



LUND UNIVERSITY

Consumer's views regarding health claims on two food packages

Svederberg, Eva

2002

[Link to publication](#)

Citation for published version (APA):

Svederberg, E. (2002). *Consumer's views regarding health claims on two food packages*. (Pedagogical reports). [Publisher information missing].

Total number of authors:

1

General rights

Unless other specific re-use rights are stated the following general rights apply:

Copyright and moral rights for the publications made accessible in the public portal are retained by the authors and/or other copyright owners and it is a condition of accessing publications that users recognise and abide by the legal requirements associated with these rights.

- Users may download and print one copy of any publication from the public portal for the purpose of private study or research.
- You may not further distribute the material or use it for any profit-making activity or commercial gain
- You may freely distribute the URL identifying the publication in the public portal

Read more about Creative commons licenses: <https://creativecommons.org/licenses/>

Take down policy

If you believe that this document breaches copyright please contact us providing details, and we will remove access to the work immediately and investigate your claim.

LUND UNIVERSITY

PO Box 117
221 00 Lund
+46 46-222 00 00

PEDAGOGICAL REPORTS

Consumers' views regarding health claims
on two food packages

Eva Svederberg

Svederberg, E. *Consumers' views regarding health claims on two foods packages*. (Pedagogical reports 21). Lund: Department of Education, Lund University.

Abstract:

Use of nutrition claims and health claims in labelling of food products is frequent, not least on food products categorised as functional foods. Studies show frequent use of such information in consumers' choice of food products, even if many consumers find it confusing and want it reinforced by other trusted sources of information. Studies also show consumers to have a low understanding of concepts used and statements made.

The aim of the present study was to investigate how, when consumers are presented with nutrition claims and health claims on packaged food products, their thinking about such texts on food products is affected by various types of food-related experiences.

An empirical study comprised a group of thirty Swedish consumers aged 25 to 64. The open and explorative form of data collection comprised individual semi-structured interviews, where the points of departure were nutrition claims and health claims found on the package of a margarine and a loaf of bread, both sold in Sweden. The analysis aimed at categorising how food-related experiences are involved in consumers' thinking about such statements.

Participants who expressed special concern for their own and their families' health situation, at present and in the long term, were found to be eager to find out the meaning of concepts and statements made, and many of them searched for more information on the packages. A lack of understanding and the credibility of concepts and expressions often caused suspiciousness of the product, which however in some cases was counterbalanced by confidence in manufacturers, retailers and/or the Swedish food legislation. Participants who expressed concern for their traditional eating habits tended to put up with their lack of understanding of concepts and statements on the packages, and rather expressed concern for palatability.

To achieve fruitful written communication of food products' health-conducive properties on packaged food labels, there is a need to consider the importance many consumers attach to understand the meaning of concepts and expressions used, and the importance of credibility in certain expressions. For fruitful communication, there is also a need to meet consumers in relation to their varying food-related experiences.

Keywords: Consumers, food products, education, nutrition claims, health claims, contextual analysis, Atlas.ti

Content

1 Introduction 7

Aim 8

2 Material and methods 9

Subjects 9

Data collection 9

Contextual analysis 11

3 Results 14

Five categories of description 14

A comprehensive description of how the two food products were perceived 16

Understanding of concepts and expressions 28

Credibility of expressions 39

Credibility of health claims tend to be related to understanding of concepts and to the product as such 45

Summary 47

4 Summary and discussion 48

Material and methods 48

Results 49

Conclusions 52

References 54

Acknowledgements

This study is part of a larger project supported by KLIV (Knowledge Platform for the Food Industry in Sweden). The study also received financial support from Kristianstad University and the Department of Education, Lund University. My personal thanks go to Professor Lennart Svensson, Department of Education, Lund University, Professor Nils-Georg Asp, Department of Applied Nutrition and Food Chemistry, Lund University and Dr Anita Laser Reuterswärd for their support in different parts of the study.

Lund, December 16th 2002

Eva Svederberg

1 Introduction

In relation to the growing use of nutrition claims and health claims on food packages it has been shown that consumers in general are positive to such statements (Fullmer, Geiger & Parent 1991). The understanding of such statements is however low, and many consumers tend to misinterpret the message. This was shown for example in an interview study among 149 consumers, which included statements on fat and cholesterol (Reid & Hendricks, 1994), and in an interview study on dietary fibre among 241 consumers (Fullmer, Geiger & Parent 1991). A focus group study in England (National Consumer Council, 1997) showed consumers to find health claims confusing, especially longer and more complex ones, and the need for such information to be reinforced by other trusted sources of information.

In a survey Hrovat et al. (1994) found that 84% of 200 adult Americans made their choice between two kinds of biscuits based on statements on health-conducive properties on the front-label without turning the package to study the nutrition facts. In the above mentioned interview study by Reid and Hendricks (1994) about statements on fat and cholesterol, about half of the consumers looked for additional information on the package. In a similar study, McCullum and Achterberg (1997) found that teenagers (41 boys and 49 girls) were five times as disposed to use prominent statements on health-conducive properties on the front-label than the nutrition facts in their choice between 20 kinds of packaged food products, which shows that such statements are especially influential in marketing food products among youngsters. Even if adult consumers especially tend to look for additional information on the back-label of the package, several studies show consumers' understanding of terms used in nutrition information to be low (Daly 1976, Jacoby, Chestnut & Silberman 1977, Heimbach 1982, Michel et al. 1994, Reid, Conrad & Hendricks 1996).

The results of a questionnaire study included in the present research project, about to what extent Swedish consumers read and use food labels as a source of information in their choice of food products (449 participants, response frequency 65%) showed the participants to have a high degree of trust in texts on food package labels as a source of information about food and nutrition (Svederberg et al. 2002a). The high degree of trust in such texts on food package labels is of particular interest in view of the possibilities for learning about food products that such texts obviously provide.

The same questionnaire study showed participants' experience of a certain health problem related to food, either on their own part or that of family members, was a factor found to enhance the extent to which they read information about the nutritive value or the ingredients on the labels of packaged food products as a basis for their purchases. Thus, health problems and the type of these involved tended to steer what participants read on the labels on the packaged food products they bought (Svederberg et al. 2002b), which was also shown by Kreuter et al. (1997), who made a survey among 885 adult patients from four family medicine clinics in south-eastern Missouri, USA.

At present there is a growing production of food products with special health benefits, often referred to as functional foods. The use of concepts and facts of a complex character in the health-related claims used in the marketing of such products is frequent. The literature review above shows the apparent need for more knowledge about prerequisites for consumers' understanding of concepts and statements on health-conducive properties in labelling and marketing of such food products. For reasons of public health as well as marketing, there is a need to know more about in which way consumers' earlier food-related experiences might contribute to, or be a hindrance in the purchase of food advertised with arguments on added nutritional value.

The objective of the present study was to elucidate possibilities for improving the written communication of nutrition claims and health claims (Asp 2002) on food packages. In the present study this was done through bringing out the consumer as the important part, that is his/her thinking about texts in relation to his/her own priorities and point of departure.

Aim

The aim of the study was, by way of an interview study among Swedish consumers, to investigate how, when consumers are presented with nutrition claims and health claims on packaged food labels, their thinking about these texts and the food products is affected by background factors and various types of food-related experiences.

2 Material and methods

Subjects

The participants in the interview study were selected from a number of 449 consumers who participated in a questionnaire study (Svederberg et al. 2002a, b). On request in the questionnaire, the participants who answered the questionnaire (65%) could indicate with their signature if they were interested in answering more questions about information given on food packages. In all, 80 persons signed for it.

The basis for selection of the participants in the interview-study was good representation of both sexes, widely differing ages and levels of education, some foreign born, and of persons with and without experience of food-related health problems. The selection of participants resulted in 30 Swedish consumers between 25 and 64 years of age taking part in the interview study. Among those, there were 16 men and 14 women. Three of them had at most nine-year compulsory school education, while 15 had upper secondary school education, and 12 had education at university level. Seventeen of the participants reported one or two food-related health problems (overweight, diabetes type-1 and type-2, elevated blood pressure, elevated blood cholesterol, allergy or hypersensitivity, constipation). The intention was an even number with and without food-related health problems. However, in the interviews, two of the participants informed about such health problems, which they had not reported in the questionnaire.

Data collection

The interview study was a complement to the above mentioned questionnaire study to contribute to a deeper understanding of consumers' use of nutrition claims and health claims on packaged food labels, and of factors that might contribute to consumers' choice of certain food products before others. The single participant's answers in the questionnaire formed the background in the planning of the semi-structured interview in the individual case.

The interviews were carried out in 1999. The participants were contacted by phone. As it was about a year since they had answered the questionnaire, they were reminded about that and about their interest at the time to answer additional questions about information given on food packages. They were then told about the aim and the objective of the study, and that I wanted to record our conversation on tape.

The interviews

To get a comprehensive understanding of the participants' thinking in relation to the aim of the study, each interview was divided into four parts. Table 1.

Table 1. Each interview was divided into four parts.

-
1. General views on information on food packages
 2. Views on the keyhole¹ and the KRAV²-symbols
 3. Views on nutrition claims, health claims and information on ingredients and nutrient value on the package of a margarine.
 4. Views on nutrition claims, health claims and information on ingredients and nutrient value on the package of a loaf of bread.
-

The study was based on the assumption that the individual's thinking and pattern of behaviour concerning food is developed in relation to, and is the result of earlier formal and informal experiences and learning within his/her socio-cultural context: a context that includes social, economic, ecological, regional and professional experiences. The points of departure in the semi-structured interviews were relevant food packages, and an interview guide containing specific questions; these being expanded on in an exploratory way in conversation.

The main focus in the interviews, as well as in the later analysis, was the participants' views on nutrition claims and health claims on two food packages, a margarine and a loaf of bread, which are both classified as so-called functional foods. Table 2.

Table 2. The following nutrition claims and health claims found on the package of a margarine and a loaf of bread, both sold in Sweden, were included in the study.

Statements on health-conducive properties and health claims on the margarine:

- With Omega 3.
- A healthy balance between different fatty acids.
- A light mixture of cooking fats. Fat content 40%.
- Research shows that a low level of saturated fats has a favourable influence on cholesterol levels, and can thereby contribute to the prevention of coronary heart diseases. X has a low level of saturated fats, and also contains the oil Omega 3, of vital importance to health.

