age, gender, education, responsibility for household's food purchases and consumption frequencies of several food products) and the shorter version of the Schwartz Value Survey (Schwartz 1994) on an Internet page that was established for the study. From the pool of circa 1100 registered consumers, 419 were accepted (on the basis of their value orientations and regular consumption of yogurt, rye bread, well-being drink and/or cold cut products) and invited to the taste tests, in which they evaluated either paired samples of bread+drink, cut+drink, cut+yogurt or bread+yogurt.

Consumers participated in the experiment in three independent groups: the hedonistic, the traditional and the control group. Table 10 illustrates the most important background statistics of the participants. Hedonistic and traditional consumers were recruited to the taste tests for two reasons. First, Schwartz (1992; 1994) has confirmed in his studies that these consumers have opposite value structures in their lives. Therefore, differences can be expected also in their food-related behaviour. Second, less academic attention has been paid to this value contrast in food consumption research. The function of the control group was to serve as a comparison group; neither hedonistic nor traditional values were of specific importance to them, and neither were their value centrality controlled nor values activated.

Table 10. Background information of the Study 2 participants.

	Hedonists (n=113)	Traditionalists (n=102)	Control group (n=204)
Gender: women	79 %	81 %	83 %
Age: under 35 years	70 %	23 %	61 %
Value scores (mean)*			
Pleasure	6.12	4.53	
Enjoying life	6.72	5.80	
Moderate	3.84	5.06	
Respect for tradition	3.81	5.98	

* All value scores significantly ($p<.001$) different between hedonists and traditionalists.

The experimental procedure was conducted in five phases. In the first phase, the participants' central values were activated by presenting them pre-tested messages stressing either hedonism or traditionalism (details about the value activation are described in the Articles 1, 2 and 4). The control group participants were not exposed to value activation efforts. In the second phase (or the first phase for the control group), the liking of three rye bread (Article 2) and two yogurt (Article 4) samples was measured in a blind evaluation task using the LAM-scale range of greatest imaginable liking/disliking (Cardello and Schutz, 2004). In addition, a descriptive sensory analysis (Lawless & Heymann 1998) for the rye bread samples was accomplished by 11 external assessors. The goal of the analysis was to reveal the sensory properties of the breads and, as a result, to find the quality attributes which could explain bread liking among the hedonistic and traditional consumers.

In the third phase, a simulated grocery shopping task was performed. Participants were requested to select their first-to-last choices of the food products that were laid on a table in their genuine retail packages. Next, 14 food product images (the items were adapted from Schwartz's values) were measured by the nine-point semantic differentials. The results pertaining to these food choice and image measurements are only reported in the Article 1. In the fourth phase (Article 4), participants re-evaluated the pleasantness of the yogurts, but the samples were now identified by their brands and other package information. In the last phase, participants responded to the claims regarding their food choice motives. They completed the Food Choice Questionnaire (Steptoe et al. 1995) that consists of 36 items divided into the nine factors. The FCQ is a survey instrument that has widely been utilised in global food research (e.g. Ares & Gambaro 2007; Prescott et al. 2002; Lindeman & Väänänen 2000). The participants also rated their concern

regarding nine food and health-related issues (Kähkönen et al. 1996). The purpose of using these two instruments was to gain a deeper understanding about the link between consumer value orientations and food choice motives.

3.4 Data analysis

Statistical methods were used to analyse the quantitative data. The data analyses were performed using the software program SPSS (versions 15.0 and 16.0). In the Study 1 (Article 3), the aim of the analysis was to compare the mean scores of sensory evaluation, product attitudes and purchase intention (=dependent variables) between the two spelt porridge groups and between the two sea buckthorn groups. The independent, grouping variable was the presented product claim (health vs. safety). The dependent variables were measured by the interval scales (Likert scales) and the group sizes were over 30 consumers, so the independent samples t-test was accepted for the analytical method (see e.g. Metsämuuronen 2003: 324). Before conducting the t-test, the internal consistencies for dependent variables (5, 4 and 2 items, respectively) were calculated. It was revealed that the reliabilities (Cronbach's alphas) were over 0.7 in each case indicating that the application of the aggregate means of the dependent variable items was justifiable for running the t-test.

The analysis of the second data included both the univariate and multivariate tests. Article 1 dealt with the rank-ordered food choices and their relation to consumers' value orientations. The food choices that were measured by an ordinal scale were analysed with the Mann-Whitney U-test. This test scrutinises "the difference in ranking given by two groups…all scores for both groups are combined and an overall ranking is calculated…the mean rank for each group is next calculated and both mean ranks are compared" (Janssens et al. 2008). Also the product images were measured; independent samples t-test was used for revealing differences between the hedonistic and traditional participants' images.

In the analysis of relationships between rye bread liking, value orientations and food choice motives (Article 2), several methods were applied. One-way analysis of variance with the appropriate post hoc tests was used to examine the differences between 1) sensory attributes of the three rye bread samples, 2) rye bread liking of the three consumer groups (hedonists, traditionalists, controls), and 3) food choice motives of the three consumer groups. A partial least square regression analysis, which is a typical tool used in the sensory evaluation research when there is a need to predict relations between a set of dependent variables and a large set of independent variables (Abdi 2003), was performed in order to detect

1) which sensory characteristics influenced liking of the rye bread variants in the three consumer groups, and 2) the interactions between Schwartz's ten value types, age and food choice motives. A principal component analysis was conducted to confirm that the value domain structure of the participants is in accordance with Schwartz's value theory (e.g. hedonism and tradition are opposite value types). Furthermore, a factor analysis was applied to condense the individual food choice motive items into the factors, as was done in the development of the Food Choice Questionnaire (Steptoe et al. 1995).

Article 4 dealt with the sensory evaluation of two yogurt brands. The paired samples t-tests were used to analyse how the blind evaluation ratings differ from the ratings of brand-cued evaluation among the traditional and hedonistic consumers. The independent samples t-test was performed to determine and discriminate the brand images participants associated with the two yogurt brands.

3.5 Validity and reliability of the research

Any research needs to be tested for validity and reliability. Validity concerns whether the research measured what it intended (Metsämuuronen 2003). Typically, a distinction between external and internal validities is made. External validity refers to whether the results can be generalized or not. In this study, this might be a weakness, since women, young consumers and urban people were overrepresented. However, the study was not designed to produce generalizable results, but rather to test theoretical ideas (i.e. value effects on food consumption).

The internal validity of this study can be examined by providing arguments for relevance of the used theoretical concepts, experimental design and measurements (Metsämuuronen 2003). The next five procedures have improved the internal validity. First, content validity examines whether the concepts of the research are in line with the existing theories by analysing the relation between the dependent and independent variables (Metsämuuronen 2003). In this study, the content validity can be regarded as good, since concepts and their relations were drawn from existing theories (e.g. the Schwartz's value theory, the theory of planned behavior). Secondly, most of the utilized measurements were already validated instruments (e.g. the Schwartz's value survey, the Food Choice Questionnaire, the Concern scale) or adapted from them (e.g. product image items based on Schwartz's values).

Third, pilot studies were conducted in order to decrease errors in the performed main studies. Before setting up the experiment in Study 1, it was confirmed that

the values safety and health are both personally relevant among Finnish consumers and related to the evaluated food products. In Study 2, the value activation was performed by specific messages. Their content and function were pre-tested (the best picture-statement -combinations were selected for manipulation).

Fourth, the experiments were performed under the control of the researchers. Instructions were given, questions were answered and responses were supervised. Every participant in an experimental group had equal circumstances. Fifth, especially in Study 2, participants were highly motivated (they first registered, then arrived at the test place at a given time, and finally received an incentive for their efforts), and that enhanced their concentration on responding and on giving true and accurate personal opinions.

Reliability refers to the stability over repeated measurements. Reliability can be measured in three ways. First, alternative forms reliability relates to the similarity of results measured at the same time with alternative measuring instruments. Second, test-retest reliability refers to how similar the results are if the research is repeated at another time using the same measuring instrument. Third, internal consistency reliability reveals the suitability of individual measures (e.g. items) to form one single composite measure (at the same time with the same measuring instrument). The internal consistency, that is typically measured by Cronbach's α, is based on the correlations between the two halves of a test. (Metsämuuronen 2003) In this study, reliability was measured by internal consistency. Cronbach's α:s were calculated for the items measuring sensory evaluation, product attitudes, buying intention (see Article 3) and food choice motives (see Article 2). The reliabilities were good, as they all were above 0.70.

4 SUMMARY OF THE ARTICLES

In this chapter, the four articles of the dissertation are shortly presented. Their purposes, theoretical background and main findings are introduced. In addition, the novel theoretical and empirical ideas arising from each of the articles are highlighted. The general as well as the article-based contributions of the research are already presented in the Introduction, chapter 1.2. The theoretical and managerial implications of each of the articles are discussed in the last chapter. More specific information about the results can be found in the original articles.

4.1 Article 1: direct influence mechanism

The purpose of this study is to investigate how consumers' activated central values guide their actual food choice behaviours. Past research has shown that the differences in food choice behaviours can depend on consumer values. For instance, consumers' endorsement of universalistic values (e.g. protecting the nature) has been found to relate to both positive attitudes toward organically grown food and food choices that favour organic foods and disfavour meat consumption. On the contrary, consumers' endorsement of power values (e.g. wealth, authority) has been found to correlated with more negative attitudes toward organically grown food and with food choices that do not favour organic foods but do favour meat consumption. However, personally relevant values do not automatically guide consumer behaviour. According to the value activation theory, values that are central to the consumer need to be activated in order to result in a value-congruent behaviour.

Based on the theoretical discussions regarding consumer values, value activation and food consumption, it is plausible to assume that consumers with distinct value orientations differ in their food product attitudes and food choices. Thus, it is expected that after value activation, those consumers who embrace traditional values should favour (both in terms of choices and attitudes) food products and brands with a traditional image over food products with a hedonistic image. Similarly, those consumers to whom hedonistic values are especially important should favour (both in terms of choices and attitudes) food products and brands with a hedonistic image over food products and brands with a traditional image.

An experiment was carried out in order to reveal how food choices and food product images differ between the hedonistic and traditional consumers. After the activation of their central values, they rank ordered their choices of rye bread, cold cut, well-being drink or yogurt brand variants as well as responded to several

image claims about the products. Eight out of 15 products were selected for further examination, because four of these were clearly perceived to have a hedonistic image and four a traditional image. The results revealed that only one product out of eight was chosen differently by the hedonistic and traditional consumers (hedonistic consumers favoured a food product/brand with a hedonistic image) and that in four out of eight cases the product images that were in congruence with consumers' hedonistic and traditional values could be linked to positive product/brand attitudes.

The results indicate that the link between consumers' activated central values and actual food choices was weak, but the link between consumer values and product attitudes (images) was stronger. Thus, consumer values seem to guide choices of regularly consumed grocery products only to a marginal extent. Also, consumers' attitudes toward food products and brands, even if they and the images behind them are in accordance with their central values, seem to be fairly ineffective in predicting their actual food-related behaviour. It is concluded that demographics (age, gender) might still explain food choices better than consumer values, and that the effects of consumer values on food choices could be more easily detectable among food products with higher involvement levels. Table 11 illustrates what is believed to be new in this study relative to pre-existing food consumption research.

Table 11. Highlighting the novelty value of Article 1.

Conceptual novelty value	**Empirical novelty value**
* application of the value activation theory	Methodological choices: * focus on product choices instead of buying intentions * focus on neglected consumer values in food consumption research (hedonism vs. traditionalism) * focus on food products from the lower end of the involvement continuum Results: * even activation of consumers' central values does not translate into value-congruent food choices

4.2 Article 2: direct influence mechanism

The purpose of this study is to examine the influence of consumer values (hedonism vs. tradition) on food choice motives and rye bread liking. First of all, past research has revealed that both positive and negative correlations between consumer values and food choice motives can be found. To illustrate, consumers' motivation to choose foods using mainly the taste aspects (or sensory appeal) has been positively related to hedonism but negatively to security and tradition. This indicates that the taste motive is more important to hedonistic consumers. In addition, traditional consumers have been detected to be generally older than hedonistic consumers. Older consumers have been found to be motivated by health, natural content, familiarity and ethicality in their food choices indicating that traditional consumers might support these food choice motives more than (younger) hedonistic consumers. Thus, it is expected that general food choice motivations will be partly different between the hedonistic and traditional consumers.

Secondly, there is some evidence suggesting that hedonistic consumers differ from traditional consumers in terms of their sensory preferences concerning bread liking. Because rye bread has a reasonably tough texture, sour flavour and a healthy image, it may generally be preferred by the health-oriented traditional consumers in comparison to the more pleasure-seeking hedonistic consumers. Thus, it is hypothesized that hedonistic consumers show a lower liking for rye breads than traditional consumers.

In the taste experiment, traditional and hedonistic participants evaluated the pleasantness (appearance, odour, taste and overall) of the three rye bread samples. Prior to the sensory evaluation, the central values of the traditional and hedonistic participants were activated. Their food choice motives were also measured. The analysis of the data produced several outcomes. First, it was confirmed that hedonism and tradition were opposite value types, and that the hedonistic participants were significantly younger than the traditional participants. Second, the analysis of the liking scores for the rye bread samples revealed that in general, the traditional participants rated the liking of all three breads higher than the hedonistic participants. The bread sample which was most liked among the hedonists had a soft, porous and the least tough texture, while the traditional participants were more approving of different types of breads. Third, a number of food choice motives differed in importance between the hedonistic and traditional participants. Natural content, familiarity, health concern and ethical concern were significantly more important motives to the traditional participants, whereas price and mood were significantly more important motives to the hedonistic participants. Sensory

appeal, convenience and weight control were equally important food choice motives to both of the groups.

In conclusion, the existence of the links between consumer values, motives and food liking were found. The findings indicate that traditional consumers seem to like rye bread products, which can be perceived as healthy and quite natural, more than hedonistic consumers. This is not surprising since according to the study results, traditional consumers' food selection is influenced by the motives of health, natural content and familiarity. Interestingly, sensory appeal was a food choice motive that was equally important for the value groups but less important for the control group. The food-related value activation may have inspired the traditional and hedonistic participants to rate their food choice motives as more sensory-mindedly. Table 12 summarizes the novelty aspects relevant to this study.

Table 12. Highlighting the novelty value of Article 2.

Conceptual novelty value	**Empirical novelty value**
* application of the value activation theory * linking consumer values to sensory qualities of foods	Methodological choices: * focus on neglected consumer values (hedonism vs. traditionalism) * focus on food products from the lower end of the involvement continuum Results: * differences in consumer values are related to differences in preferred sensory qualities * differences in consumer values are related to differences in personally important food choice motives

4.3 Article 3: indirect influence mechanism

The goal of this study is to analyze the effects of value-activating information on consumers' food product experience (FPE). The logic behind this relationship is based on the perceived (in)congruity between consumer values and product associations. Regarding every food product/brand, consumers attach associations to its raw material and to the food type (carrier). Each food product has a unique configuration of primary and secondary associations that are linked to how consumers perceive it. In the case of spelt porridge, the less known spelt-grain (raw material) is argued to serve as the secondary associative component and the porridge

(carrier that has typically a healthy image in Finland) as the primary associative component. In the case of sea buckthorn juice, the primary associative component is the sea buckthorn berry (raw material). It is more commonly known to Finnish consumers and it is postulated to signal safety to consumers because of its associations with domestic and natural origin. The secondary associative component is the juice (carrier). Juices are no longer necessarily and uniformly associated with good health effects, which leaves even more room to the safety-association of the sea buckthorn to predominate.

It can be argued that the messages activating safety and health -values are effective in influencing consumers' FPE for spelt porridge and sea buckthorn juice if they are congruent with the primary associative component of the carrier – raw material combination. Thus, two expectations are formed for this study: First, it is expected that in the case of spelt porridge, a message stressing its healthiness (and more generally the health-value) will be more effective in boosting the FPE than a message stressing safety. Second, it is expected that in the case of sea buckthorn juice, a message stressing its safety (the safety-value) will be more effective in boosting the FPE than a message stressing healthiness.

As consumers are exposed to food-related communication, differences may emerge in how they respond to and behave after that information because of the differences in their personality traits. One prominent instrument for measuring individual differences in the ability to process information has been the need for cognition (NFC), which refers to an individual's tendency to engage in and enjoy effortful cognitive endeavours. There is some evidence that consumers high in need for cognition (HNC) more easily adopt innovative products and they may like stronger (e.g. sour) tastes than consumers low in need for cognition (LNC). Since spelt porridge represents a food novelty (innovativeness) and sea buckthorn juice possesses a strong bitter taste, these products are likely to be favoured by the HNC-consumers. Thus, it is expected that the FPE for the spelt porridge and sea buckthorn juice is more positive among HNC-consumers than among LNC-consumers.

In a taste experiment, consumers' product experiences (sensory evaluation, product attitudes and purchase intention) of spelt porridge and sea buckthorn juice were measured after exposing them to the tailored product information that stressed either healthiness or safety of these products. It was found that the health-related product information, in comparison to the safety information, had a more positive impact on participants' attitudes toward and intention to purchase spelt porridge. The sensory perception of spelt porridge was rated as slightly more pleasant among participants exposed to the health information. Conversely, the

safety-related product information, in comparison to the health information, had a more positive impact on the sensory perception of sea buckthorn juice. When comparing the sea buckthorn attitude and purchase intention scores between the participants exposed to either the health or safety information, no differences were found. In terms of need for cognition, the sensory experience of spelt porridge was rated marginally higher by the consumers high in need for cognition. In addition, the product attitude and purchase intention of sea buckthorn juice were more positive among the consumers high in need for cognition than among the consumers low in need for cognition.

The results indicate that, in the minds of Finnish consumers, the health value is more closely associated with spelt porridge than with sea buckthorn juice and the safety value more closely with sea buckthorn juice than with spelt porridge. These findings probably stem from product associations. The effectiveness of the health information in boosting spelt porridge liking may be based on the fact that porridge is a food type (carrier) consumers associate with the property of healthiness (e.g. fibre-richness). In turn, safety information enhanced sensory perception of sea buckthorn juice, likely because it generated positive taste expectations through the associations regarding the organic food production and domestic origin (e.g. purity, naturalness). In terms of the need for cognition, HNC-consumers seem to experience unfamiliar or novel food products more positively than LNC-consumers. Thus, curiosity and motivation to experience things may be stronger among the HNC-participants. Compared with pre-existing food consumption research, Table 13 shows new conceptual ideas and empirical findings of this study.

Table 13. Highlighting the novelty value of Article 3.

Conceptual novelty value	**Empirical novelty value**
* application of the food product − association structure theory * application of the consumer value − product association (in)congruity theory * linking NFC to sensory evaluation	Methodological choices: * focus on niche food products with high innovation and marketing potential Results: * due to differences in food product-specific association structures, messages stressing certain value may differentially influence consumers' experiences with that food * need for cognition may be related to consumers' sensory perception

4.4 Article 4: indirect influence mechanism

The goal of this study is to integrate the ´brand familiarity´- and ´consumer value – brand symbolism (in)congruity´-accounts into one single conceptual framework and to empirically evaluate their relative roles in explaining consumers' brand-induced taste perception. On the one hand, there is direct evidence supporting the role of food brand familiarity (see chapter 2.2.1) in influencing consumers' product attitudes, purchase intentions and sensory perception. On the other hand, the consumer value – brand symbolism (in)congruity theory argues that culture attaches symbolic meanings (e.g. human values, norms, social categories) to food and beverage brands and that the fit between these symbolic meanings and consumers' own personal values determines how positively or negatively a taste or aroma is evaluated.

Drawing together the theoretical discussion concerning the brand familiarity and the value –brand symbolism (in)congruency explanations for consumers' brand-induced taste perception, three research hypotheses are presented for empirical testing. First, it is expected that familiar food brands will enhance consumers' taste perception in the blind vs. brand-cued evaluation because of the brand familiarity effect. Second, it is also expected that if consumers' values are congruent with the symbolism that is related to a familiar food brand, then the taste perception will be enhanced in the blind vs. brand-cued evaluation because both the brand familiarity and consumer value – brand symbolism congruity effects work toward the same direction. Third, it is hypothesised that if consumers' values are incongruent with the symbolism that is related to a familiar food brand, then the taste perception will remain unchanged in the blind vs. brand-cued evaluation because the favourable brand familiarity effect is cancelled out by the unfavourable incongruity effect.

Two experiments involving taste trials (blind vs. brand-cued sensory evaluation) were conducted. The first experiment analysed the brand familiarity effect while the second experiment addressed also the taste perception of yogurts with differing brand symbolism amongst food consumers with distinct value orientations to find support for the (in)congruity effects. The first experiment offered partial empirical support for the brand familiarity explanation in consumers' food taste perception. The second experiment revealed that the congruency between values and familiar yogurt brand symbolism boosted the taste experience. More specifically, when the traditional participants confronted and evaluated the familiar brand with a traditional image and when the hedonistic participants confronted and evaluated the familiar brand with a hedonistic image, their liking of the yogurt was enhanced. Second, in terms of the incongruity effect, it was shown that the taste

perception remained unchanged. More specifically, when the traditional participants tasted the hedonistic brand and when the hedonistic participants tasted the traditional brand, their liking of the evaluated yogurt was unaffected, because the positive brand familiarity effect was neutralised by the negative incongruity effect. Third, it was revealed that in comparison to the results from the brand familiarity only condition (the first experiment), the taste perception was just slightly more positive in the congruency + brand familiarity condition and clearly more negative in the incongruence + brand familiarity condition.

The results imply that consumer value – brand symbolism congruity is not responsible for enhancing consumers' taste perception beyond the level that is produced by the brand familiarity. Thus, in the case of well-known food brands, brand familiarity seems to explain consumers' brand-induced taste perception better than congruity. In contrast, the negative incongruity effect appears capable of neutralising the positive brand familiarity effect, so incongruity can be as powerful explanation as brand familiarity for consumers' brand-induced taste experiences. Table 14 demonstrates what is believed to be new in this study relative to pre-existing food consumption research.

Table 14. Highlighting the novelty value of Article 4.

Conceptual novelty value	**Empirical novelty value**
* comparison of brand familiarity and consumer value − brand symbolism (in)congruity mechanisms as modifiers of sensory perception * development of an integrative framework	Methodological choices: * incorporation of real yogurt brands with contrasting symbolism * focus on food products from the lower end of the involvement continuum Results: * consumer value − brand symbolism congruity does not enhance consumers' taste perception beyond the level that is produced by brand familiarity * consumer value − brand symbolism incongruity is capable to neutralise the brand familiarity effect

5 DISCUSSION AND CONCLUSIONS

The previous chapters have both conceptually and empirically examined how consumer values influence their food product experiences. The conducted studies produced several theoretical and managerial implications that are discussed next. Also study limitations and future research suggestions will be presented.