Statements on health-conducive properties and health claims on the loaf of bread:

- Palatable bread rich in the type of dietary fibre that might help you to lower cholesterol levels.
 - + Omega 3.
 - It is important to eat a sufficient amount of dietary fibre so as to keep your stomach in good trim. X is rich in wholesome dietary fibre from the wholemeal rye, oat bran and linseed.
 - Some soluble gel-forming types of dietary fibres found in both rye flour and oat bran can contribute to lowering the level of cholesterol in the blood. X contains plenty of fibres of this sort.
-

¹ The keyhole can be used in Sweden on food products with low fat or high fibre content compared with other food products in a given food product category.

² KRAV stands for the society for Marketing of Ecologically Grown Food, indicating that the food was produced without the use of fertilisers or pesticides.

The duration of each interview was about one hour on average. The interviews were tape-recorded and transcribed word-by-word. The basis for the qualitative analysis were thirty interview transcripts, comprising around 600 A4-pages with a wide right-margin (14-32 pages per interview).

Ethical considerations

Ethical considerations in relation to rules of ethics for arts subjects and social science were used (The Swedish Research Council 1999). This included the participants approving participation in a continuous study through their signature in the questionnaire. Another ethical consideration was that in the telephone call, in connection to the selection of participants to the present study, they were informed about the aim and objective of the study and that participation was voluntary. In addition I personally guaranteed the confidentiality in the study. After their agreement to participate, I offered them the choice of when and where to carry out the conversation. In most cases I was invited to their home, where the conversation took place at the kitchen-table, or at a table in the garden as most of the interviews were carried out in the months of May and June. A few invited me to their workplace and two of them chose to come to my office.

As the study was done with an ordinary group of consumers, I made an effort to approach the participants on equal terms in my interest in their points of view about nutrition claims and health claims on packaged food labels. The decision to let the participants decide where they preferred the conversation to take place, was part of the ambition to place the two of us on an equal level, both due to ethical considerations, and to reduce the risk of interviewer bias (Kvale 1983, Mischler 1986).

Some of the participants asked me about how I planned to publish the results, and a few expressed their interest in a copy of the report, which I promised to send when the project is concluded.

Contextual analysis

The qualitative analysis of interview data involved use of the methodology of contextual analysis (Svensson 1985, 1997), which was also developed in relation to the phenomenographic research approach (Marton 1981, Svensson 1997, Marton & Booth 1997). To use contextual analysis is to work exploratively and interpretatively to elucidate the meaning of different parts, in relation to each other and to the object of the study as a whole. The quality of the parts and relations between the quality of different parts constitute together the whole quality of the object and constitute the scientific basis for conclusions. Here the result of contextual analysis is presented in the form of qualitatively different categories of description, which are based on whole-qualities or whole characteristics of the delimited objects.

To find foundations for fruitful communication of nutrition claims and health claims, it is important in my opinion to find the variations in how consumers think about such information on food and nutrition. The analysis of interview-data in the present study took the form of distinguishing the different ways in which food-related experiences appear in consumers' conceptualisation of nutrition claims and health claims on two food packages. The qualitative analysis was supported by use of a computer program for analysing qualitative data (Atlas.ti) (Muhre 1997). A comprehensive description of how the interview data was processed step by

step using contextual analysis by means of the computer program Atlas.ti was previously published in an on-line journal (Svederberg, 2001).

In the table below (Table 3) a schedule of the different steps in the analysis is presented. To the right, the steps belonging to contextual analysis are illustrated, and to the left at which points the contextual analysis was supported by the computer program Atlas.ti. In the middle the point of departure, the research objects, and broad outlines of the results of the gradually accomplished analysis are illustrated.

Table 3. The different steps in contextual analysis of interview data by means of Atlas.ti.

Atlas.ti	Point of departure, research objects and a broad outline of results		Contextual analysis
	The text on the package of a margarine	The text on the package of a bread	Point of departure
	Consumers' thinking about nutrition claims and health claims on the packages of the two food products		Research objects
Codes	Understanding and credibility		Main parts of the research objects
Code Families (8)	Understanding (6) ³ Barrier to understanding (9) Credibility (4) Barrier to credibility (4)	Understanding (6) Barrier to understanding (4) Credibility (5) Barrier to credibility (3)	Delimitation of meaning of main parts based on smaller parts
Networks at the individual level (Based on the code families, codes and quotations.)	Thinking about nutrition claims and health claims on the two food-packages in relation to participants' differing understanding of concepts and differing trust in statements.		Overall description at the individual level of participants' thinking
Category Families (5). (From the five categories of description.)	Five categories of description. Table 4.		Sorting of the overall descriptions at the individual level of the participants thinking as basis for categories of description
Codes and quotations in the Code Families (8) found in each of the Category Families (5)	For example that credibility tends to be related to the understanding of concepts used in the statements.		Delimitation of relations between and within parts, main parts and smaller parts. See above.
	Similarities and differences in the conceptualisation of the nutrition claims and health claims in the text on the margarine and the bread respectively.		Similarities and differences between the research objects

³ Number of codes which was the basis for each code family within parenthesis.

3 Results

Five categories of description

The findings of the first part of the analysis indicated that the participants' thinking about nutrition claims and health claims on the two food packages were based on two main parts: understanding and credibility. Table 3. This means that the participants' judgements of the texts on the two food-products were based in part on their understanding of concepts and expressions used, and in part on their judgement of the credibility of these concepts and expressions.

As also shown in table 3, the two main parts (understanding and credibility), in the use of Atlas.ti, gave rise to eight Code Families, which for each of the two food packages show (1) participants' thinking that promotes understanding; (2) participants' thinking that hinders understanding; (3) participants' thinking that promotes credibility, and (4) participants' thinking that hinders credibility.

Each participant's thinking about nutrition claims and health claims on the two food packages, in relation to their differing understanding of concepts and differing trust in statements, formed the basis for overall descriptions of the whole-quality of their individual thinking. These descriptions formed the basis for five categories of description, which describe the whole-characteristics of the participating consumers' thinking about statements on health-conducive properties on the packages of the two food products included in the study. Table 4.

Table 4. Whole-characteristics of how food-related experiences were expressed in the participants' thinking about nutrition claims and health claims on two functional food packages.

-
1. Their thinking is based on their own and their family's health situation in the long term.
 2. Their thinking is based on their own and the family's present health situation.
 3. Their thinking is based on care for environmental issues locally and globally and care for their own health in relation to such issues.
 4. Their thinking is based on ambivalence between traditional eating habits and care for health.
 5. Their thinking is based on a traditional view of eating habits, where the taste of food which they are used to is emphasised.
-

The five categories of description show that consumers' thinking about nutrition claims and health claims on the two food packages in the study had different points of departure. This means that when confronted with such statements, the participants' attention to the information was different. The categories of description illustrate the variation found in the participants' thinking reforming the foundation of their attention to and line of action in their

reading of the nutrition claims and health claims. A thorough description of the participants' thinking in the five categories of description is given below. The number of individuals represented in each category of description is shown in brackets.

The thinking expressed in the *first* category of description means that when confronted with nutrition claims and health claims on the food packages, the participants' attention was in the first place directed at facts that were of relevance in relation to questions on how to eat to live a healthy life in the long term. (9)

In the *second* category of description, the participants' current health problems, or health problems in the participants' family, were the basis for their thinking about nutrition claims and health claims on food packages. This means that, when confronted with statements on health-conducive characteristics of foods as expressed on the two food packages, their attention was in the first place directed at facts of relevance in relation to present health problems. (9)

In the *third* category of description, the participants conceptualised environmental issues and care for their own health as one entity and taken as a whole. This means that their choice of food products was based on environmental considerations, as well as on considerations concerning their own health. Their thinking about nutrition claims and health claims on the two food packages, was based on their attention in the first place being directed at whether the food product was locally produced or not, and on the list of ingredients. (5)

The ambivalence among the participants in the *fourth* category of description meant that they were aware that their eating habits were not the best possible in relation to their understanding of nutritious food as a basis for good health. The direction of their thinking was based on an ambivalence (gave the impression of guilt) in their attention to the nutrition claims and health claims on the two food packages. (5)

The *fifth* category of description means that issues on food and health were never problematised in relation to the participants' eating habits. Their attention to the nutrition claims and health claims on the packages of the two food products in the study was based on the attitude that choice of such food products does not come into question, mainly because of suspiciousness of the palatability of it. (2)

Description of the results

The five categories of description constitute the main result and is the basis for the description of the results below. In the description, a comprehensive presentation is given of what characterises participants' thinking when faced with nutrition claims and health claims on the two food packages, a margarine and a loaf of bread.

At first a comprehensive description is given of how the two food products were conceived by the participants in the five categories of description respectively, in relation to the nutrition claims and health claims on the packages' labels.

Then follows a description of what characterises thinking that promotes or is a barrier to the participants' understanding of concepts and expressions, and then a description of what characterises thinking that promotes or is a barrier to the credibility of expressions used. Finally, understanding in relation to the credibility of concepts and expressions used in the

nutrition claims and health claims is described. Similarities and differences within and between the five categories of description respectively are described, as well as similarities and differences in the conceptualisation of the health-related claims in the text on the margarine and the loaf of bread respectively.

The quotations used to illustrate the results in the description of the results are translated from Swedish. As far as possible spoken language is kept in the translation. The mark [...] indicates that words or sentences were left out in order to focus on what the interviewee expressed on the theme in the conversation.

A comprehensive description of how the two food products were perceived

First a comprehensive description is given of similarities and differences in how the two food products, the margarine and the loaf of bread, were perceived by the participants in the study. The description is based on the participants' thoughts about the two food products based on the nutrition claims and health claims on the package labels (Table 2). The point of departure in the description is the whole characteristics of how food-related experiences were present in the participants' thinking about the nutrition claims and health claims on the packages as described in the five categories of description (Table 4). The most prominent characteristics in the participants' thinking about the food products are brought out in the descriptions and illustrated with quotations from the interviews. In the presentation, similarities and differences in the participants' thinking, summarised in the five categories of description, are brought out and illustrated with quotations.

Their thinking is based on their own and the family's health situation in the long term

The main concern of the nine participants in the *first* category of description was the importance of wholesome foods conducive to their own and their families' health in the long term. Out of the nine participants in this category of description, there are five men and four women. Six of them belonged to the age group 25 - 44 and three to the age group 45 - 64. Four had upper secondary school education and five had education at university level. Three of them reported food-related health problems, food allergies (2), and Type 1 Diabetes (1).

When confronted with nutrition claims and health claims on the food packages, all the participants' attention was in the first place directed at facts that were of relevance in relation to their questions on how to eat for the promotion of health in the long run. In line with this, all of them aimed at finding explanations for concepts they didn't know the meaning of.

In general terms however, on first sight of the health-related claims on the packages, all the participants in this category of description judged the margarine and the loaf of bread in the study to be wholesome. In line with this, one of them expressed her thoughts about the two food products in the following way:

To me, it (the presence of health-related claims) is positive, because I don't have that problem today, but you never know. I mean, everything that is wholesome, that is wholesome also for a healthy person of course. You don't need to be ill to

start to eat wholesome products of course. I mean, I think it is positive if you are ill as well as healthy.

My eyes were caught by the fact that this (bread) is a tasty product, tastes terrific, goody and besides that it is good for health. [...] It is good for your stomach and everything. [...] It is full of wholesomeness obviously, dietary fibre, Omega 3, fatty acids, and of course it is palatable. It is such a health bread.

At the same time, she expressed the opinion that to eat wholesome food does not necessarily include eating these food products, which indicates that in her thinking she places food products with health-related claims as parts in a category of generally wholesome food.

Strictly speaking I mean, if you eat wholesome food, I think you keep the level of cholesterol under control by all means, even if you don't eat this bread, really.

This opinion was also a characteristic of the participants' thinking in this category of description. Some of them however brought forth the risk that health-related claims including connections to illness might frighten people, which is exemplified with a quotation from an interview with one of the female participants in the age-group 45-64 with education at university level.

I am not entirely convinced. I think the text frightens people a bit. [...] I think you get tired of it, that it has to be health all the time, maybe. [...] They have a fixation on cholesterol here, so to speak, and on non-fat and like that in everything.

Some of them were a bit sceptical about concepts used which were unknown to them. However, most of this latter group expressed confidence in manufacturers, retailers and Swedish food legislation. One of those in the age-group 45-64, with education at upper secondary school level, declared his trust in the manufacturers of the margarine and the loaf of bread, both well-known Swedish ones, which to him emphasised the credibility of the health-related claims.

It is the same as when I looked at that (the text on the package of the margarine), I believe in this (the texts on the loaf of bread) because I know who manufactured it and, as I said before, I stick hard as glue to the fact that I trust my food store here. If I see a new loaf of bread, e.g. this bread is brand new to me, then I try to search for who produced it. I don't start to read the text, but first look for who produced it. Then I start to read.

Another example brought out to illustrate the variation in the category of description, is a participant who got the diagnosis Type 1 Diabetes fifteen years ago, when she was in her twenties (age-group 25 - 44, education at university level). In spite of advice about suitable food choices in relation to her disease, she expressed her conviction that lists of ingredients and her own food-related experiences were a better guidance in her choices of food products for the promotion of health for herself and her family than health-related claims.

I don't care about them (health-related claims) actually. [...] I think it is self-evident that if you eat wholesome and fibre-rich food you would certainly lower your levels of cholesterol by all means. [...] I know somebody who has got an

elevated cholesterol level, so it is fairly self-evident that they have to eat right and stop getting stressed and...yes you have to consider the whole situation in a person's life.

This attitude was based on her feeling of being deceived by advice in connection to her disease. Her judgement of the quality of packaged food is instead done from the expected main ingredient, which should be a natural one and mentioned first in the list of ingredients.

I got instructions to drink sugar-free products and the sausage should be low-fat. Everything should be sugar-free and low-fat. But then I changed my mind and I think it is better to eat usual butter, but just a little. I also think it is better to drink usual milk than low-fat milk [...] I think it is better to eat natural products than to consume a lot of synthetic products.

Based on the health-related claims and the ingredients on the margarine package, her general judgement of the product was that it may be healthy for people with elevated cholesterol and coronary heart diseases, but not for her and her family. The bread she considered to be healthy, but not due to the statements on the lowering of cholesterol levels, but due to the content of dietary fibre, which she herself experienced is good for her to prevent high blood-sugar.

To sum up, these participants' thinking about the two food products was directed from a health point of view, where their view of which food products to choose for the promotion of health in the long run formed an entity. Their confidence in their own judgements was prominent.

Their thinking is based on their own and their family's present health situation

All the nine participants in the *second* category of description, experienced food-related health problems of their own. The participants' current health problems, and in some cases health problems in the participants' family, were the basis for their thinking about nutrition claims and health claims on food packages. This means that, when confronted with statements on health-conducive characteristics of foods as expressed on the two food packages, their attention was in the first place directed at facts of relevance in relation to their own food-related health problems, or food-related health problems of family-members. In line with this, all of them judged the margarine and the bread in the study in relation to those circumstances.

Out of the nine participants who were found to belong to this category of description, there were five women and four men. Five belonged to the age group 45-64 years and four to the age group 25-44 years. Five had upper secondary school education while four had education at university level. The food-related health problems mentioned were over-weight (6), elevated blood cholesterol (1), Type 2 Diabetes (1), food allergy (2) and constipation (2). (More than one health problem was reported in some cases.)

One of the female participants in the age-group 45-64 years, who was diagnosed to have elevated blood cholesterol, spontaneously expressed herself in the following way when confronted with the texts on the package of the margarine.

This would suit me! [...]Yes, it is Omega-3 of course and the fat content, and then the balance between different fatty acids.

The comment from a male participant in the same age-group, who got the diagnosis Type 2 Diabetes a couple of years ago, indicated that he accepted his need to choose food with care, and for example brought out the health-conducive characteristics of the bread.

Coarse rye bread is good for digestion and it is good for the cholesterol and it is good for blood sugar. I had to learn that, you know.

When confronted with certain expressions on the packages however, he expressed indignation. The reason was that he experienced stigmatisation due to his present choices of food products for the prevention of complications. One example he brought about was the expression "low-fat", which in his opinion should be removed to facilitate low-fat products being conceived as normal. Instead the expression "high-fat" should be introduced according to him, to indicate that the food product in question has got more fat.

I think for example that food products called "low-fat" today, they shouldn't be called that way. Instead they should call fatty food products "high-fat". Today it is a conscious choice for me to avoid fat. From the point of view of public health, I think it would have been much better if people had to make a conscious choice to choose fatty food products. When you put a prefix before, like "low-fat", it gives a stigmatising effect.[...] (People say) "Oh, you don't eat...", "Do you have to go on diet?" or "Are you ill, or?" It is all the time like that. Why do you have to mark out people who eat low-fat food?

When his eyes were caught by the expression "With Omega-3", he again expressed indignation, this time to express his dissatisfaction about being reminded about his illness.

I happen to know (Omega-3), but it also gives it an impression of : "Now you are ill. Consequently take care!" [...] I think, you shouldn't say "wholesome". To say that a food is wholesome, then you already give, I think, some sort of negative... Wholesome for what, like. Are you ill?

When somewhat later confronted with the list of ingredients of the margarine, he expressed confidence however in the Swedish food control and food legislation.

(Reads) "Emulsify agents E471, E472." I have no idea about what it is. [...] I rely on the National Food Administration (in Sweden). We have such a reliable control on what is sold in Sweden, so I don't think there is anything sold in this country, with the exception of fat, which will harm us. [...] I have confidence in the food legislation.

Seven of the participants in this category of description reported overweight. All of them were consciously trying to reduce the content of fat in their food and some of them expressed satisfaction with the expression "low-fat". None of them however judged the two food products from the health-related claims about cholesterol and coronary heart diseases to be of any concern in relation to their own health situation, but only to people with elevated cholesterol levels.

Eh, those who have problems with cholesterol, high cholesterol, and due to what is written here so I suppose they will buy something like this.[...] Not for me,

but if I had elevated cholesterol level, so maybe... then I would surely have (tried it), so I would.

I think it is wholesome.[...] It contains something which is good for the body.[...] It is something the body needs. [...] Somewhat more middle-aged and older. [...] Maybe mostly for men, because I suppose it is mostly they who are stricken. [...] I see it like a nature-cure due to this oil here (fish-oil). [...] for those who have a problem, I think. Absolutely!

Fibre yes, but if it can help you to lower your levels of cholesterol, then it is nothing I am in need of.

As seen in the quotation above, the participant behind the third quotation was positive to fibre and later in the conversation brought out the advantage of bread with a high content of dietary fibre in her aim to keep slim, which also was in line with her expressed needs.

You maybe start to put on weight or something like that. Then it might be good to switch from white bread to fibre-bread, which might help you to slim. It is somewhat better for the body to maybe change other food-habits also of course. [...] I have a feeling of fibre being wholesome. White bread is more like air. You have to eat a lot to get enough. You eat maybe five white slices of bread or two slices of such (fibre-bread). It is three extra sandwiches and with margarine.

For different reasons, some of them who reported overweight expressed suspiciousness about the health-related claims on the margarine. One of them, a woman in the age-group 45-64, expressed that she thought this margarine to be good for the heart, but she would not have bought it due to there being many concepts included in the statements which she didn't understand the meaning of.

One of the men in the age-group 25-44 years was very upset about the growing use of references to illnesses in marketing of food products, because to him food is culture and not a medicine. At the same time he expressed concern that people might believe these products could be considered a medicine.

But it is typical! Coronary heart disease, they always talk about it. It doesn't matter what it is about, they always mix it in. [...] It just goes on and on. You will soon get a heart attack because of that. [...] I don't understand actually, why do they associate illness with a food product? I don't understand. If they put a warning-text on cigarettes and snuff, you can understand of course, because that is the cause of illness. But if you eat butter or don't eat butter you don't get heart-problems. So then I don't understand why they write here that this is for the prevention of coronary heart diseases. Maybe you think as a smoker, yes I have smoked cigarettes for 30 years. If I eat this butter it will prevent me from coronary heart diseases, which I can get from the cigarettes. Then they consider this margarine as a kind of medicine. I mean, this margarine you eat is not a medicine, so I think it is wrong to write like this.[...] It is not medicine I want on my slice of bread. It is something to put on the bread, actually.

This participant was one of those who reported overweight. In my interpretation, his ignorance about the meaning of the expression "low-fat" (p.31), added to his judgement of the

margarine not being a product for him. Also the health claims on the bread caused indignation.

Medicine, it is medicine again. I think it is scandalous actually. I mean, you shouldn't eat medicine. That is to say, medicine you eat when you are ill, and preferably not even then, I think. [...] Then I think, that if you eat this you are cured of coronary heart diseases. That's a lie!

At the same time he didn't deny the usefulness of the bread when there is a need for it.

But I don't want to say that this bread is rubbish. But if you have a difficult stomach which should function well, then it is maybe good that there are fibres.

The two participants who experienced food allergy or over-sensitivity to food, were both very concerned about the list of ingredients. One of them, whose child is allergic to many food products, was very upset when he saw fish-oil with Omega-3 in parenthesis mentioned in the list of ingredients on the package of the loaf of bread.