5.1 Theoretical implications

Frewer and van Trijp (2007) have concluded that one of the research challenges is to understand the contexts and underlying mechanisms that explain when liking (hedonic experience) and wanting (motivational aspects of food choice) associate and disassociate. The current study seized this theme using an interdisciplinary approach, as both liking and wanting aspects were considered in the investigation that focused on the relationship between consumer values and food products experiences (including sensory perception). Conclusions about this complex relationship will be presented through the following themes. The first analyzes the link between consumer values and food choices. The second evaluates the effect of consumer values on sensory perception. The third examines the relationship between consumer values and other predictors of behaviour (i.e. food choice motives, product attitudes and buying intentions). The fourth compares consumer values with demographics as determinants of food product experiences. Last, the fifth theme summarizes the ambiguous role of values in consumers' food product experience.

The link between consumer values and food choices

According to the first hypothesis of the study, it was expected that consumers will favour food products that are in accordance with their central values. The results showed that actual food choices were guided by consumer values only to a marginal extent. There are at least four reasons that support the existence of this weak link. First, the opposite value types that were chosen in the investigation were hedonism and traditionalism. Another value juxtaposition could have produced stronger choice results within the selected food categories. For instance, food choices have been detected to be clearly different between the universalistic and power-oriented consumers (de Boer et al. 2007; Kihlberg & Risvik 2007). It is possible that in the domain of food consumption, the values related to the self-trancendence vs. self-enhancement -dimension (see Schwartz 1992) are stronger drivers of consumers' food choices on average than the values related to the openness to change versus conservation -dimension.

Second, the product involvement that refers to a consumer's level of interest in a particular product (Solomon 2007) may have affected the results. The only product choice difference found between the hedonistic and traditional consumers was in the case of one well-being drink. Of the studied food product categories, well-being drinks with designed product brands, tailored claims and engineered tastes were closest to the differentiated specialty products that usually are featured by a higher level of involvement. Purchasing conventional foods may often be an activity that requires only little effort and commitment in a shopping context, and maybe the choice alternatives are too similar to each other, having only a functional meaning in the eyes of a consumer. That is why personally supported values may neither be activated nor guiding the decision making.

Third, this study tried to find evidence for ultimate reasons behind actual food choices by investigating the guiding power of human values. It seems that in the domain of food, better predictors of actual food consumption behaviours are food values (also known as food choice motives). That is why several authors have studied food values, instead of human values, as predictors for food choices in general. For instance, Lusk (2011) found that certain food values were significantly related to actual organic food purchases; concerns about the environment and tradition exhibited higher demand for organic milk and eggs, while concerns about the price and convenience exhibited lower demand for such foods. Eertmans et al. (2005) showed that the sensory appeal -motive was a positive predictor of spices intake, while the health-motive predicted milk consumption. However, it remains a challenging task to effectively predict actual food choices, also by food values. Kyutoku et al. (in press) have recently reported that there were large discrepancies between food choice motives (desired- and ought-to-be-eaten) and actually consumed foods among Japanese consumers.

Fourth, conscious mental mechanisms were used to activate consumers' central values in a food choice situation. The food choices could have been partly different, if we had used unconscious value activation as Verplanken and Holland (2002) mostly did in their experiments. There exist some evidence that consumers' unconscious implicit preferences may have an impact on their behavior. For example, Friese, Wänke, and Plessner (2006) demonstrated that especially under time pressure consumers' unconscious implicit preferences influenced their food choices. The results of this study speak for the effectiveness of unconscious value activation, if it is accepted that unconscious implicit preferences are similar to unactivated central values and that a classification task resembles an unconscious value activation process.

The effect of consumer values on sensory perception

First of all, it was expected (H2) that there will be variation in food liking among consumers embracing different and opposing central values. When the liking of rye bread products was examined, the hypothesis gained support. It was found that rye bread was more liked among the traditional than among the hedonistic consumers. The hedonistic consumers preferred rye bread, which had the most porous, softest and the least tough texture. This result is in accordance with the previous result that a hedonistic consumer finds a softer bread more pleasant (Kihlberg & Risvik 2007). This indicates that certain sensory qualities of a food product can be perceived differently by consumers with different value orientations.

Secondly, it was expected (H3) that food product-related communication activating different consumer values is effective in influencing sensory perception of that food product if it is congruent with the primary associative component of the carrier – raw material combination. Consumers' experience of sea buckthorn juice supported the hypothesis. Their sensory perception of juice was enhanced when a message stressing product safety (purity and naturalness) was communicated to them. Positive raw material associations regarding the sea buckthorn berry may have improved their sensory experience, in comparison to the impact of the health-stressing information. This presumption is in line with the study of Roininen et al. (2006), in which an organically produced meat product was associated with purity and good taste. This is further supported by the study of Caporale and Monteleone (2004), who found that the information about the organic production methods had a positive influence on the liking for beer. In addition, providing consumers with health information may not help to increase the sensory liking of a juice product (Sabbe et al. 2009). Consumers may even have such a strong implicit belief that the food with a healthy image cannot taste really good (Raghunathan et al. 2006).

Thirdly, it was also expected (H4) that when consumers' activated central values are congruent (incongruent) with the food brand symbolism, it has positive (negative) effects on taste perception. The results of the yogurt study supported this hypothesis, but it was also revealed that the outcome was moderated by the brand familiarity effect. The brand familiarity effect refers to sensory experience in which the quality of a food product is more positively evaluated under exposure to information on well-known brand than when a consumer evaluates the same food sample blind without any product and brand information (cf. Fornerino & d'Hauteville 2010). Consequently, the results suggest that in the case of well-known food brands, brand familiarity explains consumers' brand-induced taste

perception better than consumer value - brand symbolism congruity, but the incongruity, in turn, can be as powerful explanation as brand familiarity. The incongruity effect appears to be capable of neutralising the brand familiarity effect. This means that these two explanations may operate independently and that in the case of well-known food brands incongruity may cause inflated taste experiences for consumers whose values are not in concord with their brand symbolism. The incongruity may be an effective influencer of consumers' food taste perception, because consumers have encountered symbolic information that is in opposition with the key values they embrace (Allen et al. 2008). This might have put them in a negative mood triggering heightened self-focus and more analytical and substantive processing of upcoming stimuli (Luomala and Laaksonen 2000) and that would account for the deteriorated taste perception.

Connecting consumer values with food choice motives, product attitudes and buying intentions

It was expected (H2) that there will be variation in general food choice motivations among consumers embracing different and opposing central values. As reported in Article 2, a number of food choice motives differed in importance between the hedonistic and traditional participants. Natural content, familiarity, health concern and ethical concern were significantly more important motives to the traditional participants, whereas price and mood were significantly more important motives to the hedonistic participants. This indicates that personally important consumer values influence food choice motives, confirming the idea that consumer values are antecedents of domain-spesific motives (Vinson et al. 1977). The food motivation differences between traditional and hedonistic consumers suggest that these two consumer groups may select several foods according to different criteria.

Also the link from values to attitudes and intentions was found. It was expected (H3) that food product-related communication activating different consumer values is effective in influencing attitudes toward and buying intention of these food products if it is congruent with the primary associative component of the carrier – raw material combination. The participants' attitude toward and purchase intention of spelt porridge were positively influenced by a message that stressed the product's healthiness, because of the carrier associations. Consumption of wholegrain or fibre-rich products (e.g. porridge) may be so strongly associated with a healthy and balanced diet among Finnish consumers (Arvola et al. 2007) that claims highlighting product safety are less effective in forming positive expectations toward spelt porridge, although both health and safety values are important guiding principles in their lives on average (Puohiniemi 2002). In general, the

health claims emphasizing fiber richness (in applicable carriers) are shown to improve acceptance of food products. In a study by Verbeke et al. (2009), consumers who were exposed to product-related nutrition and health claims preferred the fiber-enriched cereals to the calcium-enriched fruit juice and omega-3 enriched spread.

Consumer values versus demographics as determinants of food product experiences

The role of demographic factors as an explanation for study participants' food product choices was also analysed. Especially gender and age were factors that could relate to the differences in food choices. Five statistically significant effects of age and two effects of gender on the food product choices were found (see Article 1). For example, certain rye bread product/brand was clearly favored by the older study participants, while another rye bread product/brand by the younger participants. It was also found that the traditional consumers were older and more concerned about their food consumption and health than the younger hedonists (see Article 2). This finding is in line with the study by Bower et al. (2003) reporting that older consumers are more health concerned. These observations imply that in terms of certain food product categories, demographics might still be a more powerful predictor for food choices than psychographics (e.g. values, personality traits) in spite of the current claim that they "are becoming less practical in the analysis and prediction of consumer behavior" (Buckley, Cowan, and McCarthy 2007).

However, psychographics might be better predictors of specialty food consumption behaviours. Bartels and Reinders (2010) found that demographics were less important predictors of organic food buying behaviour. This finding is supported by several studies (e.g. Fotopoulos et al. 2011; Kihlsberg & Risvik 2007; Krystallis et al. 2008), in which universalistic values were concluded to have a positive impact on organic food consumption. In addition, the results reported in Article 3 revealed that consumers' sensory perception of spelt porridge, and their attitude toward and purchase intention of sea buckthorn juice correlated positively with the personality trait of need for cognition. So, it is possible that the hedonistic and traditional values would have guided consumers' FPEs much more evidently, if the food products selected for the empirical evaluations had been highly hedonistic or traditional from the consumer perspective.

The ambiguous role of values in consumers' food product experience

In conclusion, personal values seem to guide consumers' food product experiences more indirectly than directly. This means that it may be hard to bring about

value-congruent actions without paying attention to other influential factors. For instance, food domain-specific values (food choice motives, purchase criteria) can predict food-related behaviours better. However, the positive link between consumer values and food product experiences becomes more evident under certain conditions. First, consumer's central values need to be activated by value-congruent stimulus (e.g. product claims, contextual ambience). Second, the product/brand needs to carry some important meanings for a consumer. The food products related to higher involvement levels (quality foods, specialties etc.) meet this criterion better than the foods from the lower end of the involvement continuum (e.g. routine-based daily purchases of conventional low-priced foods). Third, consumer's values need to be in accordance with the product/brand symbolism. Otherwise, the positive good-will that is loaded into the brand will not capitalize as consumers' positive food product experiences. Last, among specific food product categories, it seems possible that sensory preferences can vary between consumers with distinct value orientations. This implies that the liking of a product's physical and chemical properties may, in some cases, be influenced by consumer values.

5.2 Managerial implications

An important general implication for the food industry is the realization of the potential of using value-specific consumer groups throughout product development and marketing planning process. According to the results of this study, traditional consumers differed from hedonistic consumers in their concern about food and health and in the importance of food choice motives ''familiarity'', ''natural content'' and ''ethical concern''. This is useful knowledge for marketing communication designers, as it helps, for instance, in tailoring healthy foods advertising for the traditional consumers by using more cognitive claims (e.g. relating food to health, disease prevention, naturalness and familiarity). As another example, in order to increase the consumption of healthy brown bread among pleasure-seeking hedonistic consumers, a soft sensory texture together with mood- and price-directed product claims need to be emphasized. Further, packaging and branding decisions can benefit from the tests with consumer groups embracing different values, since hedonistic and traditional consumers have been found to prefer package shapes (square vs. tube-like), colours (red vs. yellow) and even product- and marketing concepts (tomato and reindeer products) differently (Kupiainen et al. 2008). As a result, this study encourages the food companies to explore various connections between consumer-related factors (e.g. values, food choice motives, food-related attitudes, demographic variables), and intrinsic and extrinsic properties of food products.

As regards to advertising using food values, a few implications arise. First of all, health information stressing fibre intake still seems to be effective in persuading consumers to try novel whole-grain products, such as spelt porridge, although the health claims have been massively used in food product promotion in recent years. Secondly, providing health information in the case of novel fruit/berry juice products may not automatically increase the acceptance or consumption of such products. It is possible that (visual) information about organic production, purity and naturalness of juices are more effective promotional cues lowering consumers' perceived risks of consuming and increasing their willingness to try unfamiliar juices. Thirdly, target group-specific understanding of the associations consumers relate to carriers of new food products on the one hand and to raw materials and production methods on the other, and taking into account the individual differences in product perception, give useful input for product development and marketing.

In terms of the role of the consumer value – brand symbolism (in)congruency in food consumption, three implications can be outlined. First, even owners' of strong food brands cannot trust the ability of their brands to boost a consumer's taste experience if there is not a correspondence between his/her central values and brand symbolism. That is why food brand marketers are advised to seek understanding of the symbolism their brand carries and the value orientations of their key consumer segments. Second, also the meanings of the contexts in which certain food brands are prototypically consumed should be explored. For instance, it is possible that for the hedonistic consumers certain consumption contexts such as sensorial gratification and self-gifts are emphasised (cf. Zarantonello and Luomala 2011). If food marketers can offer brands whose symbolism is consistent with the core values of the hedonistic food consumer and the meanings of the consumption contexts that are favoured by them, then the subjectively felt taste and value of the brand can yield its maximum, because the self-consistency motive, which facilitates the consumption experience, is fulfilled (see e.g. Sirgy et al. 2000). Third, since both brand familiarity and consumer value - brand symbolism (in)congruency affect consumers' taste experience, an objectively better taste is not necessarily decisive (Allen et al. 2008). For example, Thomson (2007) believes that the food industry is too fixed in optimising the sensory quality of food products; the satisfactory level may suffice if it is coupled with imaginative and daring brand marketing that delivers unique emotional and functional benefits for well-defined food consumer target segments.

5.3 Study limitations and future research suggestions

A number of research limitations need to be taken into consideration. The limitations can be detailed separately for the two data sets utilized. The data that was analyzed first (Article 3) had three weaknesses that need to be considered when interpreting the results. First, there was no control group included in the study. Instead, a 2x2 -study design (product: spelt porridge vs. sea buckthorn juice, value-activating communication: safety vs. health message) was conducted. The use of a control group, in which consumers would not have been exposed to value-activating food information, and an analysis of participants' attitudes toward the presented messages might have helped in investigating the actual effects of messages on the evaluations (sensory perception, product attitudes and buying intention) of the participants. Second, male consumers were excluded from the study. Therefore, the results represent only the Finnish female consumers' experiences of two food products. Third, a larger sample size might have helped in producing clearer effects on the consumer evaluations, although statistically significant differences between consumers' food product experiences were still revealed, even with relatively small group sizes.

The second and larger data that was analyzed in the first, second and fourth articles had also a few shortcomings that need to be put forth. First, the results cannot be generalized to represent all of the Finnish people, since the sample population only lived in urban surroundings, both young consumers and women were over-represented, and the hedonistic consumers were younger and better educated than the traditional consumers in the sample. Second, the test environment was not a real retail environment with a multitude of influences and choice alternatives. The experiments were conducted in simple laboratory-like surroundings with a minimal number of atmospheric attractions (excluding e.g. ads, price information, odors, colors, product placement, other customers) and with a limited number of products. Third, larger consumer group sizes might have produced larger differences between hedonists and traditional consumers as regards to food choices they made.

Fourth, the sensory perception of food products was measured by the labeled affective magnitude – a scale that has two hundred points for evaluating a product’s sensory characteristics. This produces extensive standard deviations for the mean liking scores. Probably more numerable and larger food liking differences between hedonistic and traditional consumers would have appeared, if the conventional five-, seven- or nine-point Likert-scales had been used. Fifth, food products that are probably associated with low involvement levels were used. It is possible that the results would have been different, if food brands with higher involvement

levels (e.g. rare seafood, finest chocolate, luxurious cheeses, exquisite wines) had been studied. Sixth, the activation of consumers' central values was performed by pictorial and textual information on paper (consciously). The effects of activated values on consumer behaviour could have been much stronger, if environmental priming was also used (implicitly). Berger and Fitzsimons (2008) have shown that products are evaluated more favourably and chosen more frequently when the surrounding environment contains more perceptually or conceptually related cues.

Based on these limitations and our results, there is room for more food choice research that profoundly investigates the dynamic relationship between personal factors (values, personality traits such as need for cognition) and food-related behaviours. It can be suggested that further research should consider the following aspects. First, in terms of food choice environment, actual choice behaviors in real commercial surroundings could be investigated by analyzing the contents of shopping carts at cashiers, menu choices in restaurants and the influences of situational factors (e.g. different atmospherics) among consumers with different value orientations. Second, additional studies using both strong (popular, familiar) and weak (novel, unfamiliar) food brands and food products from both the low and high end of the involvement continuum as well as research that focuses on the consumer value-brand symbolism (in)congruity –effects in food consumption should be conducted.

Third, the relationship between consumer values and sensory perception (e.g. strong vs. mild flavors, blind vs. brand-cued evaluations) needs more exploration in order to enhance the understanding of the link between psychological and physiological factors in food consumption. For instance, Allen et al. (2008) found that a consumer value − brand symbol congruence in cola drink evaluations lead to enhanced taste experience. McClure et al. (2004) showed that the exposure to a cola brand had a dramatic influence on expressed behavioural preferences and on the measured neural responses. This raises an intriguing question: could consumer values, in tandem with cultural symbols, also explain physiological responses that eating and tasting cause? In biopsychological personality research, Stemmler and Wacker (2010: 550) have suggested that meaningful and emotionally or motivationally important situations (for some but not all individuals) may create individual differences in the degree to which biobehavioral systems are engaged and in the magnitude of physiological responses. For future research, they also emphasize the need for inclusion of person's goals and beliefs (such as values) to approach an advanced science of the biology of personality.

Fourth, the relative roles of psychographical and demographical factors in food-related behaviour need more investigation. For instance, in which food contexts

consumer values dominate over age and gender in affecting food choices? To illustrate an effect regarding this idea, the findings of Worsley et al. (2010) revealed that demographics and personal values influenced food shopping behaviours via different pathways among Australian male and female consumers. For instance, self-direction positively affected shopping planning for men but negatively influenced price minimization for women, while among women only, age was positively related to shopping planning and negatively to prize minimization. However, they did not record actual food purchases. The raised question gives thought for upcoming research efforts that could try to advance understanding of consumer-related reasons behind the food choice. To conclude the future research suggestions, there is a great deal of unstudied areas in the domain of food consumption that link consumer values to food product experiences in real consumption contexts.

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Enticing the Effects of Consumer Values on Actual Choices of Food Products by Applying the Value Activation Theory: Chasing Ghosts?

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ABSTRACT

The role of activated values in consumers' choice of actual food products was investigated. The central values of hedonic and traditional consumers were first activated. Then, in a simulated grocery shopping task consumers selected their favorite food products in four product categories and evaluated each product's image attributes. The results revealed that even after successful value activation only one product out of eight was chosen differently by the two consumer groups. Still, attitudes towards the products differed between groups indicating that consumers' attitudes do not always translate into value-congruent behaviors.

1. INTRODUCTION

Consumer's food choice can be described as a complex process consisting of a number of influences concerning the individual and the environment (eg. Furst, Connors, Bisogni, Sobal, and Falk 1996). Demographics such as income (e.g. Bowman 2007), age and gender (e.g. Wadolowska, Babicz-Zielinska, and Czarnocinska 2008), and psychographics such as personality traits (e.g. Chen 2007), values (e.g. Kihlberg and Risvik 2007) and motivations (e.g. Honkanen, Verplanken, and Olsen 2006) are among prominent individual factors that have been shown to have impact on food consumption behaviors. Likewise, situational context and social interaction (e.g. King, Weber, Meiselman, and Lv 2004) as well as sensory attributes of food (e.g. Mustonen, Hissa, Huotilainen, Miettinen, and Tuorila 2007) and product information (e.g. Kozup, Creyer, and Burton 2003) are some of the salient environment-related factors in determining consumers' food choices.

Recently, there has been much discussion regarding the health, safety and ethical aspects of food marketing and consumption (e.g. Vandendriessche 2008; Clarke, Cloke, Barnett, and Malpass 2008). For example, despite increased health consciousness people are becoming more and more obese and physically less and less fit. Some food consumers are genuinely afraid of being hurt by nature if the genetic manipulation of food becomes more common (Luomala, Paasovaara, and Lehtola, 2006). Food scares caused by listeria, foot and mouth disease, avian influenza and animal welfare trouble many consumers' minds. Since specific values that are related to these issues have become relatively more important to several consumers, some food consumption trends have emerged. To illustrate, large supermarket chains in the UK (Sainsbury's, Tesco, and Waitrose) have announced 20% annual growth of organic food (associated with "safety") sales (Guardian 2006), and Datamonitor expects the UK market for fair-trade goods (associated with "ethics") to double in five years (2007-2012) from a value of GBP 395 million to over GBP 800 million (Food Business Review 2008).

Despite the values that are currently under timely topics in food consumption debates, consumer research still suffer from a lack of studies that examine the relationship between values and actual food-related behaviors. More specifically, past research has provided unsatisfactory and contradictory results of how values explain food choices. For instance, Finch (2005) found a positive link between economic and social values and organic food buying behavior, whereas in the study of Le Page, Cox, Russell, and Leppard (2005) values explained consumers' meat product choices only to a marginal extent. Furthermore, Köster (2003) has noticed that only 32 % of the studies that claimed to analyze the effects of attitudes and values on food choice dealt with actual choice behaviors and only eight percent showed a positive effect of an attitude (or a value) on food choice behavior. Thus, there exists only a limited number of studies that have confirmed the positive relationship between consumers' values and their actual food choice behaviors (these studies will be reviewed later).

In previous food choice research, a number of other aspects are often neglected as well. Firstly, actual food choice behavior tends to differ from intended behavior. To illustrate, the study of Rimal, McWatters, Hashim, and Fletcher (2004) revealed that only 21,7 % of the participants bought irradiated beef although 60 % of them reported their intention to buy it. Consequently, more reliable results will be gained, if choices are made in a real purchase context and not only on paper by reporting the likelihood of buying. Secondly, food choices may not reflect real purchase behavior if available alternatives are not actual products. Shiv and Fedorikhin (1999) showed that the real presentation of a chocolate cake was clearly preferred by participants to the symbolic presentation (photographs) when processing resources were limited. Thirdly, so that the effects of values on behavior could be observed, consumers' relevant values need to be "switched on" in a food choice situation. Namely, the theory of value activation suggests that values will guide behavior only when values are cognitively activated and central to the consumer (Verplanken and Holland 2002).

By taking into account the aforementioned issues pertaining to past food choice research, we wish to contribute to the debate concerning the relationship between consumer values and food choice behaviors by amending some of the shortcomings of past food choice study designs and by applying the value activation theory in the context of food choice behaviors. Thus, the focal research question of this study is: how do consumers' central values, when activated, influence actual food choices of real food products across four product categories. The following logic is pursued to answer this research question. First, a brief review of prior studies investigating the relationship between consumer values and food choices is conducted. Next, the principles of the value activation theory are introduced. Thirdly, the sample, data and methods are presented. Fourthly, the effects of activated consumer values on real food choices are empirically explored. Finally, the paper concludes by discussing the theoretical implications and limitations of the study.

2. THEORETICAL BACKGROUND

2.1. The relationship between consumer values and actual food choice behaviors

Consumer values can be defined as desirable goals and guiding principles in people's lives. More specifically, values are concepts or beliefs that guide selection or evaluation of behaviors and events, and are ordered by relative importance (Schwartz 1992). Consumer research and marketing have been interested in understanding the role of values as a driving force to explain consumer behaviors such as product purchasing. Consequently, several value theories (e.g. Kahle 1986; Reynolds and Gutman

1988) have been applied in consumer research, including the value theory of Schwartz (1992). Schwartz identified 56 universal values that formed a circumplex model of 10 motivational value types. These value types of universalism, benevolence, tradition, conformity, security, power, achievement, hedonism, stimulation and self-direction can be used in segmenting consumers. For instance, hedonism and tradition are opposite value types, and therefore people, for whom hedonic or traditional issues are of specific importance in their lives, can theoretically form two separate groups of consumers with different behavioral manifestations. In the study of Feather, Norman and Worsley (1998) this classification revealed that the choice of Christmas trip scenario, including mysterious and exciting elements and different foods (in opposition to the traditional Christmas dinner with the family), correlated positively with the value "hedonism" and negatively with the value "tradition".

The mediating/moderating roles of attitudes, motivations or behavioral intentions are often examined to understand the relationship between values and food-related behaviors (e.g. Dreezens, Martijn, Tenbult, Kok, and de Vries 2005; Honkanen, Verplanken, and Olsen 2006). To illustrate, Dreezens et al. (2005) reported that consumers for whom the value "power" (expresses dominance and submission) was relatively important had more positive attitudes toward genetically modified food and more negative attitudes toward organically grown food, whereas consumers for whom the value "universalism" (expresses welfare for all people and protection of nature) was relatively important had positive attitudes toward organically grown food. Steptoe, Pollard, and Wardle (1995), in turn, proposed that value-related motivations (health, mood, convenience, sensory appeal, natural content, price, weight control, familiarity and ethical concern) are important factors in explaining food choice. As an example of the role of those motivations, health (and attitudes towards healthy eating) was related to measured dietary and lifestyle behavior in the study of Hearty, McCarthy, Kearney, and Gibney (2007). In addition, Honkanen et al. (2006) found that ecological motives had a strong impact on attitudes: the more concerned consumers were with the environmental and the animal right issues, the more positive attitudes they had towards organic food and the more intensive intentions they formed to consume such food.

Although knowledge about consumers' values, attitudes and intentions may help to *predict* consumer behavior as regards to food choice, it is the *actual* behavior that counts. Even so, only a limited number of studies have investigated the effects of values on actual food choice behaviors. Next, five such studies are briefly introduced. To start with, Goldsmith, Freiden, and Henderson (1997) found that among 323 US women shoppers six values (self-respect, warm relationships, accomplishment, security, self-fulfillment and belonging) were negatively correlated with purchase frequency of convenience food (take-home and microwave meals). This indicates that such social values are not likely to drive the consumption of ready-made foods. Secondly, Tiilikainen (1999) identified values that guide food choices among 2200 Finnish consumers. He concluded that serious, collectivistic and conservative values (welfare of family and surroundings), rather than joyful and hedonistic values such as pleasure, were mainly driving food choice behavior regarding meat and dairy products consumption.

The other three studies examine the effects of universalistic values on nature-friendly food consumption behavior. Firstly, the study of de Boer, Hoogland, and Boersema (2007) revealed that in a sample of 1530 Dutch consumers universalism was related to low meat consumption and animal-friendly behavior (self-reported), and was mediated by animal-friendly attitudes, prevention-oriented food choice motivations and high involvement. Secondly, Grunert, and Juhl (1995) demonstrated in their study that among 174 Danish teachers the persons with green attitudes (relevant values: universalism, self-direction and benevolence) reported to buy more frequently organic foods (occasional or regular buyers = 75%) than persons with non-green attitudes (relevant values: power, security and conformity; occasional or regular buyers = 40%). Thirdly, Kihlberg and Risvik (2007) showed in a study of 184 Swedish consumers that unity with nature (universalism), world of beauty (universalism), curious and spiritual life were values that were important in regular organic products consumption. In turn, wealth (power), authority (power), honoring of parents and elders, clean, ambitious and respect for tradition were values associated with the lowest frequency of organic products consumption.

On the basis of aforementioned studies, consumers for whom the value of universalism is important are likely to more frequently consume ecological (e.g. organic, ethical) foods than consumers for whom value of power (opposite value type to universalism in the Schwartz's value structure) is important. Consequently, there exist some empirical evidence from surveys relying on self-reported food choice behaviors that values guide food choices, even though the influence of values is generally believed to be larger in the case of higher product-involvement levels (e.g. clothing) (Goldmith, Freiden, and Kilsheimer 1993). To conclude, experimental studies are needed - instead of surveys and self-reported buying behavior - to more fully understand the role of values in a real food choice situation.

2.2. The theory of value activation

In psychology, studies that examine the value-behavior – relation usually pay attention to situational influences as well (e.g. Smeesters, Warlop, Van Avermaet, Corneille, and Yzerbyt 2003; Feather 1995). One such situational factor is priming, which refers to activating effects of certain stimulation on associations in memory just before carrying out an action or task (Kolb and Whishaw 2003). The value activation occurs as a form of priming. In other words, consumer values are primed (activated) by a value-congruent stimulus. In order to generate activation, values need to be the primary focus of attention and implied by the situation or by the information a person faces. Values have the capacity of driving behavior if they are central to the self, that is, when values are part of a person's self-concept and contribute to one's sense of identity (Verplanken and Holland 2002).

Verplanken and Holland (2002) conducted a series of studies to analyze value-congruent behaviors. In a number of the studies they manipulated (activated) participants by priming (information-processing tasks) their central values. For instance, in the second study (2x2 mixed design, in which value prime: present vs. absent, and value centrality: central vs. not central) participants (99 students) first responded to the 56-item Schwartz Value Survey (Schwartz 1992) in order to measure the centrality of environmental values (i.e. how important the values "unity with nature" and "protecting the environment" were for them). Secondly, participants were manipulated by value activation that occurred in the form of a sentence correcting test including words either related or unrelated to the environment, depending on the condition (prime vs. control). Lastly, participants made a choice between 20 television sets that were described by seven attributes, including environmental aspects. The results revealed that participants with central environmental values made more environmentally friendly choices (i.e. favored televisions emphasizing environmental aspects), but only when participants were primed with value-relevant information. To conclude, values

that are central to the consumer need to be activated in order to result in value-congruent behavior (Verplanken and Holland 2002).

3. METHODOLOGY

To analyze how consumers' activated values affect their actual food product choices, an experimental study was carried out. The study design of the experiment required recruiting consumers with pre-known central value orientations. Thus, a large number of consumers (c. 1100) were first enticed to register to a web-site. Upon registration they were asked to give certain personal information as well as to answer certain food product usage questions (buying frequencies) and fill in the Schwartz Value Survey (Schwartz, 1992), including 45 items in seven value domains, on the scale of 1-7 (1=not at all important…7=extremely important).

Next, the registered consumers were screened in the search for cases that represent traditional consumers and hedonic consumers. The decision to focus on traditional and hedonic consumers was based on two arguments. First, these value orientations are in clear opposition in Schwartz's (1992) circular value structure that should maximize the likelihood of the emergence of the value effects. Second, this value opposition has received less academic attention in the food research context; the most common value opposition explored so far has been between universalism and power. The pre-determination of traditional and hedonic consumers occurred by analyzing the responses to the Schwartz Value Survey items tapping tradition ("respect for tradition" and "moderate") and hedonism ("enjoying life" and "pleasure"). Traditional consumers scored 5.98 (mean) for "respect for tradition" and 5.06 for "moderate" while hedonic consumers scored 3.81 and 3.84, respectively. In turn, hedonic consumers scored 6.72 for "enjoying life" and 6.12 for "pleasure" while traditional consumers scored 5.80 and 4.53, respectively. Differences between the groups for these means were statistically significant at .001 level. Thirdly, these traditional (n=103) and hedonic (n=112) consumers were invited to take part in a study involving a choice experiment. Table 1 shows the background information of traditional and hedonic consumers.

TABLE 1
The demographics of the participants.

	Hedonists	**%**	**Traditionalists**	**%**
Gender				
female	89	78,8	83	81,4
male	24	21,2	19	18,6
total	113	100,0	102	100,0
Age (years)				
<25	41	36,3	7	6,9
25-34	38	33,6	16	15,8
35-44	18	15,9	29	28,7
45-54	10	8,8	30	29,7
55-64	6	5,3	18	17,8
65-	0	0,0	1	1,0
total	113	100,0	101	100,0
Education				
elementary and/or vocational school	11	9,7	24	23,5
institute	22	19,5	27	26,5
high school graduate	52	46,0	20	19,6
college or university	28	24,8	31	30,4
Total	113	100,0	102	100,0

It was controlled that participants were responsible for their household's food purchasing (94%) and regular users of the test product categories that included rye bread (3 variants in the experiment), cold cut (4), well-being drink (4) and yoghurt (4). These product categories were chosen for the study as they represent typical everyday grocery items that still vary in terms of 1) their involvement level (lowest cold cut, highest well-being drink) and 2) their brand image profiles. The images consumers associate with these food product brands were explored in another survey (a separate sample, n=124). The results of this survey suggested that two rye bread brands, one cold cut brand and one yoghurt brand were perceived as more traditional (key indicative items "conventional" and "moderate") while two well-being drink and two yoghurt brands were perceived as more hedonistic (key indicative items "exciting" and "up-cheering"). Logically, it was expected that after the value activation 1) traditional consumers should favor (both in terms of choices and attitudes) food products with a traditional image over the food products with a hedonistic image and 2) hedonistic consumers should favor (both in terms of choices and attitudes) food products with a hedonic image over the food products with a traditional image.

The experiment was conducted in neutral classroom-like surroundings. The first phase involved the value activation by exposing the participants to a message (an A4-paper with a picture + a statement) appealing either to traditional or hedonistic values. These messages were selected from a pre-tested (n=31) pool of 15 picture-statement -combinations. That is, the pre-testers were shown three presumably traditional and hedonic pictures and five presumably traditional and hedonic statements and asked to indicate which of the picture-statement combinations they thought best reflect either a traditional or a hedonic worldview. In the experiment, participants were requested to process the picture-statement -combination for a minute or two and then jot down a few lines regarding their thoughts and the feelings aroused. This was to ensure that participants' central values were really activated.

In the second phase, the study participants were led to a table on which all of the variants of one product category were laid in their genuine retail packages (touching was also permitted).

Participants were asked to imagine that they are buying rye bread, cold cut, well-being drink or yogurt for their personal weekday use. They were requested to indicate which one of the alternatives was their first, second, third and fourth choice. After this indication they were asked to give reasons for their choices. Subsequent to this task, participants' food product images were measured using the following semantic differentials adapted from Schwartz's (1992) value items: 1) fascinating – down-to-earth, 2) conventional - modern, 3) friendly to environment – hostile to environment, 4) active – passive, 5) exciting – dull, 6) original – common, 7) responsible – irresponsible, 8) appreciated – unappreciated, 9) daring – shy, 10) up-cheering – boring, 11) moderate – colorful, 12) ethical – unethical, 13) natural – unnatural and 14) dominating – submissive. This image measurement was supplied to help the analysis of correspondence between respondents' value orientations and product images. After the completion of all the tasks and questionnaires involved, the study participants were debriefed and given a food product package worth 10 euros.

4. RESULTS

At first, the success of value activation manipulation (message processing task) was checked. Based on the simple content analysis of participants' comments on the value activation message, the hedonic participants regarded the hedonic message as follows: 79% liked it, 12% were ambivalent about it (both positive and negative statements) and 9% disliked it. The traditional participants regarded the conservative message as follows: 76% liked it, 16% were ambivalent about it and 8% disliked it. Thus, the value activation can be viewed as reasonably successful, since the majority of the participants in both groups had clearly positive (i.e. value-congruent) thoughts and feelings about the presented value-activating message, and only less than one tenth of the participants evaluated messages as incongruent with their views.

The analysis of the food choice task (indication of first, second, third and fourth choices) revealed that only one product was clearly chosen differently between the hedonic and traditional participants. According to the Mann-Whitney U-test (adaptable for measurements with small sample sizes and ordinal scale variables), the well-being drink "B2" was favored by the hedonic participants (mean ranks 61.86 vs. 77.37, Z=-2.354, p=0.019). More specifically, 31.4% of the hedonists ranked the product as their first choice among the four variants, while the respective percentage for the traditional participants was 22.1%. Among the rest of the seven food products no statistically significant between-group differences were found. To illustrate, between the hedonic and traditional consumers, the first choice percentages among the products perceived as hedonic (well-being drink "B1" 15.5% (by hedonists) vs. 17.6% (by traditionalists), yoghurt "D1" 11.9% vs. 17.6% and yoghurt "D2" 19.0% vs. 14.7%) and among the products perceived as traditional (yoghurt "C1" 21.4% vs. 17.6%, rye bread "E2" 29.2% vs. 32.7% and rye bread "F1" 49.2% vs. 49.0%) were relatively close to equal. Even so, one logical tendency emerged within the cold cut "H1" choices. The traditional participants chose this conventional product more often than the hedonists did (first choices 21.6% and 10.4%, respectively; mean ranks 53.99 vs. 46.34, Z=-1.358, p=0.174).

The product images were also measured in order to analyze participants' attitudes towards the food products included in the experiment. According to the independent samples t-test, several statistically significant differences between the hedonic and traditional participants' images were found. Minor image differences (0-2 out of 14 image attributes) came out among well-being drinks "A1" (2) and "A2" (1), yoghurts "C1" (2), "C2" (0) and "D2" (0), rye breads "E1" (1), "E2" (2) and "F1" (1) as well as cold cuts "K1" (1) and "G1" (0). Moderate (3-5 attributes) or major (6 or more) image differences emerged among well-being drinks "B1" (6) and "B2" (8), yoghurt "D1" (3), and cold cuts "J1" (3) and "H1" (6). More importantly, altogether 13 image attributes were related to traditionalism and hedonism. These between-group differences are illustrated in Table 2. Firstly, the hedonic participants considered both well-being drinks more modern, more colorful and more exciting than the traditional participants. Secondly, the yoghurt "D1" was rated more colorful, more exciting and more up-cheering, and the yoghurt "C1" more moderate among the hedonists than among the traditional participants. Thirdly, the cold cut product "H1" was evaluated by the hedonic participants as being more conventional, more moderate, more dull and more boring.

TABLE 2
Product image differences between hedonic (hed) and traditional (trad) consumers.

Product	Image (scale 1-9)	M(hed)	M(trad)	t	Sig.
Well-being drink B1	Conventional (1) – Modern (9)	6.96	6.26	2.45	.015
Well-being drink B1	Moderate (1) – Colorful (9)	6.10	5.33	2.93	.004
Well-being drink B1	Exciting (1) – Dull (9)	3.51	4.09	-1.99	.049
Well-being drink B2	Conventional (1) – Modern (9)	7.08	6.00	3.74	< .001
Well-being drink B2	Moderate (1) – Colorful (9)	6.07	5.27	3.16	.002
Well-being drink B2	Exciting (1) – Dull (9)	3.41	4.22	-2.83	.005
Yoghurt C1	Moderate (1) – Colorful (9)	3.17	4.21	-3.41	.001
Yoghurt D1	Moderate (1) – Colorful (9)	6.81	6.12	2.07	.042
Yoghurt D1	Exciting (1) – Dull (9)	3.17	3.94	-2.22	.030
Yoghurt D1	Up-cheering (1) – Boring (9)	3.02	3.82	-2.11	.038
Cold cut H1	Conventional (1) – Modern (9)	2.02	2.96	-3.67	< .001
Cold cut H1	Moderate (1) – Colorful (9)	3.06	3.94	-2.89	.005
Cold cut H1	Exciting (1) – Dull (9)	6.73	5.92	2.89	.005
Cold cut H1	Up-cheering (1) – Boring (9)	6.56	5.64	3.52	.001

Note. "Conventional" and "moderate" are associated with traditionalism, "exciting" and "up-cheering" with hedonism.

To sum up, three out of four food products associated with hedonic image (B1, B2, D1 and D2) were perceived more positively by hedonistic than by traditional consumers. Of four food products associated with traditional image (C1, E2, F1 and H1), one was more positively perceived by traditional than by hedonistic consumers. These results indicate that the value activation had only a weak influence on value-congruent food choice behavior but had more impact on product attitudes.

5. DISCUSSION AND CONCLUSIONS

In this study, the effects of consumer values on their actual food product choices were investigated. In the experimental procedure, the values of hedonic and traditional consumers were first activated. Then, in a simulated grocery shopping task they selected their favorite food products in four product categories. Finally, they evaluated each of the food products in terms of their image attributes. The results revealed that even after a successful value activation only one product out of eight was chosen differently (as expected) by the two consumer groups. Still, attitudes towards the majority of the food products were different between groups indicating that the hedonic consumers preferred products with a hedonic image and the traditional consumers preferred products with a traditional image lending support to the common observation that consumers' attitudes do not always or even most of the time translate into behaviors that are consistent with these attitudes.

Since consumers' central values, even after value activation, did not explain food choices very well, an additional analysis regarding the role of demographic factors as an explanation for study participants' food product choices was conducted. Especially gender and age were factors that could be related to differences in food choices. Five statistically significant effects of age and two effects of gender on food product choices were found. For example, certain rye bread product was clearly favored by older study participants, while another rye bread product by younger participants. Thus, it seems that demographics might still be a more powerful predictor of food choices than psychographics in spite of the current claim that they "are becoming less practical in the analysis and prediction of consumer behavior" (Buckley, Cowan, and McCarthy 2007).

However, the involvement level of food products studied may have affected the results. The only product choice difference found between the hedonic and traditional consumers was in the case of one well-being drink. Of the studied food product categories, well-being drinks with designed product brands, tailored claims and engineered tastes were closest to differentiated specialty products that usually are featured by higher levels of involvement. It is possible that more differences in food choices between the hedonic and traditional consumers would have surfaced, if food products from the higher end of the involvement continuum (e.g. rare seafood, finest chocolate, luxurious cheeses) had been studied.

In this study, conscious mental mechanisms were used to activate consumers' central values in a food choice situation. The food choices could have been partly different, if we had used unconscious value activation as Verplanken and Holland (2002) mostly did in their experiments. There exist some evidence that consumers' unconscious implicit preferences may have an impact on their behavior. For example, Friese, Wänke, and Plessner (2006) demonstrated that especially under time pressure consumers' unconscious implicit preferences influenced their food choices. As a part of their experimental procedure they asked the participants to classify certain words and pictures of products/ brands together. This was meant to reveal participants' unconscious implicit preferences. The results of this study speak for the effectiveness of unconscious value activation, if it is accepted that unconscious implicit preferences are similar to unactivated central values and that classification task resembles an unconscious value activation process.

A number of research limitations need to be taken into consideration. First of all, the results do not allow for generalizations to be made, since the sample population lived only in urban surroundings, both young consumers and women were over-represented, and hedonic consumers were younger and better educated than traditional consumers in our sample. Secondly, the test environment was not a real retail environment with a multitude of influences and choice alternatives. The experiments were conducted in simple laboratory-like surroundings with a minimal number of atmospheric attractions (excluding e.g. ads, prices, odors, colors, product placement, other customers) and with a limited number of products. Lastly, larger sample size might have produced more food choice differences between hedonists and traditional consumers. Based on these limitations and our results, there is room for more food choice research that profoundly investigates the dynamics of value-behavior –relation. To illustrate, we suggest that further research could take into account consumers' value structures (centrality and activation), food choice motives, the choice behaviors in real commercial surroundings analyzing the content of shopping carts at cashier and restaurant menu choices and situational factors (e.g. different atmospherics) in their study design.

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Research report

Food choice motives and bread liking of consumers embracing hedonistic and traditional values

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ABSTRACT

This study addresses the effect of personal values on consumers' food choice motives and on the liking of bread. A total of 224 consumers participated in the study in three groups: traditional and hedonistic consumers, who presented opposite value types according to the Schwartz value theory, and a control group. Three different rye breads were evaluated for liking and their sensory profiles were determined. The consumer groups' values, food choice motives measured with the Food Choice Questionnaire and a Concern scale, and liking of the breads differed significantly according to the analysis of variance and a partial least squares regression analysis. For hedonistic consumers, rye bread characterized by a soft and porous texture influenced liking positively, and food choice motives "mood" and "price" correlated positively with their values. Traditional consumers were more positive toward different types of rye bread, and food choice motives "natural content", "familiarity" and "health concern" were more important to them than to hedonists. Overall, this study demonstrated that values are connected to food choice motives and, to some extent liking and, thus, values can be utilized both in product development and in advertising.

Introduction

Grain products, providing carbohydrates, protein, dietary fibre and many vitamins, have an important role in our daily diet worldwide (Dewettinck et al., 2008). Wheat is by far the most important crop for breadmaking, but rye bread has established its place in northern and eastern Europe. For instance, in Finland, rye bread is consumed more than white bread (Paturi, Tapanainen, Reinivuo, & Pietinen, 2008; Prättälä, Helasoja, & Mykkänen, 2001). Studies of populations consuming high amounts of rye in their foods have shown health benefits, such as a reduced risk of bowel cancer and improved bowel health (Gråsten et al., 2000; McIntosh, Noakes, Royle, & Foster, 2003) as well as enhanced insulin secretion, which may prevent the development of type 2 diabetes (Juntunen, Laaksonen, Poutanen, Niskanen, & Mykkanen, 2003). Increasing of rye food consumption should be recommended for improved health. From a sensory quality point of view, the flavour of rye bread has been described to be intense, rye-like and relatively sour and bitter (Heiniö, Urala, Vainionpaa, Poutanen, & Tuorila, 1997; Heiniö et al., 2003, 2008).

The quality and taste of food, together with the price and healthiness, have been observed to be among the top four influences on food choice in European Union countries (Lennernäs et al., 1997). The order of relative importance between flavour and healthiness seems to be more dependent on individual factors than on culture. Important individual factors that have an impact on food consumption behaviour are demographics such as age and gender (e.g. Fagerli & Wandel, 1999; Wadolowska, Babicz-Zielinska, & Czarnocinska, 2008) and psychographics such as motivations (e.g. Pollard, Steptoe, & Wardle, 1998) and values (e.g. Grunert & Juhl, 1995; Kihlberg & Risvik, 2007).

It is assumed that an individual's behaviour is influenced by beliefs, norms, attitudes and intentions (Ajzen, 1985). It is commonly believed that personal values, which are relatively stable constructs in people's lives, guide behaviour through attitudes or motives, which may easily vary over time and place. According to Schwartz (1992), personal values (1) are concepts or beliefs, (2) relate to desirable end states or behaviours, (3) control specific situations, (4) guide the selection or evaluation of behaviour or events and (5) are ordered in relative importance. Schwartz (1992) has identified 56 universal values related to 10 value domains. For instance, hedonism is compatible with stimulation, but hedonism and tradition are opposite value types (Fig. 1, Table 1).

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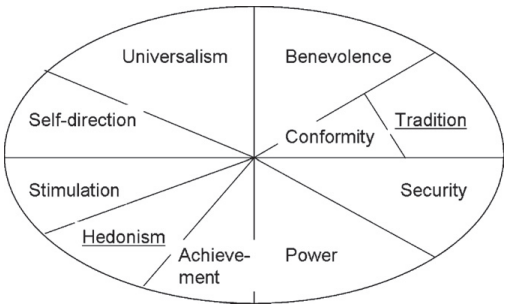

Fig. 1. Ten value domains of the Schwartz value survey and the circumplex structural relations among them. Hedonistic and traditional values are the focus of this study.