I don't understand why they mix fish-oil into it. [...] There is Omega-3 in parentheses. Is Omega-3 fish-oil then? [...] It is not an honest thought, thinking about allergy sufferers.[...] If it's fish-oil, write fish-oil!

When he saw fish-oil mentioned in the list of ingredients, he spontaneously thought about persons allergic to fish, whom he thought can't eat these food products. It is apparent that also potential misunderstandings like this have to be taken into consideration.

To sum up, the comprehensive picture of these participants' judgements of the margarine and the bread is that if the conceptualised meaning of nutrition claims and health claims are in line with their own health problems and needs, they are positive to the products. Participants whose only health-problem was overweight, and who didn't know the meaning of "low-fat", didn't conceive the margarine in the study to be for them, but solely for people with coronary heart diseases. A point of reference to evaluate the fat content was asked for by some in this category of description. The risk of stigmatisation of the user due to health claims that touch upon diseases was brought up.

Their thinking is based on care for environmental issues locally and globally and care for their own health in relation to such issues

The five participants in the *third* category of description, conceptualised environmental issues and care for their own health as one unity and taken as a whole. This means that their choices of food products in general were based on environmental considerations, as well as on issues concerning their own and their family's health. Environmental considerations were for instance the importance of choosing locally or regionally produced food products to minimise the distance of transportation, as well as supporting natural production of primary products. They also emphasised freshness and the importance of ingredients being natural.

Four men and one women were found to belong to this category of description. Four belonged to the age group 25-44 years and one to the age group 45-64 years. Four of them had upper secondary school education and one education at university level. None of them mentioned food-related health problems of their own.

When confronted with the texts on the two food packages both products, the margarine and the bread, were in all cases judged to be for people with health problems, which is illustrated below with a quotation from a man in the age-group 25-44 years.

It could be for the ones who have got problems with coronary heart diseases maybe. It could be the doctor who said that you have to eat less fat, for instance.

When thinking about the possibility of including the two food products in their own eating-habits, their attitude was critical. One of the participants in this category of description expressed his opinion about the margarine in the following way, when confronted with the health-related claims on the package.

It sounds very healthy of course, but I always turn the packages and read on the back, I can say. It doesn't matter what they write on the front of the package, because I always look for the content, if it is a new product.

His judgement of the healthiness of the margarine was in the first place due to the nutrition claim "With Omega-3" on the lid, which he happened to know the meaning of. This judgement of the present margarine was however overthrown when he read the list of ingredients and saw the E-numbers.

We can say like this, when I see Omega-3, it makes me curious, because that is wholesome for your body. On my side, I have that knowledge, but when I turn the package and look at the back, I immediately become very negative. If I compare this with X, there are a dammed lot of numbers here, which you don't find on X. That is what I am sceptical about. They add so many things. I am against that. It can be however attractive and healthy a product, but when it is like this, I don't let that influence me.

He shared this concern for well-known ingredients in food products with the others in this category of description. One of the others, who also knew the meaning of Omega-3, thought it is better to take Omega-3 in the form of capsules rather than buy a food product with Omega 3. The reason he gave was that then you get reliable information about how much Omega 3 you really get. And still another thought it is better to get Omega-3 the natural way through eating fish.

Two of the participants in this category of description didn't know the meaning of Omega-3. Due to their scepticism about buying products with ingredients which are unknown to them, they said that they would not have bought the two food products in the study. One of them thought the concept Omega-3 to be a writing-table product invented to make people think about it as something extra, like the latest model of a car or a TV, which did not convince him to buy the products. One of them found "Omega-3" in brackets after the ingredient "fish-oil", which immediately changed his mind towards a more positive attitude to both products. The reason is that in his job as a sailor, he met fellow-workers who grew up in the west-coast archipelago in Sweden, where they were given cod-liver oil to grow strong.

Like on the package of the margarine, the list of ingredients on the bread was initially checked by all the participants. As the bread was shown to contain solely natural ingredients, their judgement of the bread was more positive than their judgement of the margarine.

I usually buy bread rich in dietary fibre. [...] It is good for your stomach, yes good for health.

Based on the health-related claims on the bread, one of them judged the bread in financial terms.

Yes, I am thinking about, it ought to be possible to eat a liberal portion of porridge in the morning made from muesli and rye and things of course instead of this bread. It ought to be cheaper, oughtn't it. I usually have this approach when I look for things in shops. Isn't it possible to make this myself, I think.

Like others in this category of description, he also expressed that health is not related to consumption of certain food products, but to food at large as well as the lifestyle at large. Himself a clean-living man expressed concern for his co-workers in the factory where he works, through emphasising that health is also a matter of lifestyle in general.

I am doubtful, I don't think I would have bought it. I mean, if you have problem with cholesterol and you continue smoking and you sit there and eat your fatty hamburgers and French fries, what is the use of buying such bread? [...] You have to change the whole diet. You don't help your heart only because you eat that (bread).[...] It is terribly hysterical, I would like to say, this about cholesterol level in the heart, and all that. I mean, you have a great deal with smoking and shit and lifestyle, which you have to change, before you need to search for such things of course, I think.

To sum up, the participants in this category of description represent a group of consumers who consider environmental reasons in their choices of food products, as well as for reasons of health. They make conscious choices about food products based on the list of ingredients, which should contain environmentally friendly and natural ingredients. Based on this, they were suspicious about the margarine, where they expressed criticism about the E-numbers. They also called attention to the fact that single healthy food products should form part of a healthy lifestyle in general to promote health.

Their thinking is based on ambivalence between traditional eating habits and care for their health

The ambivalence among the participants in the *fourth* category of description means that they were aware that their eating habits are not the best possible in relation to their understanding of nutritious food as a basis for good health. The direction of their thinking about the margarine and the bread in the study was based on this ambivalence, which was emphasised (gave the impression of guilt) when they were confronted with nutrition claims and health claims on the two food packages which they also had difficulties to comprehend. A general confidence in the margarine and the loaf of bread as being Swedish food products was expressed.

Four of the five participants in this category are women. Four belonged to the age group 45-64 and one to the age group 25-44 . One of them had elementary school, two upper secondary school and two education at university level. All of them reported food-related health problems of different kinds, overweight (3), elevated blood cholesterol level (2), high blood pressure (1), food allergy (1), and constipation (1). (More than one health problem was reported in some cases.)

When faced with the nutrition claims and health claims on the two food packages, one of the male participants in this category of description, who in the questionnaire didn't report any food-related health problems, during our conversation told me that he was diagnosed as having elevated blood cholesterol, and that his father died in coronary heart disease in his fifties. As he himself was getting on for fifty, he tried to introduce changes in the family, but they were not accepted, and his justification for the return to their traditional eating-habits was that he felt alright anyhow.

Yes, actually I should be a bit more observant because I have elevated cholesterol. But it probably runs in the family. One period I tried some oil and such, but it didn't work with the kids. [...] But at the same time fat is tasty, like cream. If you don't have cream in the sauce, it has no taste. I mean you live only once and then you have to allow yourself just a little. [...] Actually I should have cared more. It is obvious that I become thoughtful when I see coronary heart diseases in the text, so it is. [...] But I don't know. I *feel* alright. That is the main thing. [...] One period I cared about it a bit because my cholesterol level was unusually high, but now it is lower.

During our conversation it was obvious that the texts on the packages made him interested and mindful about his health situation, but he didn't know how to handle his knowledge about his hereditary elevated cholesterol, his family's resistance to change, and that he himself felt alright.

One of the female participants, when she caught a glimpse of the presence of oat-bran in the loaf of bread, thought about her husband's newly discovered diagnosis elevated blood cholesterol, and dietary recommendations he recently got on medical advice.

Yes, but this is for many who have got problems with cholesterol levels. My husband has them, actually. It came recently, so he should eat oat-porridge, like we did before.

In the light of her husband's diagnosis, my interpretation is that her eyes were caught by oat-bran, due to it being part of a dietary recommendation which to her included a well-known traditional dish.

The female participant quoted below referred to her mother's cooking skill in the explanation of her adherence to traditional eating-habits, and in her own fondness for tasty food, for instance creamy sauces. Anyhow, she thought about the health-related claims on the packages in the study as useful information to herself in case of "terrible problems" later on. The diagnosis elevated blood pressure was in her case not enough reason for a change to healthier choices of food products of the kind included in the present study.

It is probably because it is good for persons with elevated cholesterol for example. It could as well be wholesome information for those with coronary heart diseases. [...] If consumers read it, they hopefully observe what is written. Because it is something which might come like a quick sneeze that I might get elevated cholesterol or a coronary heart disease. So probably it is good information at an early stage. Thinking about myself for example, the cholesterol level it might elevate, that I have to check. Yes, because I have

elevated blood pressure, of course. [...] If I had *terrible* trouble with these things and I was shopping, then I would of course have gone in for such one (the margarine in the study), rather than the usual one.

When thinking about the fact that her health situation might change for the worse, she expressed that this margarine might be a more wholesome alternative. To authors of nutrition claims and health claims this might be encouraging, but considering her expressed adherence to her traditional eating-habits, also in this case my interpretation is that for change of choice to occur, new food products with special health benefits must be conceptualised as parts of ordinary meals, where traditional eating-habits and palatable qualities in relation to that are considered.

Wholemeal bread belonged to the same participant's traditional eating-habits. Her thinking about the loaf of bread in the study reflected her positive attitude to such bread. Her curiosity and thoughts about the special kinds of fibre in the bread in the study was in focus in her thoughts while reading the nutrition claims and health claims on the package.

It is obvious that you should eat more fibre-food, because it is more filling. [...] It is better for the stomach and more wholesome in all respects. [...] "Rich in the type of dietary fibre that might help you to lower your cholesterol level." What kind of dietary fibre is that? I want to know what kind of dietary fibres there are. Dietary fibre to lower the cholesterol level. It is individual how much it (sinks) isn't it? It is high for two people, and how much it sinks, it depends entirely on how much you consume of this product, doesn't it?

As among the others in this category of description, whose thinking about the food products in this study was based on their traditional eating-habits, the product in itself was at the centre of attention.

The last illustration from this category of description is taken from a participant whose thinking is coloured by her own overweight, her brother's stroke a couple of years ago and the fact that her mother got diabetes. She laid stress upon the fact that she should eat better to reduce her weight, but she can't resist tasty food. When faced with the health-related claims on the margarine, she spontaneously said that she ought to use this new margarine for reasons of health. During the conversation she also talked about the risk of the consumers being deceived by the health-related claims, and considered the two food products in relation to a person's eating habits generally. At the same time she considered the claims as overstatements and brought forth the need of additional items to get a real effect.