The reasons why a consumer chooses rye bread in his or her diet are numerous and include factors relating to the product, the consumer and the situation (Shepherd, 1989). It has been noticed in many sensory studies that different consumers may have different sensory-specific preferences (Mejholm & Martens, 2006; Pohjanheimo & Sandell, 2009a; Pollard et al., 1998; Wadolowska et al., 2008). It is important for marketing, food development and for consumers to examine consumer groups sharing similar consumption patterns. The rallying point between the consumers, for example a high concern about their health (Pohjanheimo & Sandell, 2009b), that knits similar consumers together from a heterogeneous population can be utilized in developing products or in more directed advertising, and thus can increase the degree of success in the market and increase the pleasantness from the consumer point of view. When personal values have been used as a criterion for segmenting consumer groups, it has been found that the groups share similar education levels and job types (Pitts, 1981) as well as similar choice criteria for product classes and brands (Pitts & Woodside, 1983). Personal values have been studied widely in psychological research, but in food science the studying of the relationships between values and food choice motivations or food liking is a rather young field of research. However, several correlations have been found between value domains and food-related attitudes (Bech-Larsen & Grunert, 2003; Brunsø, Scholderer, & Grunert, 2004; de Boer, Hoogland, & Boersema, 2007; Dreezens, Martijn, Tenbult, Kok, & Vries, 2005a; Grunert & Juhl, 1995; Honkanen, Verplanken, & Olsen, 2006; Hoogland, de Boer, & Boerssema, 2007; Saher, Lindeman, & Koivisto Hursti, 2006). Brunsø et al. (2004) stated that values influence peoples' motives driving the way people perceive and experience food in their everyday life. Furthermore, Bech-Larsen and Grunert (2003), Dreezens et al. (2005a) and Saher et al. (2006) suggested that values might play a role in explaining attitudes toward genetically modified, functional and organically grown foods. However, Verplanken and Holland (2002) showed in their experimental study that participants with central environmental values made more environmental friendly choices only when the participants were primed with value-relevant information. Thus, values central to the consumer need to be activated in order to result in value-congruent behaviour. In the present study, the interest was directed to differences between hedonistic and traditional consumers after their values were activated by hedonic/traditional information. According to de Boer et al. (2007), taste-orientation correlates positively with hedonism and negatively with tradition indicating that sensory appeal is more important to hedonistic consumers. In addition, previous studies have shown that demographic differences exist between subjects' who embrace hedonistic and traditional values, so that traditional subjects are older and hedonistic subjects are younger people on average (Kihlberg & Risvik, 2007; Puohiniemi, 2002). Older consumers have been shown to rate health (Prescott, Young, O'Neill, Yau, & Stevens, 2002) and health concern (Bower, Saadat, & Whitten, 2003) as well as natural content, familiarity and ethical concern (Prescott et al., 2002; Steptoe, Pollard, & Wardle, 1995) higher than younger consumers.

Recently, Allen, Gupta, and Monnier (2008) argued that people compare the values symbolized by a product with their own value priorities, and value–symbol congruency influences not only attitudes and behaviour toward the product but also taste evaluation. Rye bread has a reasonably tough texture and sour flavour, which is likely to influence negatively its consumption in situations where you want to eat something delicious. This implies that rye bread may fit better with the values of a traditional consumer than a pleasure-seeking hedonist. Kihlberg and Risvik (2007) actually found that hedonistic consumers prefer bread with higher smoothness, elasticity and juiciness, and the bread that was the most liked among traditional consumers had a higher degree of mastification resistance. However, the consumption of rye bread should be highly recommended because of its superior healthiness. Puohiniemi (2002) stated that having a healthy lifestyle and eating habits can be seen as having an enjoyable life and, therefore, the consumption of rye bread is not necessarily inconsistent with the hedonistic values.

The purpose of this interdisciplinary study was two-fold. The first aim was to investigate whether the consumer groups embracing hedonistic and traditional values have different sensory preferences for rye bread. Hypothesis was that hedonistic subjects share a lower liking for rye breads than traditional subjects. The second aim was to explore the relationships between values and food choice motives measured with the Food Choice Questionnaire and the Concern Scale. Based on the scientific findings above, we expected that general food choice motivations would appear to be partly different between hedonistic and traditional consumers, and traditional subjects are more motivated by health, health concern,

Table 1
Forty-five value items of the shorter Schwartz Value Survey (Schwartz, 1994) representing the ten value domains.

Value domain	Value items
Self-direction	Freedom, creativity, independent, choosing own goals, curious
Stimulation	An exciting life, a varied life, daring
Hedonism	Pleasure, enjoying life
Achievement	Ambitious, influential, capable, successful
Power	Social power, wealth, authority, preserving my public image
Security	National security, reciprocation of favours, family security, social order, clean
Conformity	Obedient, self-discipline, politeness, honouring of parents and elders
Tradition	Respect for tradition, accepting my portion in life, humble, moderate
Benevolence	Helpful, responsible, forgiving, honest, loyal, a spiritual life
Universalism	Equality, unity with nature, wisdom, a world of beauty, social justice, broad-minded, protecting the environment, a world at peace

natural content, familiarity and ethical concern orientations, whereas hedonistic subjects are more sensory appeal-motivated than traditional subjects.

Materials and methods

Procedure and Schwartz Value Survey

This study was conducted in three parts. First, consumers filled in the shorter version of the Schwartz Value Survey (Schwartz, 1994) (Table 1) during the recruiting process and were divided into groups according to their values. The second part of the study involved a hedonic testing of three rye breads and a questionnaire stage, whereas in the third part a sensory profile of the breads was created using a sensory panel.

Some modification was done to the original Schwartz Value Survey. Although Schwartz asked the respondents to rate each issue "As a guiding principle in my life", using a scale from 7 to −1 (7 = of supreme importance, 0 = not important, −1 = opposed to my values), we advised our subjects to rate the values by answering the question "How important are the following issues in your personal life?" on a scale of 1–7 (1 = not at all important, 7 = extremely important). This scale change was based on the observation that pre-testers ($n = 11$) experienced the original scale as slightly complex, which could have affected some consumers' attitudes toward answering the survey.

Participants

A total of 224 consumers, between 15 and 63 years old, participated in the study. Voluntary subjects were recruited mainly from companies and educational institutes in the Helsinki Metropolitan Area. The subjects gave background information and filled in Schwartz Value Survey on an Internet page that was established for the study. Background data, such as contact information, age, gender, education, and a profession were first recorded. The respondents were also asked to state whether they were responsible for the daily household purchases and how often they consumed several food products. The regular consumption of rye bread was used as the criterion for inviting the subjects to participate in the hedonic test, and 90% of the participative subjects reported to eat rye bread at least once a week, the remaining 10% used rye bread somewhat less frequently.

On the basis of their responses to Schwartz Value Survey, the subjects were divided into three groups: traditional, hedonistic and control. The subjects who scored highly on two hedonic value items "pleasure" (6.12 on average) and "enjoying life" (6.72) and low on the traditional values "respect for tradition" (3.81) and "moderate" (3.84) were chosen for the hedonists' group ($n = 65$). In turn, the subjects who scored highly on the traditional values "respect for tradition" (5.98 on average) and "moderate" (5.06) and scored lower on the hedonistic values "pleasure" (5.80) and "enjoying life" (4.53) were chosen for a traditional group ($n = 51$). The differences between hedonistic and traditional groups for these means were statistically significant ($p < 0.001$, $d = 1.5–1.6$). All the other subjects formed a control group ($n = 108$) where several values usually acted as equal in their lives, so traditionalism or hedonism were not the most important value priorities for them.

Value activation and hedonic testing

The hedonic test was conducted in a separate room in a shopping centre. A maximum of four people were involved in the test at the same time. The sample preparation space was sealed off in order to prevent all visual contact with the evaluation space and the passage near the testing location was restricted to minimize all disturbing factors.

The selected subjects were given an individual test time, and traditional, hedonistic and control group subjects participated in the study on separate occasions. First, in order to evoke personal values of hedonistic and traditional subjects prior to the hedonic evaluation of rye breads, values were activated to achieve value-congruent behaviour. The idea of using value activation to stimulate individually important values is based on studies by Verplanken and Holland (2002). The value activation was conducted by exposing the subjects to a visual and verbal message with posters and in research forms appealing either to traditional or to hedonistic values. The activation messages were as follows:

- A picture presenting a typical Scandinavian lunch portion including potatoes, meat balls, green salad, rye bread and milk, and a statement: "Traditional home-made food is familiar and secure to eat; moreover, it is important to obey commonly accepted habits, while dining." (traditional)
- A picture presenting an amorous-looking, well-dressed couple having dinner in a fine restaurant (no food in sight) and a statement: "Enjoyable life contains pleasure for all senses. Therefore it is wonderful to take time to indulge yourself." (hedonistic)

These two messages were selected from the pool of 15 picture–statement combinations since they were rated by pre-testers ($n = 31$) as best reflecting either a traditional or a hedonic view.

In the actual test, subjects were requested to process the activation message and briefly to write down the uppermost thoughts and feelings aroused in order to ensure that their central values were really activated. To measure the value activation manipulation, a content analysis of subjects' comments on the activation message was performed (Tuomi & Sarajärvi, 2002). The authors quantified the subjects' comments by calculating the frequencies of clearly positive and negative statements. According to the analysis, 79% of the hedonic participants had positive thoughts about the hedonic message and 76% of the traditional participants had positive thought about the traditional message. Since the majority of the participants in both groups had clearly positive (i.e. value-congruent) feelings about the presented message the value activation can be viewed as reasonably successful.

Individuals differ in the degrees to which sensory inputs (e.g. appearance, odour, taste/flavour) they weight more to overall liking (Moskowitz & Krieger, 1995). In the case of rye bread, which may awaken strong sensations due to its tough texture, intense and sour flavour, we asked the subjects to evaluate the pleasantness first separately for the appearance, odour and taste/flavour and then finally for the overall liking. The pleasantness was evaluated using a labelled affective magnitude (LAM) scale (Cardello & Schutz, 2004; Schutz & Cardello, 2001). The LAM was chosen for its improved discriminatory capacity and ability to reduce the central tendency and the end effects that can occur when using a 9-point hedonic scale. The LAM scale was a 100 mm vertical line, with the interior scale points consisting of the labels of the 9-point hedonic scale and the extreme end anchors were labelled as "the greatest imaginable liking/disliking".

Samples

Three types of flat rye breads, which are all commercially available in the Finnish bread market, were purchased either from a local supermarket or received directly from the manufacturer. The breads belonged to the same product group and were competing brands in the product segment. Two of the breads

Fig. 2. A picture of rye breads (F1, E1 and E2, respectively) served as samples.

were from the same manufacturer but the brands were different (encoded here as E1 and E2) and the third bread came from another manufacturer (F1).

The rye breads had the same baking day and during the test days the breads were equally fresh. The flat breads, which were about 1.5 cm height, were cut into 2 cm × 2 cm pieces in order to mask the unique shape of the rye breads (Fig. 2). Two pieces of each bread type were served to the subjects. Pieces of the same bread were placed on a plate, labelled with a three-digit random number and then all the three sample plates were presented to the consumers in a random order. The breads were stored in sealed plastic bags and placed on the plates immediately prior to the evaluation in order to avoid sample drying.

Questionnaire stage

The subjects filled in two questionnaires in order to assess their food choice motives and to be able to measure the correlations between values and food choice motives. Subjects completed the Food Choice Questionnaire (FCQ) (Steptoe et al., 1995) and a Concern Scale (Kähkönen, Tuorila, & Rita, 1996). The FCQ consisted of thirty-six items designed to assess the reported importance of nine factors that may influence food choice. These factors are health, convenience, price, sensory appeal, natural content, mood, familiarity, ethical concern, and weight control. In the FCQ, the subjects were asked to evaluate and rate the statement "It is important to me that the food I eat on a typical day ..." for each item. Instead of the four-category scale used by Steptoe et al. (1995), a seven-point importance scale (from disagree strongly (1) to agree strongly (7)) was used in this study to allow finer discrimination between food choice motives. The Concern Scale contained nine items related to concern about food and health. The subjects were asked to rate their opinions in response to the question: "When thinking about your own health, how concerned are you about the following issues?" The questions concerned possible unhealthy ingredients in food and the perceived risk of certain diseases. The degree of concern was rated for each item using a nine-point scale ranging from "not at all concerned" (1) to "extremely concerned" (9).

Descriptive sensory analysis

A sensory profile of rye breads was obtained using generic descriptive analysis (Lawless & Heymann, 1998) by a sensory panel of 11 assessors. All the assessors were women (aged 23–42 years) and they were experienced and pre-trained in the sensory method used as they had participated into similar sensory panels previously in our sensory laboratory. The assessors were selected according to their willingness, availability, motivation and previously demonstrated capability of working as part of a sensory panel. Each assessor participated in five 75 min more specific training sessions where the panel developed a sensory vocabulary by describing differences between three rye bread samples. During the training sessions, the assessors were familiarized with the usage of attributes and the intensity scale. The intensities of each attribute were scored on an unstructured line scale of 10 cm anchored by verbal endpoints from 0 (none) to 10 (very strong) with the help of the references (Table 2). Compusense five software (version 4.1.2, Compusense, Guelph, Canada) was used for data collection. The 1.5 cm high bread samples were cut into 2 cm × 2 cm pieces (Fig. 2) and otherwise the sample handling was identical to the hedonic test. Each of the three samples was evaluated four times during three separate sessions and the sample presentation order was randomized between and within the assessors. Activated carbon-filtered tap water was served to cleanse the palate between samples. The sensory profiling took place in a sensory laboratory of the Functional Foods Forum, which is in accordance with the ISO 8589-1988 standard.

Statistical methods

Statistical analyses were performed using SPSS 16.0 (Inc. H, Chigaco, IL) and Unscrambler version 9.7 (CAMO, Trondheim, Norway).

Determining the differences among the samples and the consumer groups. The paired sample two-tailed *t*-test was used to determine if the liking for the bread samples differed in the entire consumer sample. To study the differences among the breads in sensory attributes and among the hedonistic, traditional and control groups both in liking and food choice motives, a one-way analysis of variance (ANOVA) were used. When appropriate, Tukey's post-hoc tests and a Tamhane test were applied to identify between-group differences. Cohen's *d* effect sizes were calculated according to Thalheimer and Cook (2002). Effect sizes between 0.2 and 0.5 reflect a small effect, between 0.5 and 0.8 a moderate effect, and above 0.8 a large effect (Cohen, 1988). To find out which sensory characteristics influenced the overall liking in the different consumer groups, a partial least square (PLS) regression method was applied. For the regression analyses, the data were standardized and full cross validation was used as validation criteria for value and motive regression and leverage correction for sensory quality and liking regression.

Interpreting and studying the relationships between the Food Choice Questionnaire, a Concern Scale and Schwartz Value Survey. The thirty-six items of the Food Choice Questionnaire were factor analysed by using the method of maximum likelihood with varimax rotation. The aim of the factor analysis was to combine items into nine subscales according to the original theory of Steptoe et al. (1995). Then, the scores for each sub-scale were computed by averaging the unweighted ratings of individual items. The internal reliability of each of nine subscales was tested using Cronbach's alphas and inter-item correlations. Pearson correlation coefficients were calculated for the relationships between hedonistic and traditional values and FCQ subscales and the Concern Scale. To interpret the results for the ten Schwartz value types, principal component analysis (PCA) was applied. PLSR

Table 2
Sensory attributes, definitions, and references with their intensities used in the sensory profiling of rye breads.

Sensory attribute	Attribute definition	Reference (intensity level, 0–10)
Odour = O		
O-Intensity	Perceived first impression of odour intensity after the bread has been opened	Rye bread (Ullan Pakari, Finland) = 8
O-Sourness	Sour odour	Rye bread (Ullan Pakari, Finland) = 8
Flavour = F		
F-Intensity	Perceived impression of flavour intensity in mouth after chewing	Mixture of 40 g malt (Tuoppi, Laihian mallas Oy, Finland), 40 g rye flour (Myllyn paras Oy, Finland), and 60 g water = 10
F-Rye	Intensity of rye flavour after swallowing	
F-Brownness	Intensity of browned flavour after biting a crust piece before swallowing	
F-Sourness	Sour taste. Evaluated after swallowing	Rye bread (Ullan Pakari, Finland) = 7
Texture = T		
T-Colour	Colour of bread crust.	Light colour[a] = 0; dark[a] = 10
T-Porosity	Amount and size of holes in the sample	Tight, doughy bread, only pinprick holes[a] = 0; porous, a sponge with 0.5 cm holes[a] = 10
T-Softness	The force required to compress the sample between fingers	Firm[a] = 0; soft[a] = 10
T-Toughness	Amount of mastication needed before swallowing	Crumbly[a] = 0; tough[a] = 10
T-Springiness	The speed with which a compressed sample returns to its original state after the deforming force is removed	Raspberry marmalade (Marjat/Bär, Candy King) = 7
T-Moistness	Feeling of moisture on the cut surface of the sample when pressed against lips	Rusk (Töysäläinen Oy, Finland) = 0; 1 cm × 2 cm piece of dishcloth (Vileda, Sweden) moisturized with 500 μL of water = 10

[a] Verbal reference used to help the evaluation..

was used to analyse the regression coefficients between the value domains and food choice motives.

Results

Characterising consumers with personal values and demographics

Principal component analysis of the Schwartz 10 motivational value types as rated by all 224 subjects explained 61% of the variance with the first 2 principal components (Fig. 3). Value domains were calculated according to the Schwartz value theory by averaging value items representing the value type (Table 1). The plot created a value structure that is in line with the Schwartz value theory by separating hedonism and tradition to the largest dimensions, described by both PC1 and PC2. Tradition correlated positively with conformity and security, which are compatible values according to the original theory. The loading plot separated self-enhancement values (stimulation, hedonism, achievement and power) from self-transcendence values (universalism, benevolence, tradition and conformity) with the second principal component. In conclusion, hedonism and tradition were successfully opposite value types according to the analysis, so choosing the subjects whose values differentiated from each other was justified.

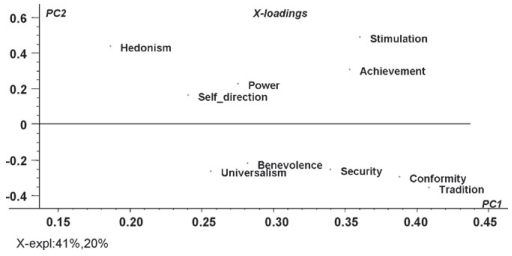

Fig. 3. PC1 and PC2 of the principal component analysis of the ten Schwartz value domains as rated by consumers ($n = 224$).

Table 3 presents the demographics of three consumer segments (hedonistic, traditional and control) studied here. Most of the consumers in all the groups were females. The groups differed from each other in age and the traditional subjects were significantly older than the hedonistic subjects ($F(1, 115) = 28.8$, $p < 0.001$, $d = 1.01$). The traditional subjects had a lower education (nine years' comprehensive school or vocational school education) more often than the hedonistic subjects, who, in turn, more often had an upper secondary school education. Over a third of the hedonists were still students whereas a larger number of the traditional subjects were working as employee or were out of the labour market for other reasons. A clear difference was also observable in the family structure between the groups. Circa 65% of the households had two adults in the control and the traditional subjects' families. In the case of the hedonistic subjects, there were exactly 50% with two adults and 50% with a single adult. Most of the households of hedonistic and control subjects had no children (90.9% and 68.5%, respectively), while most of the households of traditional subjects had one or more children. There was no significant difference in frequency of eating rye bread between hedonistic and traditional consumers. 47% of the hedonistic participants reported to eat rye bread every day, while 55% of the traditional participants ate rye bread every day.

Bread liking explained together with sensory properties and personal values

According to the paired sample t-test, significant differences were observed in the liking of the rye bread samples when the liking scores were averaged over all the consumers ($n = 224$). The bread E1 was the least liked rye bread in every evaluated attribute (appearance, odour, taste and overall). The difference was significant ($p < 0.05$) in comparison with E2 and F1 in all other attributes except the taste of E2. Rye breads F1 and E2 were almost equally liked except for the appearance, which was more pleasant for the rye bread E2.

Analysis of the liking scores for rye breads among the hedonistic, traditional and control subjects using the ANOVA showed some effects, depending on the consumers' value

Table 3
Demographic profile of respondents ($n = 224$).

		Control subjects ($n = 108$)	Hedonistic subjects ($n = 65$)	Traditional subjects ($n = 51$)
Gender	Male	9.3%	21.2%	17.6%
	Female	90.7%	78.8%	82.4%
Age mean (SD)		34.3 (11.3)	31.7 (10.3)	42.4 (11.1)
Education	Basic nine years	2.8%	3.0%	9.8%
	Vocational school	18.5%	21.2%	37.3%
	College	39.8%	48.5%	23.5%
	University	38.9%	27.3%	27.5%
Job description	Higher official	14.8%	18.2%	21.6%
	Performing worker	44.4%	40.9%	52.9%
	Student	36.1%	36.4%	13.7%
	Pensioner, unemployed or otherwise out of labor market	4.6%	4.5%	11.8%
Number of adults	Single adult	35.2%	50%	35.3%
	Two adults	64.8%	50%	64.7%
Number of children	No children	68.5%	90.9%	35.3%
	One or more	31.5%	9.1%	64.7%

Table 4
Mean intensities[a] ($n = 44$) together with standard deviation and $F(2, 129)$-values for sensory attributes of three rye breads.

Sample	*F*-value	F1	E1	E2
Odour = O				
O-Intensity	6.6**	5.6 ± 1.5a	6.7 ± 1.3b	5.9 ± 1.5a
O-Sourness	0.3	5.9 ± 1.0	5.8 ± 1.0	5.7 ± 1.2
Flavour = F				
F-Intensity	6.3**	5.0 ± 1.3a	6.0 ± 1.5b	5.9 ± 1.4b
F-Rye	18.0***	5.3 ± 1.5a	6.8 ± 1.0b	6.4 ± 1.0b
F-Brownness	65.6***	4.4 ± 1.6a	7.9 ± 1.2c	7.0 ± 1.5b
F-Sourness	2.1	5.9 ± 1.0	5.4 ± 1.0	5.5 ± 0.9
Texture = T				
T-Colour	74.1***	4.1 ± 1.2a	7.6 ± 1.4b	7.0 ± 1.5b
T-Porosity	64.3***	3.9 ± 1.4a	6.3 ± 1.3b	6.9 ± 1.2b
T-Softness	6.0**	6.4 ± 1.2a	6.8 ± 1.1ab	7.3 ± 0.9b
T-Toughness	23.9***	4.1 ± 1.2b	4.8 ± 2.0b	2.2 ± 1.2a
T-Springiness	1.4	7.0 ± 0.7	7.3 ± 0.7	7.0 ± 0.8
T-Moistness	0.1	5.9 ± 1.0	5.8 ± 1.4	5.8 ± 1.2

[a] Scale is from 0 (none) to 10 (very strong). Significant differences between rye bread samples based on Tukey and Tamhane tests are marked with letters a–c.
** $p < 0.01$.
*** $p < 0.001$.

orientations (Fig. 4). The traditional subjects rated the odour of the bread E2 significantly higher ($F(1, 157) = 6.3$, $p < 0.05$) than the control subjects. The hedonistic subjects rated the taste ($F(1, 171) = 6.2$, $p < 0.05$) and overall liking ($F(1, 170) = 6.3$, $p < 0.05$) of the bread F1 significantly lower than the control subjects, and the taste of F1 significantly lower than traditional subjects ($F(1, 115) = 4.3$, $p < 0.05$, $d = .39$). In general, the traditional subjects rated the liking of all three rye breads higher than the hedonistic

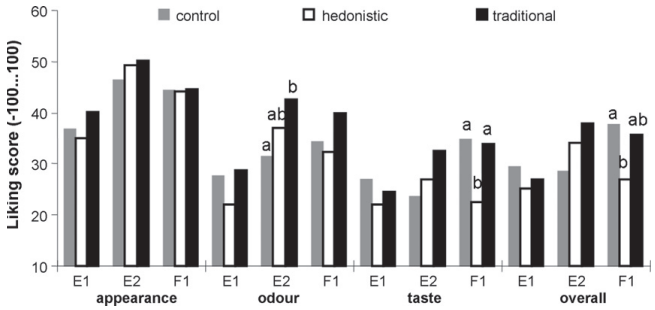

Fig. 4. Mean hedonic scores for rye bread samples (E1, E2 and F1) in the three consumer groups ($n = 224$). Letters a and b indicate that the consumer groups differ significantly ($p < 0.05$) in liking. Liking scale −100...100, where 0 indicates neither likes nor dislikes.

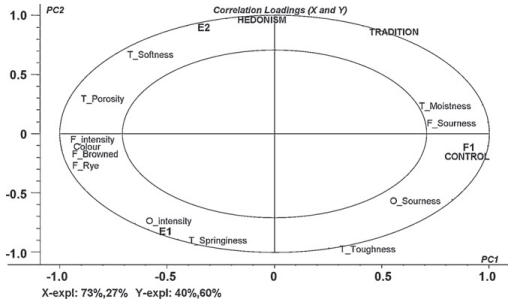

Fig. 5. External preference mapping. Correlation loading plot from PLS regression analysis of the interaction between sensory profiles of the rye breads (X) and mean hedonic scores of three consumer groups (Y). The inner and outer ellipses represent 50% and 100% of explained variance, respectively.

subject, even though the difference was significant only for the taste of F1. The hedonistic subjects liked the bread E2 most ($p < 0.05$).

The differences in the sensory profiles of rye breads were analysed using ANOVA. Table 4 shows that there were significant differences ($p < 0.01$) in overall odour and flavour intensity, rye flavour, browned flavour, softness, tough texture, and in porous texture as well as in colour between the rye breads. Bread E2, which was the most liked among the hedonistic subjects, had the softest, the most porous and the least tough texture. The bread F1, which taste was more pleasant for the traditional subjects than to the hedonistic, had the lower intensity of overall flavour as well as milder rye and browned flavour compared with the bread E2. Bread E1, which was the least liked across all the consumers, differed from the other two breads by having the most intense odour and a stronger rye-like and browned flavour.

Fig. 5 presents the regression between sensory characteristics and liking for rye breads. The PLS plot shows that 73% of the sensory characteristics explained 40% of the variation in liking by the first principal component (PC1). PC1 described the dimension of overall odour intensity, rye-like flavour, browned flavour and sourness and separates rye breads E1 and E2 from F1. The loading plot confirms that the value groups have different likings in regard to the rye bread quality and shows that hedonism value dimension correlates positively with E2 and bread softness and negatively with toughness. Traditional subjects, instead, are more approving of different types of rye bread.

The relationships between personal values and food choice motives

The descriptive statistics for the Food Choice Questionnaire and a Concern Scale are shown in Table 5. The reliabilities (Cronbach alphas) ranged from 0.70 to 0.85, which indicates good reliability.

Studying the relationship between values and food choice motives measured with the FCQ and the Concern Scale was the second interest of this study. The consumers, who were divided into three groups on the basis of their personal values, differed in their food choice motives and health concerns (Fig. 6). Hedonistic as well as traditional subjects considered sensory appeal to be a significantly ($F(2, 220) = 6.83$, $p < 0.01$) more important food choice motive for them than control subjects did. Traditional subjects considered natural content ($F(1, 115) = 6.4$, $p < 0.05$, $d = .48$), familiarity ($F(1, 114) = 9.1$, $p < 0.01$, $d = .58$), concern about food and health ($F(1, 114) = 13.4$, $p < 0.001$, $d = .69$), and ethical concern ($F(1, 114) = 5.2$, $p < 0.05$, $d = .43$) to be significantly more important food choice motives for them than hedonic subjects did. Among other food choice motives, the differences were not significant between the groups. In addition, we tested the directional differences between food choice motives by correlating the subscale scores with hedonistic and traditional value scores ($n = 117$, without control subjects). A correlation analysis (Table 6) showed that hedonism was associated significantly positively with food choice motives "mood" and "price", while "natural content" and "ethical concern" were negatively correlated with hedonism. "Health", "familiarity", "natural content", and the Concern Scale were positively correlated ($p < 0.05$) with traditional values.

To study the relationships between Schwartz's ten value types, age and food choice motives, a regression analysis was conducted over all the subjects. The importance of natural content and ethical concern about everyday food choices was related to a few value domains and age. The natural content of food had a negative relation to hedonism ($b = -.11$) and power ($b = -.10$) and a positive relation to universalism ($b = .13$) and age ($b = .20$). Ethical concern was related to the same value domains with the same directional regression coefficients: hedonism ($b = -.10$), power ($b = -.09$), universalism ($b = .12$), and age ($b = .17$). In addition, the Concern Scale was positively related to universalism ($b = .14$) as well as to age ($b = .15$) and tradition ($b = .08$). The mood and price were positively related to hedonism ($b = .08$) and ($b = .07$), respectively, and negatively to age ($b = -.09$) and ($b = -.09$). These results indicate that older consumers and consumers who are directed by the self-transcendence value "universalism" appreciate natural content and ethicality more than younger and self-enhancement value directed (power and hedonism) consumers who, in turn, appreciate mood and price more in their food choices.

Discussion

The objective of this study was to examine the relationships between values and a liking for rye bread and food choice motives. Our first finding showed that consumers' values (hedonistic vs. traditional) differed significantly from each other, and therefore we were able to discriminate subjects to hedonistic and traditional experiment groups. Similarly to our results, Kihlberg and Risvik (2007) found that the largest difference among their participants' value orientations emerged between hedonistic values "pleasure", "enjoying life" and "daring" and traditional values "respect for tradition", "devout" and "honouring of parents and elders".

Our assumption based on Allen et al. (2008) findings that the congruency between product and consumer values is likely to influence positively on taste experience was confirmed. We showed that traditional rye bread and its sensory characteristics fit better with traditional consumers' than with hedonistic consumers' values and that, therefore, traditional subjects evaluated the liking of all rye breads higher than the hedonistic subjects. However, the difference was significant only in one bread sample. Hedonistic subjects liked the bread E2 most, which had the most porous, softest and the least tough texture, over the two other bread variants. This result is in accordance with the previous result that a hedonistic consumer finds softer bread more pleasant (Kihlberg & Risvik, 2007). Puohiniemi (2002) described Finnish diner typologies and categorized hedonistic consumers as culinarists who consider food as a source of pleasure. On the basis of Puohiniemi's categorization, rye bread fits better on a traditional menu, but along with the hedonistic nuances emphasized in advertising, the consumption of rye bread is not excluded from hedonistic consumers' diets. However, interestingly and unexpectedly, the rye bread liking scores of the control subjects' differed more from the value groups than the liking scores of the value groups' from each other. This result anticipates that many other reasons than values influence consumer likings.

Our second assumption concerned the relationship between values and food choice motives. Food choice motives were

Table 5
Description of the background scales Food Choice Questionnaire and Concern Scale. Means, standard deviation and reliability (correlation, Cronbach's alpha and factor loading) are calculated over all the consumers ($n = 224$). The FCQ scale range is 1–7 and the Concern Scale range is 1–9.

	Mean	SD	Item-Total Correlation	Cronbach's Alpha if Item is Deleted	Factor loading
1. Health, alpha = 0.80					
Contains a lot of vitamins and minerals	5.23	1.25	0.66	0.75	0.68
Keeps me healthy	5.94	1.07	0.58	0.77	0.77
Is nutritious	5.83	1.07	0.52	0.78	0.70
Is high in protein	4.09	1.49	0.44	0.81	0.36
Is good for my skin/teeth/hair/nails, etc.	5.33	1.34	0.61	0.76	0.68
Is high in fiber	5.17	1.31	0.57	0.77	0.59
2. Mood, alpha = 0.81					
Helps me cope with stress	3.77	1.69	0.63	0.77	0.77
Helps me to cope with life	4.38	1.53	0.66	0.76	0.70
Helps me relax	4.06	1.38	0.45	0.77	0.78
Keeps me awake/alert	4.14	1.53	0.64	0.77	0.73
Cheers me up	5.16	1.24	0.47	0.80	0.57
Makes me feel good	5.91	1.06	0.40[a]	0.81	0.28
3. Convenience, alpha = 0.82					
Is easy to prepare	5.14	1.32	0.70	0.77	0.88
Can be cooked very simply	4.98	1.45	0.71	0.76	0.90
Takes no time to prepare	4.05	1.61	0.67	0.77	0.80
Can be bought in shops close to where I live or work	5.18	1.54	0.51	0.82	0.31
Is easily available in shops and supermarkets	5.48	1.36	0.52	0.81	0.33
4. Sensory Appeal, alpha = 0.70					
Smells nice	5.39	1.20	0.56	0.59	0.74
Looks nice	5.00	1.22	0.63	0.54	0.76
Has a pleasant texture	5.20	1.23	0.46	0.67	0.64
Tastes good	6.46	0.77	0.34[a]	0.72	0.54
5. Natural Content, alpha = 0.85					
Contains no additives	4.52	1.59	0.78	0.74	0.84
Contains natural ingredients	5.38	1.40	0.67	0.84	0.66
Contains no artificial ingredients	4.76	1.55	0.72	0.79	0.80
6. Price, alpha = 0.76					
Is not expensive	5.04	1.35	0.69	0.55	0.83
Is cheap	4.60	1.58	0.70	0.54	0.84
Is good value for money	6.04	1.06	0.43	0.83	0.61
7. Weight control, alpha = 0.84					
Is low in calories	4.64	1.48	0.72	0.76	0.89
Helps me control my weight	4.77	1.55	0.68	0.81	0.82
Is low in fat	5.14	1.52	0.72	0.77	0.80
8. Familiarity, alpha = 0.79					
Is what I usually eat	4.02	1.64	0.63	0.71	0.77
Is familiar	3.74	1.61	0.67	0.66	0.81
Is like the food I ate when I was a child	2.30	1.61	0.58	0.75	0.80
9. Ethical concern, alpha = 0.79					
Comes from countries I approve of politically	3.85	1.85	0.64	0.67	0.80
Has the country of origin clearly marked	4.55	1.87	0.58	0.75	0.65
Is packaged in an environmentally friendly way	4.61	1.60	0.64	0.69	0.79
Concern-scale, alpha = 0.85					
Getting a lot of salt in my food	5.29	2.34	0.64	0.82	0.74
Getting a lot of fat in my food	6.41	2.06	0.67	0.82	0.79
Risk for high blood pressure	4.19	2.61	0.60	0.83	0.68
Getting a lot of sugar in my food	6.39	1.95	0.59	0.83	0.70
Getting many calories	6.35	1.90	0.55	0.83	0.70
Gaining weight	6.49	2.14	0.48	0.84	0.63
Getting a lot of cholesterol in my food	5.37	2.41	0.68	0.82	0.75
Food additives in my food	5.75	2.30	0.34	0.85	0.42
Risk for coronary heart disease	5.02	2.52	0.65	0.82	0.72

[a] FCQ items with item-total correlation (r) ≤ 0.04.

measured with the Food Choice Questionnaire (Steptoe et al., 1995). This is a widely used questionnaire and it has had a good reliability (Eertmans, Victoir, Notelaers, Vansant, & Bergh, 2006). However, a few items appeared to have low item-total correlation (≤ 0.40) in this study, but the same kind of low correlation was also observed by Eertmans et al. (2006), who compared the invariance of FCQ in Canada, Belgium and Italy, and by Fotopoulos, Krystallis, Vassallo, and Pagiaslis (2009) in Greece. The number of low item-total correlations (≤ 0.40) in this study was 2 out of 36 items while it has previously been as high as 9 (Fotopoulos et al., 2009). The FCQ results in this study support the suggestion by Eertmans et al. (2006) and Prescott et al. (2002) that the FCQ items have different connotations in different cultures.

Previously, Kihlberg and Risvik (2007) and Puohiniemi (2002) have found a connection between consumers' age and their values. In agreement with their results, it was found in this study that

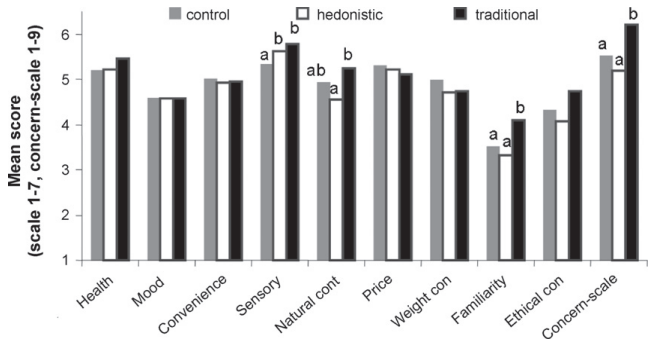

Fig. 6. Mean ratings of food choice motives in the three consumer groups (n = 224). Letters a and b indicates that the food choice motives are significantly ($p < 0.05$) different between the groups. The scale is 1–7, except for the Concern Scale, which is 1–9.

hedonistically directed consumers were significantly younger than traditionally directed ones. Furthermore, this study showed that subjects embracing opposite values also had different food choice motives. Traditional consumers (i.e. older) were more concerned about their food and health than the hedonists. This finding is in line with our assumption and the study of Bower et al. (2003), who reported that older consumers are more health concerned. In addition, the traditional subjects considered the motives "natural content", "health" and "familiarity" as important to them, which is in accordance with the traditional value structure and confirms our presumption. Pollard et al. (1998) found that people to whom natural content, ethics, health and weight control were more important food choice motives also ate more of the foods regarded as natural and healthy (e.g. brown bread). It is possible that these people were also traditionally directed on their values. We found that the hedonistic consumers underscored the motives "mood" and "price" and undervalued the motives "natural content" and "ethical concern", of which the first two are in agreement and the last two in disagreement with hedonistic self-enhancement values. However, we did not find that sensory appeal would be less important to the traditional subjects than to the hedonistic ones as we assumed. Instead, both traditional and hedonistic subjects scored sensory appeal higher than the control group. This may indicate that the value activation method appealing to value groups may have evoked traditional and hedonistic consumers to be more sensory-motivated than the control group was without the activation message. The value activation method was used according to Verplanken and Holland (2002) who stated that values do not influence behaviour by default but central values need to be activated to result in value-guided behaviour. Perhaps the food-related value activation message awoke traditional and hedonistic subjects to rate the Food Choice Questionnaire more sensory-minded than the control group did. Otherwise, the control group mostly settled between the hedonistic and traditional groups in their rates of the food choice motives as was expected because their value profile settled also between hedonism and tradition.

Table 6
Correlations between hedonism and traditionalism values and food choice motives among hedonistic and traditional subjects (n = 117).

	Hedonism	Tradition
Health	.040	.193*
Mood	.187*	.079
Convenience	.045	−.105
Sensory appeal	.070	.097
Natural content	−.268**	.280**
Price	.223*	.033
Weight control	.009	−.031
Familiarity	−.009	.198*
Ethical concern	−.212*	.152
Concern-scale	−.074	.322*

* $p < 0.05$.
** $p < 0.01$.

The regression analysis of values and food choice motives confirmed our findings above and showed that universalism values (Schwartz, 1994) correlated positively and highly with the food choice motives "natural content", "ethical concern" and the Concern Scale and, in turn, negatively with "mood" and "price". The opposite value domains, power and hedonism, had reversed correlations with food choice motives. These relationships are logical, since natural and ethical aspects of food choices are more important to consumers who appreciate nature and the environment in their everyday lives and, correspondingly, not so important to consumers who care most for their own pleasure or their wealth and authority. This result is in accordance with the studies of Brunsø et al. (2004), who found a significant positive relationship between the value type "universalism" and the food-related lifestyle (FRL) scales "organic products" (e.g. natural ingredients) and "health" (e.g. no additives). Furthermore, the organic and health-oriented FRL scales had negative relationships with the value domain "power". In addition, Dreezens et al. (2005a), Dreezens, Martijn, Tenbult, Kok, and Vries (2005b) found that subjects who represented the value type universalism had a positive attitude toward organically grown food and a negative attitude toward genetically modified food, respectively, and, in turn, the subjects with the value "power" had a positive attitude toward genetically modified food and a more negative attitude toward organic food. These results, including ours, indicate the relationship between values and food-related motivations.

However, sometimes the outcome is not so straightforward and the values and motives do not match. This may be caused by the fact that a consumer does not always behave according to personally important values but instead according to more situation-specific motives related to food products' consumption (Connors, Bisogni, Sobal, & Devine, 2001). To illustrate, in the study of Le Page, Cox, Russell, and Leppard (2005), values explained consumers' meat product choices only to a marginal extent. Similarly, this study did not show all the same connections between values and motives that have been found in various previous studies. This can be explained with different viewpoints between different cultures. For example, Brunsø et al. (2004) found that FRL scale "taste" correlated with hedonism value dimension in

Germany but with security-dimension in Spain. Subjects in Germany connected the taste with pleasure and enjoyment while the Spanish considered the taste to be related to traditional ways of cooking–keeping things as they used to be.

There are several limitations in this study. First, the breads studied were very similar in their sensory quality and the number of different breads was small. However, the samples produced significant differences in several sensory characteristics and differences in liking were found between the consumer groups. The differences in the sensory profile could have been even more significant if the training period had been longer and more intense. Thus, we were able to characterize the samples because the assessors were experienced in the sensory profiling method used and the references were available to give support for the evaluation. The difference between hedonistic and traditional consumers in hedonic testing could have been more significant if this study had been executed in a country other than Finland. Rye bread and other wholegrain food consumption in Scandinavia can be estimated to be four times larger than in the USA and the UK (Lang & Jebb, 2003). In countries where the consumption is more restricted, different values might have a greater connection to the traditional rye bread consumption and liking. Consequently, this type of study might give hints on how to make wholegrain food more attractive to different consumer groups and thus increase its consumption. This data concerned only bread and the results could have been more extensive if other products would have been considered. We also acknowledge the limitation of consumer population studied here. The gender distribution was uneven and women were over-represented. This derives from the issue that many times women are more interested in participating in this kind of survey, possibly due to their relatively stronger general concern about food and eating (Fagerli & Wandel, 1999). Also the age factor may explain some between-group differences even more than the value centrality factor, since hedonistic consumers were clearly younger than traditional ones (the control group's mean age was in between). In addition, group sizes were different, since the hedonistic and traditional value groups were smaller than the control group. However, the strength of the study is that we had a control group without value criteria and value activation, which worked as a baseline data.

In conclusion, this study demonstrated an approach to investigate the effects of consumer-related factors, such as personal values and food choice motives, together with perceived product characteristics on the liking of rye breads. This way we were able to create a model to examine the relationship between sensory and non-sensory variables to understand consumer behaviour. Hereby, we revealed significant value-dependent differences in food choice motives and likings between consumer groups. An important general implication for the food industry is the realization of the potential of using value-specific consumer groups throughout the product development and marketing planning process. Here, traditional consumers differed from the hedonistic consumers according to the concern about food and health and the importance of food choice motives "familiarity", "natural content" and "ethical concern". This is useful knowledge for marketing communication design, as it helps, for instance, healthy foods advertising for traditional consumers by using more cognitive claims (food cues related to health, disease prevention, naturalness and familiarity). Previously, it has been demonstrated that packaging and branding decisions can benefit from tests with consumer groups embracing different values, since hedonistic and traditional consumers prefer different package shapes (square vs. tube-like) and colours (red vs. yellow) differently (Kupiainen, 2008). In addition, the influence of non-sensory variables in consumer liking is of high interest for food companies. For example, in order to increase brown bread consumption among pleasure-seeking hedonistic consumers, a soft sensory texture together with mood- and price-directed product claims need to be emphasized. This study could encourage food industry to connect consumer-related factors with sensory characteristics of bread both in product development and in advertising.

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Consumers' experience of spelt porridge and sea buckthorn juice: The roles of product claims and need for cognition

Rami Paasovaara & Harri T. Luomala

Abstract

Purpose – This paper investigates how differences in message content and in need for cognition influence consumers' sensory evaluation, product attitudes and purchase intentions in terms of spelt porridge and sea buckthorn juice.

Design/methodology/approach – Quantitative research methods were used. Four taste experiments were carried out among Finnish female consumers (n=129).

Findings – Health-related product information had a positive impact on attitude towards and intention to purchase spelt porridge, and safety-related product information a positive impact on sensory experience of sea buckthorn juice. In addition, the examination of the need for cognition – effects revealed a tendency indicating that spelt porridge and sea buckthorn juice were experienced more positively among individuals high in need for cognition than among individuals low in need for cognition.

Research implications – The instrument of need for cognition is also applicable to investigating actual behavioural elements such as sensory evaluation.

Practical implications – This paper has implications for novel food marketing.

Originality/value – The findings advance understanding of the roles of subtle message differences and need for cognition in consumers' food product experiences.

Keywords Sensory evaluation, Product information, Attitudes, Need for cognition, Spelt porridge, Sea buckthorn juice

Paper type Research paper

Introduction

Understanding and managing the complex relationship between consumers and products or brands is one of the most fundamental tasks and challenges of marketing. Past research has shown the high level of dynamics involved in consumers' product experiences. There is an abundance of consumer-, product-related and contextual factors that play a role in how products/brands are experienced. To illustrate, different personality characteristics such as CVPA (centrality of visual product aesthetics) appears to moderate consumers' product experiences (e.g. a piece of furniture) (Bloch et al., 2003). Of product-related factors, Creusen and Schoormans (2005) demonstrate the crucial role product appearance has for consumers. Lastly, retail atmosphere research, for instance, offers evidence on the

role of contextual influences in consumers' product experiences. According to Baker et al. (1994), variations in different atmospheric variables affected consumers' perceptions of store merchandise.