I think it is propaganda. I do not think it is possible to say that this bread you have to eat to lower your cholesterol level in the blood. I don't swallow that, that it is just to eat such bread. I have to do more. Yes, if I have high cholesterol level, then I have to either take tablets or something else. For instance I can drink my apple cider vinegar. Because I know, my brother was lame for one year on his left side. He is also on the border with his cholesterol. He was able to choose between tablets or because he asked what to do, the doctor said to take a lot of exercise, then you lower the cholesterol. Plus he could drink apple cider vinegar. [...] But if you look at the food as a whole, and not on each and every product, so that is what you should look for if you have to lower your cholesterol. Not just to eat a couple of sandwiches with wholemeal bread....

This participant also said that she usually doesn't eat wholemeal bread, which might have added to the intensity of her argument.

To sum up, all the participants in this category of description considered the two food products to be wholesome. An obstacle which characterised their thinking in relation to the nutrition claims and health claims on the package of the margarine and the loaf of bread, were the absence of subjective symptoms used as excuses. Another obstacle was their difficulty to find a place for food products like these in their traditional eating habits.

Their thinking is based on a traditional view of eating habits, where the taste of food which they are used to is emphasised

The thinking by the participants in the *fifth* category of description was characterised by that issues on food and health were never problematised. Instead they were characterised by a constraint to their traditional eating habits, where the taste of food which they are used to was emphasised. Two of the participants were found to belong to this category of description. Both of them are men, one of them in the age-group 25-44 years, and one in the age-group 45-64 years. Concerning level of education, both of them had education at upper secondary school level. None of them experienced food-related health problems of their own.

Even though both of them had a low understanding of the concepts used on the packages, their judgement of the margarine and the loaf of bread was that they generally speaking considered them to be healthy. In a comparison between the margarine in the study and the margarine they used to buy, the younger one didn't find any reason to consider the new margarine for himself, due to his satisfaction with his present choice.

But I don't think I will buy it anyhow. I will buy our usual, which we always did. [...] Because we know that the taste is good of course.

The older one of the two, related to himself as "fit as a fiddle" and because of that he didn't need to think about cholesterol. When faced with the nutrition claims and health claims on the two packages, he considered them generally to be commercial advertising, which he showed himself to be a bit suspicious of.

Thinking about the list of ingredients on the two packages in the study, both participants showed confidence in the manufacturers. Both of them were for different reasons however caught by "fish-oil", mentioned in the list of ingredients on both packages. The older one connected the content of fish-oil in the margarine to the list of E-numbers in the same list of ingredients.

Maybe they have to use such (ingredients with E-numbers) to make it palatable, to hide the taste of fish-oil.

The younger one saw "fish-oil" mentioned in the list of ingredients on the package of the loaf of bread, which made him think about in what way the content of fish-oil in the bread might effect the taste of the bread.

Yes, also it doesn't seem tasty of course, because I don't eat fish either.

As shown above, both of them were concerned about the taste, and as they didn't have any signs of disease, these products were of no interest to either of them.

It (the bread) is good for your stomach maybe, but I myself don't have any problem with my stomach, never had. [...] If I had problems with my stomach and such, then it would have been attractive of course. [...] I have no problem also with that (elevated cholesterol), so therefore that is also of no interest to me.

To sum up, both participants were satisfied with their present food habits, and had difficulties even mobilising interest in the texts on the packages of the two food products during the interview. A general view of what characterised these two participants' thinking was that well-known taste sensations are of crucial importance. To increase the interest for new food products with added nutritional value among consumers bound to their traditional eating-habits, I think the possibility to taste the food is a way to go.

Summary

In relation to the nutrition claims and health claims on the two food packages in the present study, the findings show that the two food products were conceived in different ways depending on a different points of departure for the thinking in the five categories of description.

Most of the participants at first sight considered the margarine and the loaf of bread in the study to be wholesome. The qualitative difference in what characterised the participants' thinking about the two food products in the five categories of description respectively was due to (a) judgements of which choices of food products to make for the promotion of health in the long run, (b) their own and/or family-member's present health situation, (c) environmental considerations and care for health, (d) ambivalence between their traditional eating-habits and care for health, and (e) constraint to their traditional eating-habits.

What also characterised the thinking in the five categories of description respectively was the confidence in their own judgements in the first category of description, the judgements of the food products in relation to their own health problems in the second category, the judgement of the food products based on the list of ingredients among the environmentally conscious, the absence of subjective symptoms as an excuse for non-compliance with dietary guidelines conducive to health among the ambivalent, and the necessity of well-known taste sensations among those with pronounced traditional eating-habits.

The ideal is that a certain situation, for example when a consumer notices a nutrition claim or a health claim on a packaged food label, results in a conscious reflected thinking about the text, and development of knowledge as basis for an informed choice. When attention was called to such texts on the packaged food labels in the present study, the results show that consumers' differing experiences result in varying approaches to the texts and different interpretations of them as a basis for the judgement of the products. This means that texts on package food labels are approached and reflected on in different contexts of thought and action, with different attitudes to the product as a result. In some cases the approach to the texts even leads the thinking away from the food product.

To make messages relevant to the reader, the consequence of the results is that there is a need to discuss a new market segmentation. That is, to segment the market not only according to

tradition, but also according to the variation of contexts of thought and action within which nutrition claims and health claims on packaged food labels are reflected on.

Understanding of concepts and expressions

As mentioned above (p. 11), the participants' judgements of the nutrition claims and health claims on the two food products were based in part on their *understanding* of concepts and expressions used, and in part on their judgement of the *credibility* of them. In this part, it is described *how* the participants understood and reasoned about concepts and expressions most commonly paid attention to in the nutrition claims and health claims on the packages of the margarine and the loaf of bread.

All the participants in the present study shared the opinion that it is generally difficult to understand many concepts and expressions used on food packages. The packages of the margarine and the loaf of bread in the present study were no exception. One of the participants emphasised the need for previous knowledge to judge the information.

But all the time it is a matter of what previous knowledge you have, if you regard the information as positive or negative. (Category 1)

The point of departure in the description of the results below, is a number of concepts and expressions used in nutrition claims and health claims on the packages of the margarine and the loaf of bread. These concepts and expressions were the ones the participants most commonly paid attention to and expressed their thoughts about. The five categories of description are referred to in the description when similarities and differences between them are pointed out. In the text below, an abbreviation of the main characteristics of the point of departure in the participants' thinking in the categories of description respectively is used as follows: Category 1 (long-term health), Category 2 (present health), Category 3 (environment), Category 4 (ambivalence) and Category 5 (traditional).

Omega-3

Of the concepts used in nutrition claims and health claims on the two food packages in the study, the participants' attention was most of all caught by the concept Omega-3. This concept was found in the claims "With Omega-3", "...with the oil Omega-3, of vital importance to health" on the package of the margarine, and "+ Omega-3" on the package of the loaf of bread. Most of the participants didn't have any idea about the meaning of Omega-3. All the participants in Category 1 (long-term health) expressed a wish to learn the meaning of it. To find out the meaning, most of the interviewees in this category searched for more information somewhere else on the packages.

Omega-3 is totally unknown to me. But if I turn the package I will of course find out. (Search) No, you can't get. No. What I can see, I can't get any information on the package. [...] It is incredible really that you can't find it in an easy way. (Category 1)

This participant, in his indignation about not finding any explanation on the package, made a comparison with what a lack of information of this kind would have meant in lost customers in his own workshop. Another participant, also in Category 1, considered the need for education to understand the meaning of Omega-3.

This is definitely nothing you know about, if you didn't study biochemistry, or something like that. (Category 1)

And another thought is that the producers seem to think it belongs to general education to know the meaning of Omega-3.

They surely think the whole Swedish population knows the meaning of Omega-3. I don't. (Category 1)

The participants in Category 3 (environment), like those in Category 1, expressed their interest in finding out what Omega-3 is. In both categories some of the participants in addition expressed scepticism, and had the opinion that they won't buy a food product if the text include concepts they don't know the meaning of.

Yes, I wouldn't choose it. I wouldn't choose it when I don't know what it (Omega-3) is. (Category 3)

I don't buy it because of the text "with the oil Omega-3, of vital importance to health". On the contrary I regard it as something suspect, which I don't know. [...] Even if this is maybe better, I prefer another where I straight away get an explanation of what it (Omega-3) is. (Category 1)

The participants in Categories 4 and 5 (ambivalence and traditional) showed a somewhat different attitude to the concept. In most cases they just accepted that they don't know. One of the participants in Category 4 in addition stated that she feels ashamed when she can't understand concepts used on food packages, and avoids reading such texts to avoid feeling ignorant. She also revealed that she is afraid to ask.

Yes, I am not that aware of things. Then I feel too foolish to ask many times. Maybe they think, what a stupid person who calls to ask such a thing. [...] Even if they don't know who I am, I feel like that. (Category 4)

Participants in Category 4 also tended to express more associations to concepts in their own experienced surrounding world than the others, or made a guess.

I think either about an Opel Omega car or a watch, or a fat. There are fats, that is grease, with the trade mark Omega. I have a tube in the basement. (Category 4)

Omega-3, is that an additive to make it easy to spread or something like that? (Category 4)

The participants in Category 2 (present health) were found to be more well-informed about Omega-3 than participants in other categories of description, even though their health problems didn't motivate an intake of extra Omega-3. One of them declared that he knows the connection between Omega-3 and blood cholesterol.

I know that research has shown that Omega-3 is a fatty acid which is good for the cholesterol. That it helps to lower the cholesterol in the blood. (Category 2)

Three of the participants in Category 2 (present health), stated that they know the connection between Omega-3 and fish, even if one of them appeared to be a bit puzzled about the existence of fish-oil in the margarine.

Omega-3, it is polyunsaturated fatty acids found in fish. Simply explained.
(Category 2)

I have an idea that Omega-3 is fish ... oil or something like that. It is a bit strange with fish there (point at the margarine package), isn't it? Otherwise, I think it (the margarine) looks wholesome, wholesome and good. (Category 2)

Two of the participants in Category 2, who belong to the age-group 45-64 years, stated that they take Omega-3 capsules. One of them, who got diabetes type-2, and who has unpleasant memories of cod-liver oil from childhood, declared that he is afraid that some consumers might hesitate to buy the margarine if they know there is fish-oil in the margarine.