The conventional way of measuring consumers' product experiences has included product attitudes (or sometimes product images), buying intentions and willingness to pay (Kozup et al., 2003; Skuras and Vakrou, 2002). However, the emotional and physiological aspects of consumers' product experiences have attracted research interest to a lesser extent (cf. Richins, 1997; Verlegh and Steenkamp, 1999; Shiv et al., 2005). This paper focuses on the physiological aspect of consumer product experience. It is important to advance understanding concerning the role of consumers' mental processes and states play in product experiences that are strongly influenced by physical product characteristics (e.g. bio-chemical substances in food and cosmetics), for two reasons. First, there are implications that marketing actions may cause physiological (placebo) effects in consumers' product experiences (McClure et al., 2004; Irmak et al., 2005). Second, recent research has shown that olfactory and tactile stimulation are powerful influencers of consumers' product and store experiences (see, e.g. Spangenberg et al., 2005; Peck and Childers, 2003).

One natural arena for exploring the physiological aspects of product experience is the food consumption realm, where sensory perception of food (taste) forms an essential part of the experience. This study investigates whether consumers' sensory perception of a food product is modulated by communicating different things to them prior to tasting and by differences in their levels of need for cognition. With regard to the first question, Wansink et al. (2005), for instance, have demonstrated that consumers who ate foods with evocative, descriptive menu names (such as "Succulent Italian Seafood Filet") rated it as more appealing, tasty, and caloric than those who ate regularly-named counterparts (such as "Seafood Filet"). Does this result also apply in a different communication context? In turn, to our knowledge, the need for cognition has not been related to physiological aspect of consumer product experience (e.g. sensory perception of food). Deliza and MacFie (2001) have shown that different passion fruit juice packages presented to consumers resulted in different expected sensory perception and liking of the juice among consumers with varying levels of need for cognition.

At the product level, consumers' experiences of food products that have not been paid much attention in consumer research are scrutinized. In the experimental

study to be reported, consumers' responses to two natural and healthy food products are analyzed. More specifically, porridge made from spelt grain (Triticum Spelta L.) and juice made from sea buckthorn berries (Hippophae Rhamnoides) were selected as target food products for three reasons. First, it is useful to gain knowledge concerning consumers' acceptance level of these quite unfamiliar foods and the effects of varying product information on the product experience. To illustrate, one previous study has shown that the taste of a spelt-based soup was slightly disliked among Finnish consumers, but the pleasantness ratings were improved by exposing consumers to product information (Puumalainen et al., 2002). Thus, the potential for both technology- and marketing-driven food innovations involving these raw materials is high amongst certain well-defined consumer segments throughout Europe. Second, the selected food products are linked to the issue that has lately been discussed more and more in relation to food provisioning and consumption in modern and globalizing world. Due to the food safety scandals and growing global health problems of last decades, more emphasis has been put on the development of natural and healthy foods (cf. Vandendriessche, 2008). Third, the regions that can excel in producing spelt- and sea buckthorn-based food products have the possibility of using this in building a stronger regional image and reputation that may help in developing and sustaining thriving local economies (cf. Guerrero, 2001). To illustrate, spelt coming from Garfagnana (a small area of Tuscany, Italy) has been considered a specialty food with a strong regional identity, and this area of origin has been related to high food quality expectations of consumers (Stefani et al., 2006).

On the basis of the preceding discussion, two objectives are set for this article. The first is to offer a brief review of existing literature concerning how differences in communication content and in the need for cognition influence food consumers' sensory evaluation, product attitudes and purchase intentions in order to develop theoretical expectations for the study. The second is to test empirically whether communication highlighting different food values (healthiness vs. safety) causes differences in consumers' food product (spelt porridge and sea buckthorn juice) experience as expected. The rest of the article is structured as follows. The conceptual underpinnings guiding the empirical investigation are presented next. After that the sample, method and data of the study will be introduced. The key results of an experimental study concerning the impact of food-related messages and need for cognition on consumers' food product experiences then follows. Finally, the paper is concluded by discussing the theoretical and managerial implications of the results.

Conceptual underpinnings

Product experience is a multi-faceted phenomenon including behavioral, expressive and physiological reactions as well as subjective feelings. It is the outcome of interaction between the user, the product and the context (Desmet and Hekkert, 2007). In marketing literature, the product experience is often differentiated into direct and indirect product experiences. A typical indirect product experience is represented by product description (e.g. an advertisement consisting of verbal information only), while hands-on experience (product trial) represents direct product experience (Mooy and Robben, 2002). Often, direct product experiences are more effective in guiding behaviour. For instance, Smith and Swinyard (1983) demonstrated that attitudes based on product trial predicted a snack food purchase significantly better than attitudes based on advertising.

The food product experience (FPE) is a concept that includes product perception elements such as sensory evaluation, expectations, product attitudes, product images, purchase intentions, willingness to pay and food choice (e.g. Lehtola et al., 2008). Several consumer-, product- and context-related factors, for instance personal values (e.g. Kihlberg and Risvik, 2007), demographics and product information (e.g. Bower et al., 2003), as well as social and situational influences (e.g. King et al., 2004) determine the outcome of the FPE (and its elements). Next, we take a closer look on how one product communication- and one consumer-related variable influence the FPE.

The effect of message content on food product experience

In modern food markets, the majority of food products are packed, so external cues such as advertisements (e.g. product characteristics, price and brand) and package information (e.g nutrition content and design) are usually necessary for consumers in their evaluation of the physical quality of the food. As consumers occasionally face novel, unfamiliar and unpacked foods, the only available information for making consumption decisions are perhaps the sensory attributes (appearance, smell and taste). If relevant and favourable information is missing, the consumer will not likely to try (eat, buy) such a food product. Therefore, food-related messages, and especially message content (what is said), are important factors in informing and persuading food consumers, and hence they are part of consumers' FPE. Next, we highlight these arguments through a brief literature review.

Several food studies indicate that relatively small changes in message content can alter the FPEs among consumers. For instance Levin and Gaeth (1988) demonstrated that the provision of information about the fat content of ground beef as either 75% lean or 25% fat resulted in different sensory and preference responses. Brinberg et al. (2000) found that tailored nutrition messages aimed at target groups, as compared to general (e.g. food pyramid) messages for a broad audience, resulted in better food knowledge and dietary changes. In addition, when Jaeger and MacFie (2001) studied the role of presentation format, they found that the advertisements communicating both pictorial and textual information of a new red apple variety resulted in stronger expectations than those communicating textual only information.

Furthermore, many studies indicate that favourable food product information positively influences consumers' FPE. For instance, Kozup et al. (2003) showed that exposure to favourable nutrition information and health claims resulted in more favourable product attitudes and purchase intentions. Stein et al. (2003) found that health-related information increased the acceptability of, or willingness to consume, a bitter beverage. In a wine tasting study, participants who received positive information before tasting liked the wine significantly more than participants who received negative information (Siegrist and Cousin, 2009). This result also suggests that unfavourable information has a probable negative influence on the FPE. Verbeke and Viaene (2001) mentioned that consumers who were exposed to mass media publicity on fresh meat issues during the 1995-1998 period had significantly decreased their consumption of meat due to perceiving beef negatively in terms of health effects, trustworthiness and safety.

According to Luomala et al. (2007), the associations consumers attach to a food product are a synthesis of the associations related to its raw material and to the type of food that is produced from this raw material (the so-called carrier). In the present research context, the spelt-grain and sea buckthorn-berry represent raw materials and the porridge and juice serve as carriers, respectively. Depending on the particular food product either one of these associative components can predominate over the other (Luomala et al., 2007). The distinction between primary and secondary associations can be made. In his influential conceptualization of customer-based brand equity, Keller (1993) recognizes the role of association strength. Those few brand/product associations that consumers relatively easily (even automatically or unconsciously) retrieve from memory can be referred to primary or top-of-mind associations (Woodside and Thelen, 1996). The brand/product associations that are weaker do not self-evidently come to consumers'

mind unsolicitedly, but may require more conscious effort or outside cues to be retrieved from memory: they are secondary associations.

The core content of the food product association is chiefly determined by the primary associative component. However, the content of the secondary associative component can to some extent change the meaning of the primary association. Thus, each food product has a unique configuration of primary and secondary associations that are linked to how consumers perceive it (cf. Woodside and Thelen, 1996).

Another important distinction that can be made as regards to associations concerns their relatedness to product: associations can be either direct or indirect (Keller, 1993). In the context of the present study, the source of direct associations is porridge and juice while the source of indirect associations is spelt-grain and sea buckthorn berry. Typically, indirect associations are linked to producer, country-of-origin and distribution channel (Keller, 1993). These factors influence the content of indirect associations that pertain to raw materials, such as spelt-grain and sea buckthorn berry, or food products.

The basic tenet for forming expectations concerning how messages stressing safety and healthiness affect the FPE for spelt porridge and sea buckthorn juice is that (in Finland) in the former case the primary associative component relates to the carrier, whereas in the latter case the primary associative component lies in the raw material. Table 1 depicts the key differences in the association structure for spelt porridge and sea buckthorn juice.

Table 1. The key differences in the association structure for spelt porridge and sea buckthorn juice.

	Primary association	Secondary association
Direct association (carrier)	Porridge → healthiness +	Juice → healthiness +/–
Indirect association (raw material)	Sea buckthorn berry → domestic and natural origin → safety +	Spelt-grain → unfamiliarity → safety –

Porridge is a whole-grain product, and generally whole-grain foods are considered as healthy mainly because of their source of dietary fibre and from the rec-

ommendations of health professionals (Marquart et al., 2006) (see Table 1). This carrier is the primary associative component in the case of spelt porridge. On the other hand, the secondary associative component, spelt (raw material), is quite unfamiliar to Finnish consumers (Lehtola and Luomala, 2005), and usually unfamiliar foods are more negatively related to perceived safety than familiar foods, i.e. novel foods could be potentially harmful to eat (Lähteenmäki and Arvola, 2001; Pliner et al., 1993).

In the case of the sea buckthorn berry (see Table 1), the primary associative component is the raw material, not the carrier. Sea buckthorn berry is more commonly known to Finnish consumers and is strongly associated with domestic and natural origin (Lehtola and Luomala, 2005). These associations typically signal safety to consumers (Roitner-Schobesberger et al., 2008; Juric and Worsley, 1998). The secondary associative component is the carrier, that is, juice. Consumers mentally connect juices, especially orange juice and also sea buckthorn juice, with health (Sorensen and Bogue, 2003; Lehtola and Luomala, 2005). However, people have started to acknowledge that sugary juices are relatively high in calories and therefore may be fattening (Carels et al., 2007). Thus, juices are not necessarily any more uniformly associated with good health effects (the reason for "+/-" in Table 1).

Spangenberg et al. (2005) showed that consumers' store and merchandise evaluations were more favourable when the Christmas scent was present with Christmas music, but when it was present with non-Christmas music, it lowered the evaluations. Applying this congruency logic to this research context, it can be argued that safety and healthiness messages are effective in influencing consumers' FPE for spelt porridge and sea buckthorn juice if they are congruent with the primary associative component of the carrier – raw material combination. Thus, two expectations are formed for this study:

Expectation 1: In the case of spelt porridge, a message stressing its healthiness will be more effective in boosting the FPE than a message stressing safety.

Expectation 2: In the case of sea buckthorn juice, a message stressing its safety will be more effective in boosting the FPE than a message stressing healthiness.

The effect of need for cognition on food product experience

Differences in the FPE may depend on the individual's personality. Some consumers are seeking variety and are motivated to try new food products, while

some are neophobic and prefer familiar foods (Lähteenmäki and Arvola, 2001). Similarly, some consumers are highly interested in food in general and are willing to be involved in different activities, namely food acquisition, preparation, cooking, eating and disposal (Bell and Marshall, 2003), while consumers with low food involvement may typically just want to satisfy their hunger rapidly by purchasing junk food.

As consumers are exposed to food-related communication, differences may emerge in how individuals respond to and behave after that information. For instance, Solheim and Lawless (1996) found that individuals low in body consciousness (personality trait concerning the ability to recognize body sensations and detect variations in the sensory properties of foods) were influenced more by information about fat content and price than by sensory experience, when they rated the purchase probability of cheeses after tasting. In contrast, among individuals high in body consciousness the sensory experience had more effect on the purchase intention ratings than the information provided.

Also the consumer's ability to process information may influence the FPE. One prominent instrument for measuring individual differences in the ability to process information has been the need for cognition (NFC), which refers to an individual's tendency to engage in and enjoy effortful cognitive endeavours (Cacioppo and Petty, 1982). In general, individuals high in need for cognition (HNC) tend to seek, acquire, think about and reflect back on information and are likely to have a more positive attitude toward problem solving than individuals low in need for cognition (LNC) (Cacioppo et al., 1996). Consequently, HNC-consumers are likely to process information from advertisements more thoroughly than LNC-consumers (cf. Peltier and Schibrowsky, 1994). Moreover, HNC-consumers tend to base their attitudes on their responses to issue-relevant information (e.g. message arguments, brand features), whereas LNC-consumers are more likely to use simple peripheral cues such as music, emotional elements or promotional signals to guide their attitudes (Cacioppo et al., 1996, p. 243; Geuens and De Pelsmacker, 1998; Mantel and Kardes, 1999) and purchase intentions (Chatterjee et al., 2002; Inman et al., 1990; Ruiz and Sicilia, 2004).

Only a few studies have investigated the link between the need for cognition and elements of the FPE. For instance, Deliza and MacFie (2001) showed that different passion-fruit juice packages presented to 94 British consumers resulted in different expected sensory perception and liking of the juice among individuals

varying in NFC. LNC-subjects were affected more by the picture in inferring the expected sweetness, whereas HNC-subjects evaluated the product to be more natural and purer, when a large amount of product attribute information was given, and less natural and less pure under the no information condition. In addition, according to Jaeger and MacFie (2001), a large amount of information seems to affect HNC-consumers' sensory expectation: both pictorial (appearance of an apple) and textual product information acted as message arguments for HNC-consumers and resulted in lower expected ratings of juiciness and liking, and purchase intentions, while LNC-consumers' expectations were not affected strongly by pictorial information.

There is some evidence in the literature suggesting that HNC-consumers more easily adopt innovative products than LNC-consumers (Venkatraman and Price, 1990; Hoffmann and Soyez, 2009). Thus, since spelt porridge represents a food novelty on the Finnish food market, it seems reasonable to expect that its FPE is more positive among HNC-consumers than among LNC-consumers. The strong bitter taste is a hallmark of the sensory experience of sea buckthorn juice. After studying consumers' taste experiences with yogurts varying in terms of their sourness and sweetness, Paasovaara et al. (2007) tentatively concluded that HNC-consumers seemed to prefer sour yogurts, while LNC-consumers preferred sweet yogurts. Consequently, the FPE for sea buckthorn juice can be expected to be more favorable among HNC-consumers than among LNC-consumers. In summary, the preceding discussion leads to the following third expectation:

Expectation 3: The FPE for spelt porridge and sea buckthorn juice is more positive among HNC-consumers than among LNC-consumers.

Methodology

To analyse the influences of food-related messages and need for cognition on sensory evaluation, product attitudes and purchase intention, an experimental study was carried out. 129 volunteer Finnish women participated in the study in four experimental groups (Table 2). The experiments were conducted in three small cities in the region of Northern Ostrobothnia, Finland. The participants were recruited from the pools of painting course attendees (groups 1 and 2), residents living close to a local hotel (group 3) and students and employees of a health care institute (group 4). The painting course teacher and the personnel of the hotel and the health care institute helped in recruiting the participants for the

experiments. They informed the interested consumers the time and place of the taste tests. They also provided suitable test conditions (a classroom and a conference room) for the experiments. It was decided to recruit female consumers only, since women are generally more involved in food-related activities (Bell and Marshall, 2003), concerned about eating and motivated to eat healthily than men (e.g. Steptoe et al., 1995; Fagerli and Wandel, 1999; Roininen et al., 2001). Thus, it was assumed that female participants represent an especially relevant target group for consuming the food products evaluated in the study.

In the experiments two non-branded, natural and healthy food products with a high nutrition value (e.g. rich in vitamins) were tested. More specifically, two test groups evaluated spelt porridge (Triticum Spelta L.) and two test groups sea buckthorn juice (Hippophae Rhamnoides). Each group was exposed to a message purported to influence consumers' food evaluations by activating associations related to the target products. The messages, which were printed on A4-sized paper, were formed using textual safety- and health-related claims and pictures of spelt porridge and sea buckthorn juice. Consequently, the message was constructed for each group by altering the message content using 2x2 – design (product: spelt porridge vs. sea buckthorn juice; food value: safety vs. health). The idea of using safety and health as food values in the messages came from a qualitative pilot study, in which consumers related most strongly these values to locally grown and produced natural foods such as spelt and sea buckthorn (Lehtola and Luomala, 2005). The messages are presented in Appendix 1.

Table 2. Background information of participants in the experiment groups.

Group	**1.** Spelt safety	**2.** Spelt health	**3.** Buckthorn safety	**4.** Buckthorn health	Total
Size (n)	33	34	31	31	129
Mean age	53	55	41	39	47
Education					
Low (%)	51	52	52	47	47
Medium (%)	39	36	39	44	41
High (%)	9	12	10	6	12
Familiarity					
Unknown (%)	39	28			
have heard (%)	58	59	45	68	
have tried (%)	3	13	35	19	
User (%)			19	13	

Education: "low"=comprehensive and/or vocational school, "medium"=high school or institute graduate, "high"=college, polytechnic or university degree

The experimental procedures were conducted as follows. The participants were recruited to come and taste a new food product and to fill in a food research questionnaire. Every group member entered the research room (e.g. a class-room) at the same time. First, the participants were given the instructions and advised to give their own and honest answers to the questions. Next, the participants were asked to process the message provided. After a short familiarization with the message the participants were delivered either a small, constant sample of warm spelt porridge (coarsely ground spelt grain simmered in water, only salt added) or cooled sea buckthorn juice (10% pure sea buckthorn concentrate, 90% water) in transparent plastic cups for tasting. After that they were allowed to start reading and filling in the questionnaire.

In the questionnaire the participants were asked to evaluate the sensory characteristics of either spelt porridge or buckthorn juice (appearance, odour, flavour, texture and overall) using a nine-point Likert scale from 'extremely unpleasant' (1) to 'extremely pleasant' (9). After that they indicated their attitudes toward the product (quality, liking, satisfaction, appreciation) and purchase intention (likelihood of buying and likelihood of recommending to others) on a five-point scale from 'totally agree' to 'totally disagree'. They also responded to demographic background questions and answered the statements of 18-item Need for Cognition Scale (Cacioppo and Petty, 1982). The NFC-responses were collected on a nine-point Likert scale from 'totally disagree' (-4) to 'totally agree' (4), which results in theoretical range of –72 to 72. The NFC data was divided approximately into three equal sized parts (see Jaeger and MacFie, 2001) within both the spelt and buckthorn groups: the lowest scoring subjects formed the low NFC group (LNC) and the highest scoring subjects the high NFC group (HNC). The middle NFC group was not considered further. In the spelt-groups the values of low need for cognition varied as follows: LNC=[-28…9], mean –6 (n=21), and HNC= [32…63], mean 47 (n=20). In the buckthorn-groups the respective numbers were: LNC=[-27…8], mean –5 (n=20), and HNC=[38…63], mean 50 (n=20). The data was analysed with SPSS 16.0 using independent sample t-test and Mann-Whitney U-test.

Results

The effect of safety and health messages on the evaluations of spelt porridge and sea buckthorn juice

After exposure to a message that was tailored for each of the four experimental groups, the participants evaluated the sensory characteristics of either spelt por-

ridge or sea buckthorn juice and responded to the statements reflecting the product attitudes and purchase intentions. Figure 1 presents the mean scores for the evaluations of the different experimental groups consumer groups completed. The internal consistencies (reliabilities presented by Cronbach alfa) for the measured items in the spelt groups (sensory evaluation: 5 items, α =.879; product attitude: 4 items, α =.721; and purchase intention: 2 items, α =.816) and in the sea buckthorn groups (sensory evaluation α =.809; product attitude α =.734; and purchase intention α =.734) were satisfactory. In general, both products were experienced slightly positively. The sensory attributes of both spelt porridge and sea buckthorn juice were overall rated over 6, which indicates a quite pleasant liking of the product. The product attitude measures were above the neutral (3) that expresses acceptance of these products. However, the purchase intentions were lower than attitudes toward the products, indicating that spelt porridge and sea buckthorn juice were not very popular product options in terms of consumption after the experiment.

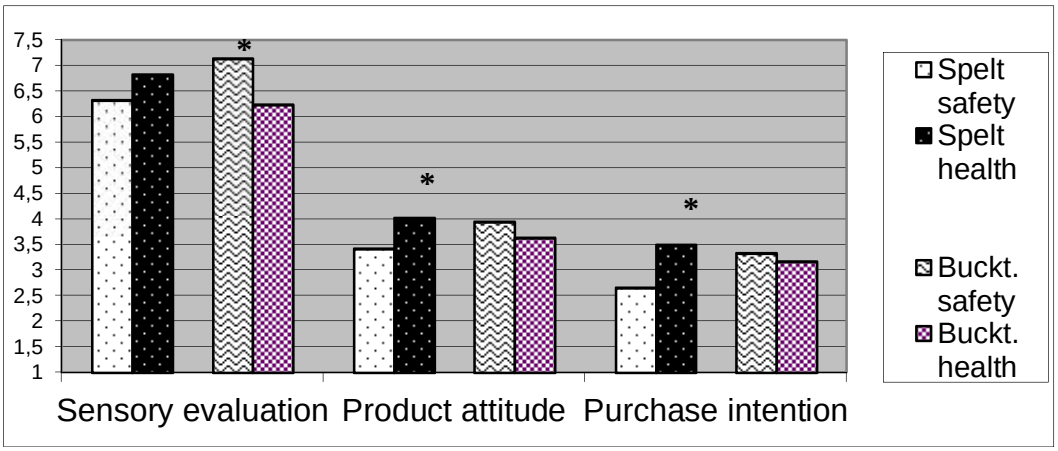

Figure 1. Mean scores of consumer evaluations in spelt and sea buckthorn groups. Sensory evaluation: Likert 1-9 where 1=extremely unpleasant and 9=extremely pleasant; Product attitude and Purchase intention: Likert 1-5 where 1=I totally disagree and 5=I totally agree. Significant differences (p<.01) marked by *.

The analysis of the impact of message information on product evaluations revealed logical tendencies and some statistically significant differences among elements of the FPE. First of all, in terms of the sensory perception of spelt porridge, the spelt group that was exposed to the health-related message rated spelt porridge as slightly more pleasant (M=6.82) than the group dealing with the safe-

ty-related message (M=6.32, t(62)=1.57, ns.), but the difference was not statistically significant. Secondly, the spelt-health -group had also a more positive attitude toward the product (M=4.02) than the spelt-safety -group (M=3.42, t(57)=2.97, p<.01). Thirdly, the purchase intention was also stronger in the spelt-health –group (M=3.50 vs. M=2.66, t(62)=3.17, p<.01). In accordance with the first theoretical expectation, the message stressing healthiness seemed to be more effective in boosting the product experience of spelt porridge than the message stressing safety.