The taste of cod liver oil was terrible. That is something you carry with you. It is difficult to make oneself free from, difficult to change under such circumstances. It has very much to do with emotions. The experience from the childhood comes back. (Category 2)

The other one, who has been given the diagnosis elevated blood cholesterol, and didn't have unpleasant memories of cod liver oil from childhood, just thought about the margarine as wholesome and good to use for the prevention of coronary heart diseases.

Most of the participants in the Category 1, 2 and 3, who did not know that Omega-3 is found in fish oil, searched for information and at last found "fish-oil" in brackets after Omega-3 in the list of ingredients on the loaf of bread. They then drew the conclusion that Omega-3 is the same as fish-oil. This discovery made one of them (Category 1) think about persons who are allergic to fish, and draw the conclusion that these persons can't eat food products with Omega-3. One of the interviewees in Category 3 drew the conclusion that vegetarians can't eat food products with Omega-3 due to the presence of fish in the product.

And I mean if they mix minced fish into it, they will miss all vegetarians. They will not buy that bread, if they are real vegetarians. (Category 3)

The same person expressed doubts about adding specific nutrients to food products.

Due to the stress you accumulate while at work, it makes probably no difference how much Omega 3 fatty acids, and all there is to add to your body, because the tempo in the society today it ruins the human being. (Category 3)

The participants in Category 3 (environment) showed a general scepticism to additives to food products. This was also shown in a few cases in the Categories 1 (long-term health) and 2 (present health), but not among the participants in the Categories 4 (ambivalent) and 5 (traditional).

Most of the interviewees in Category 1-3, who didn't know the meaning of Omega-3, expressed relief when the connection between Omega-3 and fish-oil appeared to them. In relation to their knowledge about health-conducive properties of fish-oil, they would have

appreciated open information. The suggestion was that better information to the consumer would have been "With fish-oil". A couple of the interviewees touched upon the ethics of excluding information.

Maybe they think people will throw it if fish-oil is mentioned, because it doesn't sound as good as Omega-3. But on the other hand, the person who gets to know that it is fish-oil, and did not immediately get that knowledge, might become more irritated. [...] I believe in that honesty is the best policy, an honest description is most important. I think that is universal. (Category 1)

Some of the participants in Category 1-3 were still not satisfied and expressed a desire for explanations about the expression "of vital importance to health" in the statement "and also contains Omega 3, of vital importance to health". The following citations exemplify questions raised.

"...of vital importance to health." Well, haven't you got that one before then? [...] And I mean, where can you normally find it (Omega-3), in other foods? (Category 1)

The expression "of vital importance to health", it sounds like you can't survive without this margarine. [...] I think it is a bit exaggerated. (Category 1)

Yes, I would have skipped that. As soon as I had read it I had forgotten it, because that is also a kind of health food nonsense. (Category 1)

Why don't we know more about Omega-3, if it is "of vital importance to health"? Don't you survive if you don't use this margarine then for example, thickly spread on the slice of bread? (Category 2)

I don't like the text "the oil Omega-3, of vital importance to health", because people closest to me, they reached the age of both 80 and 90 and almost 100 years without Omega-3. So, it can't have such a vital importance to health, if it wasn't included naturally in another food without our knowledge, and you got it anyhow. But it is not written here, and I don't know it myself. (Category 3)

When later presented with the statement "+ Omega-3" on the package of the loaf of bread, the participant, from which the last quotation above was taken, did not like the sender of the claim being a bakery, but expressed preference for an expert sender.

I think this would have been alright if they put a short notice from the newspaper with a professor's name, who could verify this in another way than the bakery can. [...] I would have bought it directly, but not when the bakery writes this (+ Omega-3). The bakery they know how to make bread and they make it well, but they shouldn't get involved in the debate about what Omega-3 fatty acids are good for. (Category 3)

To sum up, the participants in Category 1 (long-term health) and 3 (environment), as well as the participants in Category 2 (present health), who didn't know the meaning of Omega-3, clearly expressed their desire to learn. Participants whose present health problems were the basis for their thinking about nutrition claims and health claims on food packages showed

better knowledge about Omega 3 than participants in the other categories of description, even though their knowledge was not always motivated by a special need for a higher consumption of Omega-3. An obvious need for explanations about the connection between Omega-3 and fish-oil to avoid misunderstandings, was also shown. Participants in the categories 4 (ambivalent) and 5 (traditional) tended to accept that they didn't know.

Fatty acids

When faced with the nutrition claim "A healthy balance between fatty acids", on the lid of the package of the margarine, some of the participants were immediately caught by the concept "fatty acids". Two of them started to think about other kinds of acids and were puzzled in their efforts to catch the meaning of the whole statement.

Fatty acids, I have to think it over. What is it? [...] There are so many different kinds of fats, but fatty acids...? [...] I mean, acids can be both poisonous and wholesome...actually. [...] There are for instance battery acid, sulphur acid and formic acid. I mean they are used for different purposes. (Category 1)

"Balance between different fatty acids". I never thought of margarine having acids in it. Sort of fatty acids, it is not good for ordinary people (to write like that), I think. Because we didn't study so much that we talk about acids, fatty acids. I don't think so. It is too complicated. [...] Think about one, one, for instance me, to make me understand what it means. Margarine is margarine, and that is a dairy product to spread on a slice of bread because butter is too hard, you know. But then they mix a lot of text in it, which makes me confused through mentioning fatty acids, and it (margarine) has never been acidic or sourish... acetic acid, citric acid, fatty acid. I don't understand. Not at all! (Category 3)

However, quite a number of the interviewees, spread all over the categories of description, expressed positive thoughts on the whole nutrition claim "A healthy balance between fatty acids". Reflections were mostly on the expression "healthy balance" and on what makes that balance. Some expressed more or less qualified guesses on possible health effects of the "health balance".

I don't know really how the fatty acids affect us, if they do some good. But a balance is it, it is true. I suppose it is mostly to keep the weight down maybe, they think about here. It is probably mostly for customers who think that they, partly (want to eat) healthier, partly want to keep their weight under control too. (Category 3)

Yes, then I get the impression that there is maybe much polyunsaturated fat or so in it. (Category 1)

One of the participants in category 2 (present health) expressed doubts about the degree of truth in the statement "A healthy balance between fatty acids" when all the statements on the lid of the package of the margarine were considered at the same time.

Yes, I don't know but I think it balances the health somehow, but I don't believe that it is possible. (Read) "40%" (fat), you can't balance your health with that. (Category 2)

And one of the participants in category 3 (environment) interpreted the formulation "A healthy balance between fatty acids" as commercial advertising.

I think that is something they polished up so to speak, to raise the readers' interest, to make people buy, and find an expression that can't be counter-evidenced that it is unhealthy or anything. (Category 3)

To sum up, as concerning Omega-3, many of the participants in Category 1-3 caught sight of the concept "fatty acids" on the lid of the margarine package, and interpreted it in different ways, often to the disadvantage of the intended meaning of the statement where the concept was included. The rest of the text and the keyhole symbol didn't help them to get a deeper understanding of the concept "fatty acids" and also did not support their understanding of the whole text. Just like with other concepts and expressions on the two food packages, the interviewees in category 4 (ambivalent) and 5 (traditional), mostly just admitted that they didn't know. The comment of one of the interviewees in Category 5 was:

I think you need to be a chemist or something like that to understand what this is about. (Category 5)

"Low-fat" and "Fat content 40%"

About half of the participants, spread over all of the categories of description, understood the concept "low-fat" in the statement "low-fat spread", and the statement "fat content 40%", without any problem. The general understanding of the statements was that this margarine is something to spread on bread if you don't want to put on weight. One of the participants expressed the fact that she considered the fat content in the margarine in question to be normal.

I think it (40%) is normal, because it is the fat content in all the others as well. So, I think it is normal even if they write low-fat mixture of cooking fat. (Category 2)

The participants in the categories 1 (long-term health) and 2 (present health), who throughout the study were most serious in their desire to understand the texts, and who had no point of reference themselves, expressed the need for a point of reference to simplify their judgement of the margarine really being a low-fat one.

Such factors like when they mention "Fat content 40%" and likewise, I sometimes spontaneously think about what it really means. If it is much or if it is little. Because it is this with points of reference, which is sometimes poor. (Category 1)

And then "Fat content 40%". I don't know the fat contents of other margarine. I really don't know. It is maybe 40%. I don't know. I would like to compare. (Category 2)

It is obvious that consumers want to have the possibility to compare. Just like when Omega 3 was in focus for the conversation, the interviewees in Category 1 and 2 expressed a wish for more profound information as a basis for their choices. In some cases their search for a point of reference lead some of them to question if the fat content is really low.

Is that low-fat? What is, what in that case is the normal fat content in such (margarine)? What is a lot and what is a little, what is normal? Low-fat margarine. Fat content 40%. To me that doesn't sound particularly low-fat. [...] If you think about the fat-content of 1.5 percent in milk, this is not particularly low-fat. (Category 1)

If you just see 40%, I think it is far too much, because it is after all almost half the package which is pure fat, actually, and that I don't consider low-fat. (Category 2)

One of the interviewees in category 2, who had been given the diagnosis diabetes type-2, was very upset about the expression "low-fat" and thought that the expression stigmatises users of low-fat products.

I think for example that food products called low-fat (light) today, they shouldn't be called that. Instead they should call fatty food products "high-fat." Today it is a conscious choice for me to avoid fat. From the point of view of public health, instead I think it would have been much better if people had to make a conscious choice to choose fatty food products. When you put a prefix before, like in low-fat, it gives a stigmatising effect. [...] (People say) "Oh, you don't eat...", "Do you have to go on diet?" or "Are you ill, or?" It is like that all the time. Why do you have to mark out people who eat low-fat food? (Category 2)

Some questioned the term "low-fat" due to the fact that they regarded the content of additives to be too high in food products marked in that way.

Thinking about low-fat products, they contain an awful lot of additives actually. It is not natural when they are low-fat, but then a lot of strange things, which are maybe not healthy, are stirred into it. [...] (Reads) "A low-fat mixture of cooking fat", that's why I have never bought such products. (Category 1)

This was the only participant who in her thinking straight away interpreted the term "low-fat" as "lots of additives". When the participants later on were asked to express their thoughts in relation to the list of ingredients, one third in the Categories 1-3 (none in categories 4-5) expressed suspiciousness about the various ingredients of the margarine, and questions were raised.

To sum up, the findings show that the participants ask for an easily comprehensible point of reference to understand the intended meaning of the statements "Low-fat" and "Fat content 40%". The findings also show a need to lessen the suspiciousness to unknown ingredients, through easily obtainable facts and explanations to support consumers' interest in understanding the meaning of them. It is worthwhile to note that one of the participants emphasised the risk of the concept "low-fat" causing a feeling of stigmatisation.

Low level of saturated fats

In the two-step health claim on the package of margarine, the expression "low level of saturated fats" in the first part of the claim confused a number of the interviewees spread over the categories 1-4. One of the participants in Category 1 (long-term health), was confused about how to interpret the expression "low level of saturated fats", and said that she didn't

understand if the meaning is that it is preferable with some, or if the meaning is that it is good if it is as little as possible. Another participant, this one in Category 2 (present health) who had been given the diagnosis elevated blood cholesterol, heard about the healthiness of unsaturated fats, and interpreted the text as that the margarine didn't contain any.

Isn't there any unsaturated fat then? It is not mentioned. (Category 2)

As shown above concerning the fat content, some participants in category 1-3 felt the lack of points of reference, in this case to be able to judge if the level of saturated fats really is low, which is exemplified in the following citation.

I would be delighted to know the ratio between what is healthy and what is unhealthy in a package. And I mean, if they put up, that is, low content of saturated fats, and maybe then in relation to what they (experts) say is wholesome and unwholesome. Maybe in percentages. [...] (Reads on the package) "Research shows that low level..." But, what do you mean the researchers show that low level... How low? What do they mean with low? (Category 1)

The participant in Category 2, who had been given the diagnosis type 2-diabetes, and heard about the healthiness of unsaturated fats, was puzzled about it being saturated fats which are mentioned and not unsaturated fats.

Now, it is we know, not a low level of saturated fats you know, which is important. It is actually that there is a high level of unsaturated fats. That is what we need. We need a lot of good cholesterol, which can use up the bad. (Category 2)

Others just admitted that they don't know, like the participant in Category 3 (environment), from whom the following quotation is taken.

It is difficult for me to understand that concept (saturated).Unsaturated, poly-unsaturated and saturated, it doesn't tell me anything, because I never studied that subject, so it doesn't tell me a thing. (Category 3)

To sum up, the expression "low level of saturated fats" confused many of the participants. It is obvious that an expression like this needs to be considered in relation to the reader's possibility to understand it in the intended way. It is also important to take into consideration when expressions are formulated, that they are not puzzling in relation to information given from other sources of information. Another thought worth considering is the wish for points of reference.

Dietary fibre

The conversation about texts on the package of the loaf of bread particularly focussed on three health claims, all of them containing the concept of dietary fibre. The statements were "Palatable bread rich in the type of dietary fibre that might help you to lower cholesterol levels", "It is important to eat a sufficient amount of dietary fibre so as to keep your stomach in good trim", and "Some soluble gel-forming types of dietary fibres found in both rye flour and oat bran can contribute to lowering the level of cholesterol in the blood".

The importance of dietary fibre for normal functioning of the stomach appeared to be known by all the participants. This knowledge made it easy for them to accept the health claim where it is declared that it is important to eat a sufficient amount of dietary fibre to keep the stomach in good trim. This means that, when the health claim confirms what the reader already knows, the meaning of the text is easily understood, as well as accepted.

Yes, of course, it goes without saying that you have to eat dietary fibre. Of course, you have to keep your stomach in good trim, so here it is nobody else who told you, but it is just like that. [...] We (the author of the statement and I) have the same thought, we have the same knowledge there. [...] Nobody just told me a fact, but here I could myself decide if I believe in the information. (Category 1)

The concept "dietary fibre" was however not known to everybody. One of the interviewees revealed her conception of dietary fibre to be something artificial invented to add to food products.

Yes, I think it is something added. [...] Dietary fibre is something new, that is something they invented. (Category 2)

The participant with Diabetes type 1 in Category of Description 1, expressed her own positive experience of dietary fibre preventing too low blood-sugar.

The white bread disappears quite quickly out from the body, and I notice my diabetes. But if I eat a fibre-rich bread it keeps much longer. It could be that I know that for me it is much better to eat brown bread. (Category 1)

Only one of the participants, this one in Category of Description 5 (traditional), questioned the statement and considered it to be a form of advertisement.

It is quite alright with that information, or what you call it. Or maybe it is an advertisement. (Category 5)

Another participant thought about the effect of dietary fibre in keeping the stomach in good trim, where however an absolute connection to the effect was questioned.

Yes, but too much dietary fibre can't be wholesome. It depends on the individual in question, how much their stomach can bear, how different people's stomachs are. [...] First of all, you might become more constipated when you eat fibre bread. But it might be that the stomach needs to work more, then it is good, otherwise it usually like passes directly through so to speak, that is also not wholesome. [...] If you have a difficult stomach, you maybe only go to the toilet every other or third day, then it is very good with fibre because it gives rotation to it as well. (Category 4)

Only two of the participants expressed criticism towards the health claim, where the connection between dietary fibre and the functioning of the stomach was raised, which is illustrated in the following citation. As shown in the citation, this participant didn't like to be reminded about what happens in his stomach while shopping.

In what way dietary fibre is wholesome, I am not interested in when I buy the bread. That is not what I look for. I know dietary fibres are wholesome, but I don't need to know why. [...] To explain exactly in detail in what way it is wholesome, and where and when and which intestine - I don't need to know when I buy the bread. [...] Because it is bit forward in your thought. Dietary fibre is wholesome and good. Then comes the taste. In what way dietary fibre is wholesome it is much more in the future.[...] It is as if the text was that when you go to the toilet it is good to have eaten this bread. It is not too fun to hear. It is a bit forward. It is on the other side of the eating, so to speak. (Category 1)

To sum up, the concept dietary fibre was shown to be known by all the participants in the study, and most of them expressed appreciation of the health claim about the connection between dietary fibre and to keep the stomach in trim, which confirmed their own experience and knowledge.

Soluble gel-forming types of dietary fibres

All of the participants were puzzled when they paid attention to the health claim on the front page of the package of the loaf of bread, which proclaims the bread to be "rich in the type of dietary fibre that might help you to lower the cholesterol level", because none of them had heard about this effect of dietary fibre before. One of the interviewees in Category 1 (long-term health) made a guess about how dietary fibres work when they lower the level of cholesterol.

What do you mean, dietary fibres lower the level of cholesterol? Do they evaporate, do dietary fibres evaporate that cholesterol, or what happens actually? (Category 1)

In most cases the participants were caught by the connection between dietary fibre and the stomach, but the ones in Category 2 (present health) and Category 4 (ambivalence), who got the diagnosis elevated blood cholesterol were caught also by the text which pointed at that dietary fibre might lower the cholesterol level. One of these participants in Category 4 (ambivalence) however, who hadn't changed his food habits so far, thought the health claim is too long.

Yes, this that it might help you to lower the cholesterol level is for me. [...] "X with dietary fibre to lower the cholesterol level in the blood", that would have been enough for me. You don't read everything. Because if I would read everything on the packages, it would take too much time. (Category 4)

In one of the health claims on the back of the package of the loaf of bread, the content of the health claim on the front page of the package is expanded, and includes the statement that the dietary fibre in question is a "soluble gel-forming type of dietary fibres". All the participants in all the categories of description were puzzled about this type of dietary fibre, which they had never heard about before.

"Gel-forming", I don't know what the meaning of that is. What does it mean? [...] I mean, everybody doesn't have a university degree. And even if many have, it is not certain that they have got knowledge about this word. Because many times there are words which are not normally used. I think they should use words which are normally used in conversation. (Category 1)

One of the interviewees, also in Category 1 (long-term health), expressed the view that "soluble gel-forming types of dietary fibre" didn't seem tasty, but rather the contrary. This person at an early stage in the interview proclaimed that he did not like illnesses to be mixed with information about food products. In line with this, when he read the part of the health claim on the loaf of bread, claiming that it "can contribute to lowering the level of cholesterol in the blood", his comment was that it is *not* fun to read, with the meaning that he doesn't want to be reminded about illness while making a sandwich.

One of the participants in Category 3 (environment) said that he is happy about dietary fibre, but very suspicious about "soluble gel-forming types of dietary fibres", because he couldn't imagine how it works inside the body.

That there are dietary fibres makes me happy of course. That they then are soluble and gel-forming makes me sceptical. Because of course I know dietary fibres are good, but I don't know anything about that there are soluble and gel-forming types. [...] I know, from childhood, there was an old lady where I lived who got linseed. [...] So I know that it becomes gel-forming, but, but it makes me sceptical that it (fibre) is gel-forming. That is not the picture I have of dietary fibres coming down in my stomach. It is supposed to clean up, keep clean and keep the intestine going, knead it and like that. [...] I think of dietary fibre as something natural, clean, coarse. The more coarse, the better it is. So when there are a lot of such shady dietary fibre, it makes me suspicious. (Category 3)

In Categories 4 (ambivalence) and 5 (traditional), the interviewees were just puzzled about what kind of dietary fibres this was, without reflecting comments. However one of the interviewees in Category 4 made a comparison with medicine and expressed thoughts about dosage.

If two people have it (a high cholesterol level) how much it sinks must depend on how much you eat of that product. (Category 4)

Among the participants in Category 3 (environment) especially, criticism was expressed concerning the statement about the wholeness of the bread in relation to the uselessness of it if food habits in general don't correspond to healthy eating.

If you've got problems with the cholesterol and you continue to smoke, and you sit and eat your fatty hamburgers and French fries, what is the use of buying this kind of bread? There's no reason. On principle, it is just for the producers to earn money. You have to change your whole diet. You won't help your heart only by getting that. (Category 3)

Of course many people think it is very good that they decrease their cholesterol. But if you look at your food as a whole, and not only at a small food product, that is what is important. Not only that I eat some slices of wholemeal bread. (Category 3)

Another one of the participants in Category 3, who made an effort to buy natural, regionally produced food, and to eat wholesome food in general, thought about the price of the bread and considered food products that might replace the loaf of bread in question.

I am thinking that you could eat a generous portion of some porridge in the morning made from muesli and rye instead of this bread. It ought to be cheaper. Yes, I usually have that approach when I see foods in the shop: can't I do this myself ? (Category 3)

Others questioned illness being mentioned in connection to food. They have confidence in dietary fibre, but when a hint of illness (cholesterol level) is mentioned in the health claim it tends to lower their positive opinion of the statement.