In the sea buckthorn groups, sensory perceptions were higher in the group exposed to a safety-related message (M=7.13) than in the group dealing with a health-related message (M=6.24, t(58)=2.93, p<.01). No statistically significant differences concerning product attitude toward and purchase intention of sea buckthorn juice were found. The product attitude in the buckthorn-safety –group was still slightly more favourable (M=3.94) than in the buckthorn-health –group (M=3.63, t(58)=1.42, ns.). The means of purchase intention in the two groups were M=3.33 and M=3.17, respectively (t(56)=.53, ns.). Thus, our second theoretical expectation suggesting that a message stressing safety will be more effective in boosting the product experience of sea buckthorn juice than a message stressing healthiness, was partially supported on the behalf of sensory experience.

The role of need for cognition in spelt porridge and sea buckthorn juice evaluations

To analyse the effects of need for cognition on the participants' FPE, they were first pooled into two groups. In other words, the two spelt groups and the two sea buckthorn groups were merged to form one larger spelt-group and one larger sea buckthorn-group, so that the message effects could be nullified and statistical comparisons between the LNC- and HNC-individuals were possible. The results are displayed in Figure 2. Generally, the mean scores between the LNC- and the HNC-participants in terms of sensory evaluation, product attitudes and purchase intentions reflect the effects of a clear trend. In the case of spelt porridge, the HNC-participants evaluated the sensory characteristics more positively (M=6.91) than the LNC-participants (M=5.98, Z=1.90, p=.058), but it should be noticed that this difference was only marginally significant. Although the product attitude and purchase intention were not significantly different between the two NFC-groups, they still were slightly more favorable among the HNC-participants (attitude: Mhigh=3.75 vs. Mlow=3.27, Z=1.46, ns.; intention: Mhigh=3.11 vs. Mlow=2.63, Z=1.27, ns.).

With regard to sea buckthorn juice, the HNC-participants evaluated the sensory characteristics slightly more positively (M=6.68) than did the LNC-participants (M=6.36, Z=1.15, ns.), but the difference was too small to be statistically significant. However, product attitude and purchase intention were significantly more favorable among the HNC-participants (attitude: Mhigh=3.89 vs. Mlow=3.39, Z=2.12, p<.05; intention: Mhigh=3.44 vs. Mlow=2.71, Z=2.18, p<.05).

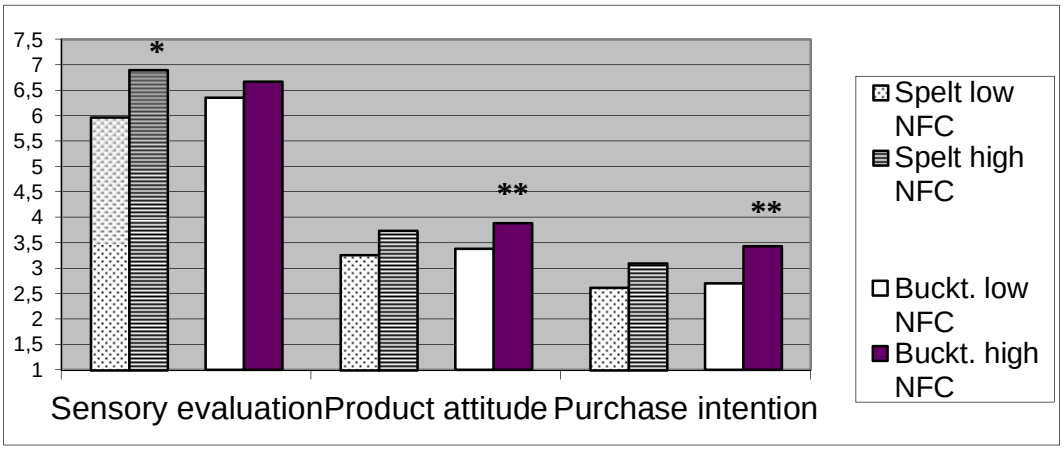

Figure 2. Mean scores of product evaluations among consumers low and high in need for cognition. Sensory evaluation: Likert 1–9 where 1= extremely unpleasant and 9=extremely pleasant; Product attitude and Purchase intention: Likert 1-5 where 1=I totally disagree and 5=I totally agree. Significant differences ($p<0.10$) marked by * and ** ($p<0.05$).

In conclusion, consumers' sensory perception ratings of spelt porridge showed a positive marginal association with high levels of need for cognition. In terms of sea buckthorn juice, high need for cognition was associated with more positive product attitude and purchase intention. Also the results concerning the sensory evaluation of sea buckthorn juice as well as product attitude and purchase intention of spelt porridge showed a tendency of being more favourable among the HNC-participants, but these differences were not statistically significant. Thus, the third theoretical expectation is partially supported, since two thirds of the product experience elements of sea buckthorn juice and one third of the spelt porridge evaluations (with a marginal significance level, though) were more positive among the HNC-participants than among the LNC-participants.

Discussion and conclusions

This study examined the roles of message content and need for cognition in consumers' experience (elements: sensory evaluation, product attitudes and purchase intentions) of spelt porridge and sea buckthorn juice. Our results indicate that both message content and need for cognition were factors that influenced some elements of consumers' food product experience. First of all, attitude towards and intention to purchase spelt porridge were more positive when health-related product information, in comparison to information emphasizing safety, was provided. Secondly, the sensory experience of sea buckthorn juice was more positive when safety-related product information, in comparison to information stressing healthiness, was provided. Thirdly, spelt porridge and sea buckthorn juice were to some extent experienced more positively among individuals high in need for cognition than among those low in need for cognition.

The positive effect of the health-stressing message on the participants' attitude toward and purchase intention of spelt porridge probably stems from expectations emerging from product associations. The consumption of whole-grain/fibre-rich products (e.g. porridge) may be so strongly associated with a healthy and balanced diet among Finnish consumers (Arvola et al., 2007) that claims highlighting product safety are less effective in forming positive expectations toward spelt porridge. In general, health claims emphasizing fibre richness (in applicable carriers) are shown to improve acceptance of food products. In a study by Verbeke et al. (2009), consumers who were exposed to product-related nutrition and health claims preferred fibre-enriched cereals to calcium-enriched fruit juice and omega-3 enriched spread.

The positive effect of the safety stressing message on the participants' sensory experience of sea buckthorn juice can probably be explained by taste expectations. As the message was emphasizing the purity and naturalness of the juice, this may be primarily associated with a delicious taste in consumers' minds, and that can finally improve sensory experience, in comparison to the impact of the health message. This presumption is in line with the study of Roininen et al. (2006), in which an organically produced meat product was associated with purity and good taste. This is further supported by the study of Caporale and Monteleone (2004), who found that information about organic production methods had a positive influence on the liking for beer. In addition, providing health information may not help to increase the liking of a juice product. In a study by Sabbe et al.

(2009), a health claim had only a weak influence on the sensory experience of acai-fruit juice.

Could familiarity with the products explain differences in consumers' food evaluations rather than the message content? Fischer and Frewer (2009) have argued that consumers' risk and especially benefit perceptions of food products may depend on familiarity. We found that the level of familiarity with the products inside the experiment groups (see Table 2) was not equal. The spelt group that was exposed to the health message included more consumers (13%) who had tried spelt products earlier as compared to the spelt group exposed to the safety message (3%). Similarly, the sea buckthorn group exposed to the safety message included more consumers (54%) who had tried earlier or are users of sea buckthorn products as compared to the sea buckthorn group exposed to the health message (32%). We conducted a statistical analysis to reveal the effect of familiarity. Although we removed participants, who had tried spelt products, from the data, the spelt porridge attitude ($p=.048$) and purchase intention ($p=.019$) were still more positive in the group exposed to the health message. When we compared the FPEs between the sea buckthorn groups, the participants who had only a little knowledge (had heard) of sea buckhorn rated sensory characteristics higher in the group exposed to the safety message ($M_{safety}=6.94$ vs. $M_{health}=6.16$, $p<.05$). In addition, among the participants who had tried sea buckthorn products or were users of them, sensory evaluation did not produce a statistically significant difference but was still higher in the group exposed to the safety message ($M_{safety}=7.29$ vs. $M_{health}=6.42$, ns.). These results were similar to the message effect comparisons indicating that familiarity was not a factor influencing the FPE in this study.

In terms of need for cognition, the sensory experience of spelt porridge was rated marginally higher by consumers high in need for cognition. In addition, product attitude and purchase intention of sea buckthorn juice were more positive among consumers high in need for cognition than among consumers low in need for cognition. Mooy and Robben (2002) have stated that "novel products or novel product characteristics may induce curiosity and the motivation to investigate the product and subsequently process product-related information". Thus, curiosity and motivation may have been stronger among the HNC-participants. This is supported by Cacioppo et al. (1996), who reported that educational level and curiosity are positively related to the need for cognition. In our sample, the participants who were highly educated were also at the higher end of the continuum of need

for cognition scale (high education: NFC mean 34, all sample: NFC mean 22). In conclusion, consumers high in need for cognition seem to experience unfamiliar or novel food products more positively than consumers low in need for cognition. This, of course, needs further research, but it still indicates that consumers high in need for cognition, as compared with the LNC-consumers, may take certain food consumption issues more precisely into account when they evaluate, compare and choose foods.

Some limitations need to be considered in interpreting the results. First, the use of a control group (no food-related information) and analysis of participants' attitudes toward the presented messages might have helped in investigating the actual message effects on evaluations of the participants. Second, male consumers did not participate in this study, so our results represent only Finnish female consumers' experiences of two food products. Third, a larger sample size might have helped in producing clearer effects on consumer evaluations, although we were still able to reveal significant differences between consumers' food product experiences even with relatively small data.

A few implications arise from our results. First of all, health information stressing fibre intake still seems to be effective in persuading consumers to try novel whole-grain products, such as spelt porridge, although health claims have been massively used in food product promotion in recent years. Secondly, providing health information in the case of novel fruit/berry juice products may not automatically increase the acceptance or consumption of such products. It is possible that (visual) information about organic production, the purity and naturalness of juices are more effective promotional cues lowering consumers' perceived risks of consuming and increasing their willingness to try unfamiliar juices. Thirdly, individuals high in need for cognition seem to experience natural and healthy foods, such as products made of spelt or sea buckthorn, more positively, so they might be more probable purchasers of these kinds of novel niche-market foods than individuals low in need for cognition. Last, understanding the associations consumers relate to carriers on the one hand and to raw materials and production methods on the other of new food products and taking into account individual differences in product perception give useful input for product development and marketing (Kupiainen et al. 2008).

For further research, it would be useful to examine the relationships between the need for cognition, food promoting messages and sensory perception in more depth. For instance, in order to develop understanding of the effect of need for

cognition on consumers' food product experience, different kinds of food products and communication design procedures should be investigated. Perceptions of totally novel and unfamiliar products could be compared with perceptions of popular and familiar products, sensory evaluations between foods with strong and mild tastes could be examined, and the effect of subtle differences between positively framed food messages could be analysed among individuals varying in need for cognition. Thus, our novel suggestion is that the instrument of need for cognition is not only applicable to examining mental phenomena (e.g. expectations, attitudes, intentions) but also for investigating actual behavioural elements such as sensory evaluation and food choice.

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Appendix. Messages in the experimental groups.

1. group (spelt-safety): *"As I strive for a safe life, spelt porridge can help me, because it is made from pure natural products grown near-by."*

2. group (spelt-health): *"As I strive for a healthy life, spelt porridge can help me, because its vitamins and fibres keep my stomach in balance and my whole body in shape."*

3. group (buck-thorn-safety): *"As I strive for a safe life, sea buckthorn juice can help me, because it is made from pure natural products grown near-by."*

4. group (buck-thorn-health): *"As I strive for a healthy life, sea buckthorn juice can help me, because its vitamins and "good" fatty acids make me feel good."*

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Understanding consumers' brand-induced food taste perception: A comparison of 'brand familiarity' – and 'consumer value – brand symbolism (in)congruity' – accounts

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ABSTRACT

Past research has shown that familiar brands can boost consumers' food taste experiences. On the other hand, more recent evidence suggests that the (in)congruity between consumer values and brand symbolism can affect the food taste perception. This study is the first one to integrate these two accounts into one single conceptual framework and to empirically evaluate their relative roles in explaining consumers' brand-induced taste perception. Two experiments involving taste trials (blind vs brand-cued sensory evaluation) were conducted. The first experiment analysed the brand familiarity effect, whereas the second experiment addressed also the taste perception of yogurts with differing brand symbolism amongst food consumers with distinct value orientations to find support for the (in)congruity effects. This research implies that congruity is not responsible for enhancing consumers' taste perception beyond the level that is produced by the brand familiarity. In contrast, the incongruity effect appears capable of neutralising the brand familiarity effect. Therefore, these two explanations may operate independently. More generally, this study speaks for the importance of incorporating consumer value – brand symbolism *in*congruity mechanism into food consumption studies; even owners' of strong food brands cannot trust the ability of their brands to boost a consumer's taste experience if there is no correspondence between his or her central values and brand symbolism. Thus, an objectively better taste is not necessarily decisive; satisfactory sensory quality can suffice if it is coupled with imaginative and daring brand marketing that delivers unique emotional and functional benefits for well-defined food consumer target segments.

INTRODUCTION

It is known from past research that strong brands can elevate consumers' taste perceptions of food products. For example, in their classical study, Allison and Uhl (1964) found that consumers' identification of a familiar beer brand increased significantly taste perception compared with the blind evaluation condition. In the study of Robinson *et al.* (2007), young children tasted identical foods and drinks either in packaging from McDonald's or from unbranded packaging. Children preferred the taste of foods and drinks they believed were from McDonald's. Another major food brand player, Coca-Cola, made the famous marketing blunder in the 1980s by changing the taste formulation of its flagship product. The 'New Coke' was preferred in blind tests, but it still caused much negative emotions and was thus rejected by many consumers on the marketplace. It appears that Coca-Cola underestimated the level of emotional attachment consumers may have with familiar original food brands (see e.g. Cova and Pace, 2006). In the Coca-Cola case, this led to a situation where the objectively better taste (New Coke) was subjectively experienced as worse by consumers than the objectively poorer taste (original Coke) presumably because the well-established and stable consumer–brand relationship had been transgressed by the Coca-Cola company itself. In fact, McClure *et al.* (2004) have even shown that the exposure to the Coca-Cola brand stimulates the brain activity of US consumers.

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Conventionally, it is thought that consumers tend to buy familiar brands out of habit or because of loyalty, and they are likely willing to pay more for a branded product than for a non-branded generic product, if they see favourable consequences of brand use (Solomon, 2007). In terms of packaged food products, the recognition of a familiar brand name or logo helps consumers to evaluate quality attributes and makes consumption decisions easier.

On the other hand, there has recently been a surge of interest directed at the interplay between consumer values and taste perception (Kihlberg and Risvik, 2007). An especially relevant study from this research genre for the present investigation is the one by Allen *et al.* (2008). They argued that culture attaches symbolic meanings (e.g. human values, norms, social categories) to foods and beverages and that the fit between these symbolic meanings and consumers' own personal values determines how positively or negatively the taste or aroma is evaluated. In extensive pilot tests, a vegetarian sausage roll resembling a real meat sausage roll by its taste was identified. In comparison with vegetarian food, meat symbolises social power to a greater extent. In their first study, Allen *et al.* (2008) showed that those consumers who embrace low social power values evaluate the taste of the roll better (and have more favourable product attitude and purchase intention) when they were informed that it was a vegetarian roll than when they were informed that it was a beef roll. In reality, it was randomly determined whether they received a vegetarian or beef roll for tasting. A similar kind of study was conducted for branded cola soft drinks too. According to the pilot studies, the taste of the Pepsi and Woolworth colas was

similar, but the symbolism pertaining to excitement and enjoyment was much more strongly related to Pepsi than to Woolworth. It was uncovered that consumers who valued exciting life and enjoying life reported that the drink tasted better (their product attitudes and buying intentions were also more positive) when they believed they had tasted Pepsi than when they believed that they had tasted Woolworth.

The first, the brand familiarity explanation, is older, rougher and more general than the second, the consumer value–brand symbolism (in)congruity explanation. The latter explanation recognises that both the qualities of the consumer and brand can in interaction influence whether consumers' taste perception of a food product is changed or not in the blind versus brand-cued evaluation. Bearing in mind these points of departure, we seek to contribute to food consumption research in four ways. First, we propose and test a novel framework combining these two explanations for consumers' brand-induced food taste perception. Second, Allen *et al.* (2008) did not address the potential role of brand familiarity in their cola study, even though the fact that the cola informed to be Woolworth was more negatively evaluated in the case of congruity than the cola informed to be Pepsi in the case of incongruity implies that the brand familiarity mechanism might have been in operation. Hence, our study extends the important work of Allen *et al.* (2008) by explicitly paying attention to brand familiarity effects together with the (in)congruity effects. Third, only few studies have focused on the relationship between brand equity and grocery products (Anselmsson *et al.*, 2007, p. 402). Fourth, we also advance the more general understanding of the physiological aspects of product experiences that have started to fascinate academics recently (Peck and Childers, 2003; Shiv *et al.*, 2005).

Three objectives are set for the study: first, based on the relevant literature, to introduce the brand familiarity and consumer value–brand symbolism (in)congruity explanations for consumers' brand-induced food taste perception; second, to present a novel theoretical framework that integrates these explanations and generates testable research hypotheses; third, to tentatively test the research hypotheses in two experiments, where the taste perception of drinkable yogurts with differing brand symbolism amongst food consumers with distinct value orientations is analysed. These objectives also give structure to the rest of the article.

THE BRAND FAMILIARITY EXPLANATION FOR CONSUMERS' BRAND-INDUCED TASTE PERCEPTION

Branding plays an important role in consumers' appreciation of food (Jaeger, 2006). For instance, consumers are willing to pay price premium for a branded food product, if it can offer added value for them (e.g. high quality, easily recognisable, positive associations and experiences, unique features), in comparison with the brands that cannot offer such added value (e.g. Anselmsson *et al.*, 2007; Krystallis and Chryssohoidis, 2005; Verdurme and Viaene, 2003). Further, consumers seem to appreciate familiar (well-known, strong) brands, when making their food purchases. Amongst various food product categories, familiar brands have been associated with stronger purchase intentions (e.g. Ares *et al.*, 2010; Bower *et al.*, 2003; Carneiro *et al.*, 2005; Deliza and MacFie, 2001), choice preferences (e.g. Goodman, 2009; Hoyer and Brown, 1990) and purchase loyalty (e.g. Arnade *et al.*, 2008; Esch *et al.*, 2006; Espejel *et al.*, 2007).

Thus, there is direct evidence supporting the role of food brand familiarity in influencing consumers' product attitudes and purchase intentions. For instance, one of the consumers' key self-stated reasons for choosing particular yogurts, spreads, juices and ice cream is brand familiarity (Urala and Lähteenmäki, 2003). Ares *et al.* (2010) showed not only that brand is an important factor in consumers' yogurt choices but also that as brand familiarity decreases (domestic familiar brand vs foreign familiar brand vs domestic unfamiliar brand), the impact it has on choice decreases as well. Similarly, in the soybean study of Carneiro *et al.* (2005, p. 281), 'consumers attributed a higher purchase intention for the familiar brand LIZA, suggesting that they might have regarded these well-known brand products to have a better quality than the unfamiliar VITÒLEA'. In general, brand serves as a relevant quality cue for consumers, as food products are typically bought regularly, routinely and often under time pressure (Bredahl, 2004).

By focusing on taste, several other studies have confirmed the positive relationship between brand familiarity and consumers' taste perception of foods. The revelation of brand cues, in comparison with blind evaluation, has improved consumers' taste experiences of meat products (Makens, 1965; Vranesevic and Stancec, 2003), convenience food (Robinson *et al.*, 2007), orange juice (Hoegg and Alba, 2007), beer (Allison and Uhl, 1964) and tomato puree (Di Monaco *et al.*, 2003). The brand familiarity is also related to positive taste expectations. For instance, consumers have expected the taste of beef (Banovic *et al.*, 2010) and pasta (Di Monaco *et al.*, 2004) to be better in the case of familiar (strong) brands than in the case of unfamiliar (weaker) brands.

Vranesevic and Stancec's (2003) study is a remarkable example of the power brand familiarity exerts on consumers' taste perception. They found that in the blind taste evaluation, 60% of the study participants preferred the taste of an unfamiliar liver pate brand (its manufacturer was mentioned first in the free solicitation by only 2.2%) to the taste of a familiar brand (its manufacturer was mentioned first in the free solicitation by 43.5%). However, in the informed taste test (brands were shown), the taste of less familiar liver pate brand was preferred only by 33% of the study participants. Also, Di Monaco *et al.* (2003) demonstrated that the taste perception of tomato puree is improved (in comparison with the blind taste evaluation condition) when the identity of the popular brands (Cirio, Del Monte, Star) is revealed; this effect is not detected for a less popular brand (Elvae). In the case of powdered drinks, Varela *et al.* (2010) specifically confirmed that brand and package information have a large impact on consumers' liking scores for well-recognised brands, but less so in terms of the more unfamiliar brands. Finally, Robinson *et al.* (2007) offered

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young children same hamburgers, chicken nuggets, French fries, milk, apple juice and carrots either in an unbranded paper pack or in the McDonald's pack and discovered that children preferred the taste of chicken nuggets, French fries, milk, apple juice and carrots they thought are from the McDonald's.

By this review concerning the brand familiarity effects, we do not wish to claim that there would not exist other factors affecting consumers' food product attitudes, liking and choice preferences. There are many food brands that are well known but still are not consumers' popular choice. Product type, price, country-of-origin and claims are examples of factors that are acknowledged to have an influence on food consumption decision-making and choice behaviours. Moreover, there are cultural and individual differences in brand liking as witnessed in the subsequent section on consumer values. Nevertheless, familiar brands, which usually symbolise security and trust for consumers (see e.g. Anselmsson *et al.*, 2007), have typically positive effects in the arena of food consumption.

THE CONSUMER VALUE – BRAND SYMBOLISM (IN) CONGRUITY EXPLANATION FOR CONSUMERS' BRAND-INDUCED TASTE PERCEPTION

Brands are seen as being instrumental in helping the consumer to achieve a goal that is linked to his or her personally important values (Solomon, 2007). Consumer value–brand symbolism (in)congruity has been linked to consumers' taste perception only very recently (Allen *et al.*, 2008). Still, the conceptual ideas behind this thinking have been around for a while. Allen *et al.* (2008) borrowed from self-congruity, symbolic interactionism and category-based judgment theories (Fiske and Pavelchak, 1986; Kleine *et al.*, 1993; Sirgy, 1982). From the viewpoint of connecting consumers' personal values to brand symbolism, the self-congruity theory is probably the most relevant.

Self-congruity theory suggests that consumers prefer and choose products or brands with symbolic meanings that are congruent with their self-concept. This theory belongs to a broader class of cognitive-consistency theories, which suggest that people strive for consistency in their beliefs and behaviours because inconsistency produces feelings of unpleasantness and tension (Allen *et al.*, 2008, p. 296). The self-congruity theory has stimulated a considerable amount of empirical research. For instance, Mehta (1999) found that stronger buying intention for men's new fragrance brand prevailed amongst those consumers whose self-images converged with the brand image in comparison with those consumers whose self-images converged less with the brand image. Jamal and Goode's (2001) results showed that self-image congruity was a predictor of consumers' brand preferences and satisfaction in the jewellery brand markets. High self-congruity with the car brand leads to strong brand loyalty, involvement and brand relationship quality (Kressmann *et al.*, 2006). In the retail arena too, high congruence between the consumer self-concept and store brand image has been discovered to result in more favourable product and store attitudes (d'Astous and Levesque, 2003; Lee, 2004). Self-concept can logically be linked to consumers' values when they are so important that they make up a part of one's self-definition and contribute to one's sense of identity (Verplanken and Holland, 2002).

In addition to study of Allen *et al.* (2008), there are no examples of studies that have consciously linked consumer value–brand symbolism (in)congruity to taste perception. The study of Lehtola *et al.* (2008) comes closest; it revealed that the scent and taste of filled organic breakfast tomatoes (unbranded) was ranked better amongst consumers embracing values such as harmony, nature and locality than amongst consumers with mixed value orientations. Secondly, it has been found that consumers with hedonistic values rate the taste of a rye bread brand with lowest hedonistic image worse than consumers with traditional values (Paasovaara *et al.*, 2007; Pohjanheimo *et al.*, 2010). Thus, the former study offers some evidence for the congruency effects and the latter for the incongruency effects. Moving away from the realm of sensory perception, the role of fit between consumers' values and brand symbolism has been explored in terms of ad and product attitudes, buying intentions, consumption meanings and emotional responding (Desmet *et al.*, 2004; Maher and Hu, 2003; Quester *et al.*, 2006).

By drawing together the theoretical discussion concerning the brand familiarity and the value–brand symbolism (in) congruency explanations for consumers' brand-induced taste perception, we can develop three research hypotheses for empirical testing. First, we expect that familiar food brands will enhance consumers' taste perception in the blind versus brand-cued evaluation because of the brand familiarity effect. Second, we also expect that if consumers' values are congruent with the symbolism that is related to a familiar food brand, then the taste perception will be enhanced in the blind versus brand-cued evaluation because both the brand familiarity and the consumer value–brand symbolism congruity effects work in the same direction. Third, we hypothesise that if consumers' values are incongruent with the symbolism that is related to a familiar food brand, then the taste perception will remain unchanged in the blind versus brand-cued evaluation because the unfavourable incongruity effect is cancelled out by the favourable brand familiarity effect. The core of our theoretical thinking is depicted in Figure 1.

RESEARCH METHODOLOGY

Experiment 1: Test of hypothesis 1

Participants

Participants were recruited mainly from companies and educational institutes in a capital city area of a European country by using posters with the slogan 'Searching for tasters'. The text of the poster was neutral in tone ('Your opinions matter in the development of better food products'); it did not mention that any new flavours would be tasted or instruct the potential participants to be extra critical. Those consumers, who were interested, filled in a background questionnaire (contact info, age, education, occupation, size of household, identification of chief grocery shopper, yogurt

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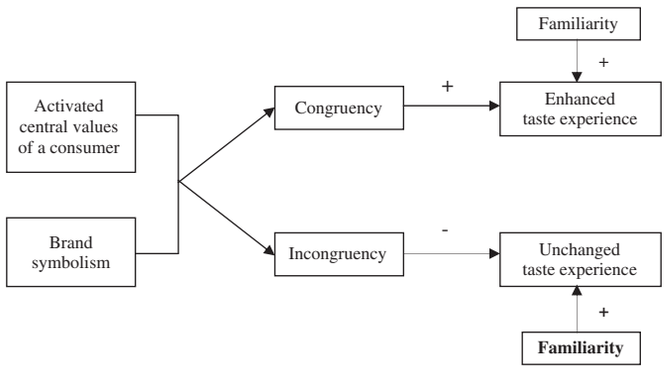

Figure 1. A conceptual framework integrating the brand familiarity and consumer value–brand symbolism (in)congruity explanations

consumption, yogurt brand loyalty) and the shorter version of the Schwartz Value Survey (Schwartz, 1994) on an Internet page that was established for the study. A total of 1100 consumers registered for taste tests, and from this pool, 162 regular yogurt users were finally invited to participate in the study (experiment 1 + experiment 2).

Altogether, 86 consumers participated in experiment 1. For the purpose of this experiment, those consumers, who reported that neither hedonistic nor traditional values were of specific importance to them (the endorsement of these values will be in focus in experiment 2), were recruited for taste tests. Table 1 gives background information about the participants of experiment 1. The over-representation of women is to be noted. It is more a rule than an exception that studies dealing with food consumption issues have female-dominated samples (see e.g. Kozup *et al.*, 2003; Ares *et al.*, 2010; Ness *et al.*, 2010). This is widely considered acceptable and relates to the facts that women are more interested in food-related questions than men and they are still today mainly responsible for household's food shopping and cooking.

Selection of yogurt brands for the empirical investigation

Two commercially available drinkable yogurt samples were evaluated for the pleasantness of their taste (sensory profiles are analysed in Pohjanheimo and Sandell, 2009). The brand 'T' was of domestic origin and the brand 'H' of foreign origin, and in both of the products, the basic flavour was strawberry. Both of these brands are strong and well known and have been available on the local markets for a long time. The popularity of the brands was distributed as follows: the T brand was the favourite for 91% of the study participants and the H brand for 9%.

Table 1. Background information of the participants of experiment 1 ($n = 86$)

Age mean (SD)		35 (12)
Gender	Female	84.9%
	Male	15.1%
Education	Comprehensive or vocational school	5.8%
	High school graduate	44.2%
	College	25.6%
	University	24.4%
Yogurt consumption	At least once a week	79.1%
	Occasionally	20.9%

SD = standard deviation.

Experimental procedure

The taste test was conducted in two separated rooms in a shopping centre. Each participant had an individual time slot for taking part in the experiment. Participants were not informed beforehand which products they were about to taste. The liking of two yogurt brands was measured in a blind evaluation task. Samples were coded with the three-digit random numbers and were served at +8°C in the 100-ml plastic bottles to cover their appearance. After the blind evaluation, the participants were guided into another test room where the yogurt brands were presented in their commercial packages. The participants re-evaluated the liking of the yogurts, but the samples were now identified by their package information (e.g. manufacturer's name, brand name and flavour). As noted previously, it is not uncommon to investigate the brand effects in food consumption by comparing study participants' reactions between the blind and informed conditions. As the studies specifically dealing with the influence of brand knowledge and information on consumers' taste evaluations have utilised this approach (Guinard *et al.*, 2001; Varela *et al.*, 2010), it was deemed as an acceptable way to manipulate the brand familiarity in this study. In order to decrease the possibility of demand effects, certain steps were taken (including filler tasks) to ensure that participants did not know that they were re-evaluating the same yogurt samples – this procedure has been successfully applied in Pohjanheimo *et al.* (2010). When participants had finalised their evaluations, they were thanked for and given a food basket worth of 10 euros.

The liking of the yogurt brands were recorded using a labelled affective magnitude (LAM) scale (Cardello and Schutz, 2004). The LAM scale is a 100-mm vertical line, with the interior scale points consisting of the labels of the nine-point hedonic scale, and extreme end anchors are labelled as 'greatest imaginable liking/disliking'. The liking items included odour, mouthfeel, taste and overall rating that was selected for data analysis because of its ability to best

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describe overall taste experience (the participants' taste scores were in line with the overall liking scores). The order of sample presentation was randomised among the participants and the evaluations.

As a part of the experimental procedure, study participants responded to 10 brand image items (semantic differentials, nine-point scale). This served two purposes. First, the analysis of the four image items was used to ascertain that different symbolism (conservatism vs hedonism) was related to the T and H yogurt brands (an essential requirement for successfully conducting experiment 2). Second, the responses to the rest of the image items helped in evaluating the positivity or negativity of the attitudes towards the T and H brands, making the interpretation of the results easier. The T brand was evaluated as more responsible, natural, ethical, appreciated and friendly to environment, but less active than the H brand (all of the space p-values were smaller than 0.001). Thus, five out of six these differences indicate that study participants' attitudes were more positive towards the T than towards the H brand.

Results

Table 2 presents the results that pertain to testing the first research hypothesis. The sensory evaluation of the yogurt T is clearly elevated after the participants have learned its manufacturer brand. In turn, the sensory perception of the yogurt brand H is not statistically significantly better after the revelation of its manufacturer brand, and this is inconsistent with our expectations. This is most likely due to less positive brand attitudes (as shown in the preceding paragraphs) that can probably be traced to the foreign origin of the brand H (Paasovaara *et al.*, 2007). Past research has shown that country-of-origin can affect consumers' food brand experiences (Luomala, 2007). In summary, we can say to have received partial empirical evidence for the brand familiarity explanation in consumers' food taste perception.

Experiment 2: Test of hypotheses 2 and 3

Participants

The same pool of potential participants was used as in experiment 1. On the basis of the responses to the Schwartz Value Survey, consumers representing the two opposite value types, hedonism and tradition, were selected for the study and invited to the taste experiment. Consumers with high scores on the two hedonic value items 'pleasure' and 'enjoying life' and low scores on the traditional values 'respect for tradition' and 'moderate' formed the group of hedonists ($n = 42$). In turn, consumers with high scores on the traditional values and low scores on the hedonistic values formed the traditional group ($n = 34$). The hedonistic and traditional groups differed statistically significantly ($p < 0.001$) from each other according to the relative importance of the value items (Table 3). The T brand was the favourite yogurt choice for 84% of the traditional consumers, whereas it was 79% for the hedonistic group. In other words, there were no significant differences in the brand loyalty patterns between the traditional and hedonistic consumer groups. Thus, the results reported in the succeeding paragraphs should not be strongly affected by the differences in brand loyalty patterns between the experimental groups.

Selection of yogurt brands for the empirical investigation

Based on the pre-understanding of the local yogurt markets, it was expected that the T brand is to a greater extent associated with traditional brand symbolism than with hedonistic brand symbolism, whereas the case was presumed to be opposite for the H brand. To control for this, the participants of experiment 1 were asked (as a part of this experiment) to evaluate the brand images of these two yogurts in order to reveal if they really were considered as either hedonistic or traditional. The brand image items, which were measured by nine-point semantic differentials, were derived from the Schwartz's cultural typology of values (Schwartz, 1994) and were as follows: the conservatism (tradition) item 'respect for tradition' was formulated into 'conventional–modern', and the 'moderate' item was formulated into 'moderate-colourful'. The affective autonomy (hedonism) item 'an exciting life' was converted into 'exciting–dull', and the 'enjoying life' item was converted into 'up-cheering–boring'.

The results showed that the two yogurts had divergent and brand-specific images. The T brand was perceived as more conventional (mean score 3.78 vs 6.75, $p < 0.001$) and more moderate (3.17 vs 6.26, $p < 0.001$) than the H brand, which in turn was perceived as more exciting (3.89 vs 5.53, $p < 0.001$) and more up-cheering (3.73 vs 4.66, $p < 0.001$). Thus, the T brand was considered as traditional and the H brand as hedonistic, so in this regard, the selection of yogurt brands for the purpose of experiment 2 was justifiable.

As in experiment 1, study participants responded to the 10 brand image items. There were no statistically significant differences in how the traditional and hedonistic groups perceived the T and H brands in terms of the six image items mentioned earlier. Thus, at least at the conscious level, the attitudes towards the T brand and H brand seem to be equally positive and negative. This suggests that the differences in the brand attitudes between the traditional and hedonistic participants should not drive the results. Instead, the idea that they are generated by the brand familiarity and consumer value–brand symbolism (in) congruity mechanisms is strengthened.

Table 2. The magnitude of the brand familiarity effect in consumers' taste perception ($n = 86$)

Brand	Expectation	Detection	SD	DF	t-value	Sig.	Hypothesis
T	Boost	+11.7	30.0	85	3.602	0.001	H1: Support
H	Boost	+2.7	26.8	83	0.917	0.362	H1: No support

SD = standard deviation, DF = degrees of freedom.

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Table 3. Background information of the hedonistic and traditional participants

		Hedonists ($n = 42$)	Traditionalists ($n = 34$)	p
Age mean (SD)		32 (11)	45 (10)	<0.001
Gender	Female	78.6%	79.4%	
	Male	21.4%	20.6%	
Education	Comprehensive or vocational school	11.9%	23.5%	
	High school graduate	47.6%	11.8%	
	College	26.2%	35.3%	
	University	14.3%	29.4%	
Hedonistic value item, mean (SD)	'Pleasure'	6.0 (0.6)	4.5 (1.1)	<0.001
	'Enjoying life'	6.7 (0.5)	5.6 (1.0)	<0.001
Traditional value item, mean (SD)	'Respect for tradition'	3.7 (1.2)	5.9 (0.7)	<0.001
	'Moderate'	3.8 (1.3)	5.1 (1.1)	<0.001
Yogurt consumption	At least once a week	85.7%	91.1%	
	Occasionally	14.3%	8.9%	

SD = standard deviation.

Experimental procedure

Before the sensory evaluation started in experiment 2, the participants' central values were activated. According to Verplanken and Holland (2002), consumers' central values, when they are not the primary focus of attention, need to be activated (e.g. primed by the situation or by informational cues) in order to generate value-congruent behaviour. We activated participants' central values by presenting them pre-tested messages (chosen from a pool of 15 different picture-statement-combinations; overall opinion of 31 pre-testers) stressing either hedonism or traditionalism; the hedonistic picture–statement combination mirrored personal indulgence and pleasure for all senses and the corresponding traditional message of familiarity, safety and good manners while eating. After the exposure and familiarisation with the message, each participant was asked to process the presented information and to jot down their thoughts and feelings the message aroused. The manipulation check concerning the value activation revealed that 76% of the hedonistic participants liked the hedonistic message (positive comments), 19% were ambivalent about it (both positive and negative statements) and only 5% of them disliked it. The traditional participants regarded the traditional message as follows: 85% liked it and 15% were ambivalent about it. Thus, the value activation can be perceived as successful, as the strong majority of the participants in both groups had positive and value-congruent thoughts concerning the presented value-activating message, and altogether, less than 5% of the participants evaluated the message as incongruent with their central values. After the value activation phase, the experimental procedure was identical to that of experiment 1.

Results

In our second hypothesis, we expected that the liking of the traditional yogurt brand among the traditional participants and the liking of the hedonistic yogurt brand among the hedonistic participants to be enhanced, when the revealed familiar brand has an image that is congruent with their central values. According to the paired sample t-test, the overall taste experience was boosted in both cases (Table 4). When the brand was revealed to the participants with traditional central values, their liking of the T brand yogurt was marginally enhanced compared with the blind evaluation scores ($p < 0.10$). Similarly, the liking of the H brand yogurt among the hedonistic participants was also enhanced ($p < 0.05$). Thus, the congruency between participants' activated central values and familiar yogurt brand symbolism boosted the taste experience as expected, and overall, we can say to have gained evidence for the second hypothesis. The brand familiarity and consumer value–brand symbolism congruity explanations seem to work in tandem in highlighting consumers' food taste perception.

Our third research hypothesis revolved around the idea that in the situation where incongruity between consumer value–brand symbolism prevails, the taste perception is not deteriorated because the positive brand familiarity effect is nullified by the incongruity, leaving the overall taste perception unaffected. This is exactly what we find. After learning the identity of the T brand, the sensory perception

Table 4. The magnitude of combined brand familiarity and consumer value – brand symbolism (in)congruity effects in consumers' taste perception

Brand		Detection	SD	DF	t-value	Sig.	Hypothesis
	Expectation/congruency						
T	Traditionalists: boost	+8.9	29.7	33	1.758	0.088	H2: Support
H	Hedonists: boost	+9.6	27.3	39	2.210	0.033	H2: Support
	Expectation/incongruency						
T	Hedonists: no effect	+5.6	24.7	40	1.444	0.156	H3: Support
H	Traditionalists: no effect	−5.6	46.0	32	0.704	0.486	H3: Support

SD = standard deviation, DF = degrees of freedom.

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of yogurt amongst the study participants embracing hedonistic values remain intact (in comparison with the blind evaluation condition; Table 4). This same pattern occurs after the revelation of the identity of the H brand to the study participants with traditional values. The incongruity effect here may be amplified by the foreign origin of the H brand; domestic origin and locality are an important aspect of traditional food products in European consumers' minds (Guerrero *et al.*, 2009). Therefore, the third hypothesis receives strong empirical support.

A critical question to be asked is whether one of the two explanatory mechanisms is more powerful in accounting for consumers' brand-induced food taste perception. In an attempt to answer this question, it can be calculated from Table 4 that the mean for the change in the sensory perception is +9.25 in the congruency and brand familiarity condition and 0.0 in the incongruence and brand familiarity condition (experiment 2). In addition, the mean for the change in the sensory perception is +7.2 (Table 2) in the brand familiarity only condition (experiment 1). Thus, the net difference in the magnitude of the change in the sensory perception between the brand familiarity only condition and the congruency and brand familiarity condition is +2.05, whereas this difference is −7.2 between the brand familiarity only and the incongruence and brand familiarity conditions.

The empirical results together with these observations imply that congruity is not responsible for enhancing consumers' taste perception very much beyond the level that is produced by the brand familiarity. In contrast, the incongruity effect appears to be capable of neutralising the brand familiarity effect. This means that these two explanations may operate independently and that in the case of well-known food brands, incongruity may cause inflated taste experiences for consumers whose values are not in concord with their brand symbolism. The incongruity may be an effective influencer of consumers' food taste perception, because consumers have encountered symbolic information that is in opposition with the key values they embrace (Allen *et al.*, 2008). This might have put them in a negative mood triggering heightened self-focus and more analytical and substantive processing of upcoming stimuli (Luomala and Laaksonen, 2000) and that would account for the deteriorated taste perception. So, even though strong brands give food marketers some protection, they may also turn into sensory perception destroyers amongst certain consumer value groups.

DISCUSSION

Although the results are novel, expand the work of Allen *et al.* (2008) and offer numerous theoretical and managerial implications, there are three limitations in this study that should be recognised. First, the hedonistic and traditional participants were not totally comparable demographically, leaving some room for speculating their potential role in the results. Second, a fuller picture of how brand familiarity and consumer value;–brand symbolism mechanisms operate together would have been achieved by incorporating a low familiarity yogurt brand into the study design (cf. Cerjak *et al.*, 2010). Third, we used food products that are probably associated with low involvement levels. It is possible that the results would have been different, if food brands with higher involvement levels (e.g. rare seafood, finest chocolate, luxurious cheeses, exquisite wines) had been studied. Thus, additional studies using both strong and weak food brands and food products from both the low and high end of the involvement continuum should be conducted.

In addition to the conceptual elaboration concerning the key reason for the potency of the incongruity as consumers' food perception distorter, three other major theoretical implications emanate from the study. First, the results suggest that in the case of well-known food brands, the brand familiarity explains consumers' brand-induced taste perception better than the consumer value–brand symbolism congruity, but the incongruity, in turn, can be as powerful explanation as brand familiarity. Moreover, if brand familiarity decreases or disappears altogether, then the (in) congruity account should logically become the main explanation. For instance, a clear and comprehensive communication of brand symbolism of a new or fictional food product is likely to trigger consumer's conscious or unconscious evaluative process for determining its level of fit or misfit with his or her personal central values. If brand symbolism is not communicated to consumers, then they will probably use the information and associations related to the type, origin, ingredients or processing methods of the food product (Paasovaara and Luomala, 2011) and evaluate the degree of their fit or misfit with their own personal values. These speculations warrant further research to be tested.

Second, our study speaks for the importance of incorporating consumer value–brand symbolism *in*congruity mechanism into food consumption studies. More generally, the implications of the misfit experiences for consumer–brand relationships have hardly been explored in consumer research so far. In a rare exception, Beverland *et al.* (2006) suggested that if consumers perceive the background music played in a store as incongruent with the core brand symbolism of that store, then counterfactual thinking about the brand results and leads to a loss of brand status and a decline of the consumer–brand relationship. This negligence of misfit experiences is unfortunate and undesirable, because values such as health, safety and ethicality have become more and more intensively ingrained into food consumption and marketing issues (see e.g. Clarke *et al.*, 2008; Vandendriessche, 2008). This trend has increased the likelihood of the consumer value–food brand symbolism misfit experiences. For example, food brands that are founded on the symbolism cherishing sincerity (e.g. organic and fair trade brands) are especially vulnerable to clash with consumers' (e.g. universalistic) values, because sincerity requires a high degree of consistency between the brand's espoused values and its actions (Aaker *et al.*, 2004; Beverland *et al.*, 2006).

Third, the basic theoretical rationale of this study relied heavily on one of the key self-concept motive: the need for self-consistency (Sirgy *et al.*, 2000). It was thought that study participants, whose central values (that partially define their self-concepts) are (in)consistent with the food brand symbolism, will experience changes in taste perception. However, it may also be that the consumer value–brand (in)

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congruity effects on food consumption are amplified in socially sensitive contexts. Both the concepts of subjective norms in the attitude theory and social consistency motive in the self-congruity theory (Sirgy *et al.*, 2000) imply that social considerations may sometimes make an individual to actively signal the symbolism believed to be attached to his or her preferred brand to others. For instance, asking a consumer embracing traditional values to buy yogurt for his or her children may trigger him or her to think more about the brand symbolism and favour more (in terms of choices and taste perception) those yogurt brands that possess pronounced conservative symbolism in comparison with the situation where he or she is asked to buy yogurt for himself or herself. This is an intriguing topic for additional research.

Managerially, three implications can be outlined. First, even owners of strong food brands cannot trust the ability of their brands to boost a consumer's taste experience if there is no correspondence between his or her central values and brand symbolism. That is why food brand marketers are advised to seek understanding of the symbolism their brand carries and the value orientations of their key consumer segments. In fact, it seems possible that consumers' central values actually affect the sensory qualities they appreciate in a food product. For example, Pohjanheimo *et al.* (2010) have demonstrated that a soft texture of rye bread drives the liking for the hedonists whereas the moistness and sourness were more important sensory qualities for the traditionalists.

Second, also the meanings of the contexts in which food brands are prototypically consumed should be explored. For instance, it is possible that for hedonistic consumers certain consumption contexts such as sensorial gratification and self-gifts are emphasised (cf. Zarantonello and Luomala, 2011). If food marketers can offer brands whose symbolism is consistent with the core values of the hedonistic food consumer and the meanings of the consumption contexts that are favoured by them, then the subjectively felt taste and value of the brand can yield its maximum, because the self-consistency motive, which facilitates the consumption experience, is fulfilled (see e.g. Sirgy *et al.*, 2000).

Third, because both brand familiarity and consumer value–brand symbolism (in)congruency affect consumers' taste experience, an objectively better taste is not necessarily decisive (Allen *et al.*, 2008). For example, Thomson (2007) believes that food industry is too fixed in optimising the sensory quality of food products; satisfactory level would suffice if it is coupled with imaginative and daring brand marketing that delivers unique emotional and functional benefits for well-defined food consumer target segments.

BIOGRAPHICAL NOTES

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