Yes, food is food. It is not a medicine actually. [...] It is food actually and it is rich in fibre. But not that it can cure this and that. Soon it will be written that "palatable bread rich in the type of dietary fibre that can help you to cure your cancer. [...] It could as well be written, because illnesses are illnesses. (Category 2)

To sum up, all the participants in the study were puzzled about the concept "soluble gel-forming types of dietary fibres" in one of the health claims on the loaf of bread. Both the concepts "soluble" and "gel-forming types of dietary fibre" were shown to make the participants suspicious, and as one of the participants said, the concepts "don't look tasty". Most of them were also critical of illness (it contributing to lowering levels of cholesterol) being touched upon in the health claim.

Summary

The findings show a generally low understanding of concepts and expressions used in the nutrition claims and health claims on the margarine and the loaf of bread in the present study. Many expressed irritation when an explanation was not easy to access on the package in question. The findings also show that there is an obvious risk that consumers avoid products where unknown concepts and expressions are used.

Credibility of expressions

Another result of the present study was that expressions used in the health claims on the packages of the margarine and the loaf of bread in some cases promoted, and in other cases were a barrier to the credibility of the health claims. The two expressions found to be especially critical to the credibility were "research shows...", which open the two-step health claim on the package of the margarine, and "can contribute...", which is found in one of the two-step health claims on the package of the loaf of bread (Table 2). Some participants perceived that these expressions made the health claims credible, while others perceived the same expressions as giving the appearance of the health claims being credible. In the description below, at first participants' thinking about the expression "research shows", is described, and then participants thinking about the expression "can contribute".

"Research shows"

The general difference shown in the participants' thinking about concepts and expressions used on the two food packages over the categories of description, was also present in their thinking about the credibility of expressions. Accordingly participants in the categories of description 1-3 (long-term health, present health and environment) spontaneously showed concern for, and curiosity about the meaning of the text, while participants in the categories of

description 4 and 5 (ambivalence, and traditional) didn't show concern in that way, but more generally. Therefore the description below is mainly based on thinking expressed in the first three categories.

"Research shows" promotes credibility

About half of the participants in category 1 (long-term health) perceived the expression "Research shows ..." to make the health claim credible. One of them however emphasised the importance of there really being serious research behind the information. The doubts he expressed were diminished by the fact that the margarine is a food product sold in ordinary food stores, which he conceived strengthened the credibility of the health claim.

Concerning these food products, I am not doubtful as everything which is sold in food stores is controlled. (Category 1)

One of the others, when he was caught by the expression, started to think about research on dietary fibre and lactic acid bacteria, with the result that new food products were invented and sold with the purpose to calm down sensitive digestion for example, which he perceived as a mild form of medical treatment. As a farmer himself, this made him think about future tasks for farmers as producers of new kinds of primary products with added nutritive value.

I rather see it like this that those of us who are farmers will maybe use new ideas within this field in the future. [...] Maybe we will more and more produce products which have different wholesome characteristics. (Category 1)

One of the participants in Category 3 (environment), found the expression "research shows" very interesting and credible. To illustrate his credibility, he gave the example that he experienced problem with his stomach, and then started to buy ProViva, a trademark for functional food products (with *Lactobacillus Plantarum* 299v) sold in Sweden.

I myself use ProViva with muesli, and likewise. I have become much, much better in my stomach with that. It is a terrific thing. (Category 3)

A participant in Category 2 (present health), who got the diagnosis diabetes type 1, declared that "research shows" made the claim appear to him as being authoritative.

I think "research shows" gives an authoritative impression. It legitimises the rest of (the claim).[...] I really believe that a low level of saturated fat has a favourable influence on coronary heart diseases. (Category 2)

Among the participants in category 1-3, who in general were found to be interested in knowing more, there were some who judged the expression in relation to their own earlier experiences and knowledge and were accordingly curious about the kind of research referred to on the package of the margarine, which is shown in the following quotation.

I would maybe like to know which research. Is it a small laboratory of their own [...] or is it an international study? It would have been interesting to know what kind of research. (Category 3)

One of the participants in Category 3 (environment) gave suggestions on suitable placements of relevant research information.

I would like short notices from the research world (on the food packages). You read this one month. Next month you get information about something else. It stimulates you to (read). Milk packages are ideal because there is space for a lot of text. (Category 3)

Another one looked upon the health claim as a shortcut to knowledge from the research world.

This with "Research shows...", that is alright to accept, because you can't ask people to read research reports of course, to buy margarine. (Category 1)

"Research shows" gave only the appearance of credibility

The reason for criticism towards the expression "research shows" given by two of the participants in Category 1 (long-term health) was that they didn't believe in information said to be based on research, because it is not certain that it is true. One of them, who while still a child got the diagnosis Diabetes type 1, based her criticism on her experiences that she was deceived by expressions like "light" and "sugar-free", and that she found many people, in her opinion, to be easily duped by sales promotion.

When you are diabetic you have to be very critical, because when you look at a product they write on things "light" and "sugar-free", but it doesn't mean that it is without sugar as the fruit itself contains sugar, and therefore I don't believe that real research was done. I mean that this ("research shows") they can as well have written to promote sale. [...] To tell you something, I have a friend who is the owner of a health food store, and there a lot of junk is sold and people swallow anything. I helped my friend in the shop, and that's why I think I look upon this in another way. I don't believe in this. (Category 1)

The view of the other one, who also didn't believe that true knowledge is behind the expression "research shows", said that the statement as a whole doesn't say a thing about there being other products as wholesome as this. Thinking about her interest in long-term health, and based on the information on the package, she anyhow stated that she maybe will try the margarine.

It is good with a great deal of polyunsaturated and single-unsaturated fats. Maybe I would test it once and if the taste is alright maybe I will buy it again. But I would not let myself be governed by "Research shows." I would not, because there are other things which are important: price, taste and things like that. (Category 1)

Three of the participants didn't believe in the expression "research shows" because they want to judge the wholesomeness themselves. One of them said that he usually bases his judgement of food products on the list of ingredients, and that he doesn't have confidence in what researchers say.

Yes, but "research shows", yes it is of course a bit suspect. Research, what is...? As you know, a lot of research can show anything (whatever you like), just as statistics can. It differs from year to year what is wholesome and what is good. Therefore I prefer to judge myself, if I get to know the content of the product,

and from that myself try to form an opinion about the product, whether it is wholesome or not wholesome. (Category 1)

A little later however, he expressed an explanation about in what way certain content being healthy had increased the credibility.

But surely it is good with some kind of explanation, but it would have been better if they wrote that "research shows" that Omega 3 is good for this and that. [...] Everything that I don't know what it is, is negative I think. Because, just like statistics, research can show that a product is however good, or however bad, it depends on who paid the researcher. (Category 1)

One of the participants in Category 2 (present health) asked for points of reference to be able to judge the healthiness of the margarine.

Still another health margarine! I wonder if it is as healthy really as stated here. Yes I wonder about the content of Omega 3, and I would like to compare, now here the little researcher is coming, compare this one with another margarine, to see if it is worth the money really. (Category 2)

Another one in the same category of description was disturbed that coronary heart diseases are mentioned in the statement, and expressed preference for a more positive approach. In addition he emphasised that personal health also depends on what else you eat.

They could write instead that "research shows" that a low level of saturated fat is more favourable to the body. In that case don't mix in that it has a favourable influence on the cholesterol. I mean it doesn't help of course if a person is fond of salt and salts a lot. Then it doesn't help you however much of this margarine you eat. (Category 2)

The same person questioned the morality of selling this margarine at all as the statement, according to him, could be interpreted as other margarines contributing to coronary heart diseases.

They want to emphasize that this spread is for the prevention of illness, then you can ask yourself actually, why do they produce spread then, if it is like this that you get coronary heart diseases from spread. [...] I think it is a bit of a double standard of morality in the first part here. (Category 2)

Two of the others in Category 3 (environment) felt that the expression "research shows" would have been more credible if it was known who did the research.

Yes, it is after all reasonable. Then I would maybe like to know which research. Is it a small laboratory of their own, the once who do the research, or is it an international study. It would have been interesting to know what kind of research. (Category 3)

The other one felt that the expression lost in credibility due to a lack of a point of reference, and because of that he looked upon the health claims as sales promotion.

"Research shows a low level of saturated fats". Mmm low level. How low should the level be? And favourable, how favourable for the cholesterol level? And it is, you know, not so definitely proved that everyone with a high level of cholesterol will have a heart attack. But I suppose this is the way you have to work out a text when you market a new product. [...] How it is used to try to make use of peoples' uncertainty and ignorance, simply speaking. But that is what they are paid for. (Category 3)

To emphasise that he didn't learn what he expected from the texts on the label, he picked "research shows" and "Omega 3" from the text, and in spite of his carefulness to buy food products naturally and ethically produced and manufactured, expressed resignation.

If "research shows" that this Omega 3 is the best, thus, it is not written anywhere either why it is..., but that you yourself have to imagine that this Omega 3, it... [...] I mean there is no pleasure left in life at last, if you always have to pay attention to live healthy. (Category 3)

To sum up, the credibility of the expression "research shows" differed between consumers. The findings shows that to improve the credibility of the expression "research shows" there seems to be a need for clarification of the origin of the research in question. In relation to what the participants expressed there seems to be a need to restrict the expression "research shows" for results which have a direct and proved connection to the product in question.

"can contribute to"

A number of the participants, spread over the Categories 1-4, found the expression "*can contribute*" in the health claim "Some soluble gel-forming types of dietary fibre in both rye flour and oat bran can contribute to lowering the level of cholesterol in the blood." to be credible, because the producer doesn't promise anything.

(Reads) "Can contribute to", I think it is credible when they don't exaggerate. I think, when they say that it "can contribute to", then they don't promise it is going to. And that they can't of course promise. I think that they are cautious about saying anything which might not be true. (Category 1)

However, still more participants, also spread over the Categories 1-4, found the expression to have the opposite meaning: that is that according to the participants, it gave the appearance of the health claim being credible.

They write "*can contribute to*". They don't write "that it contributes to". They actually don't know. You want to believe that it is true, yes. And, actually, it can't be of any harm with some extra dietary fibre. So, it is not negative to write in this way, I think. (Category 2)

Then there were participants who associated "can contribute" to the dosage and were questioning the statement in relation to the fact that they didn't know how many slices to eat to obtain an effect.

"*can contribute*", but we don't know how and why. Because if they have written "contribute to lower", but they don't. *Can* contribute to, it surely depends on how much you eat, because it is surely not enough with one slice. Maybe you

have to eat ten sandwiches before it can. No, I don't like it. It is a woolly text and people don't read it. (Category 2)

I think it is quite vague. Here is just written "*can* contribute to lower", nothing else. So, they should write that if you eat two slices of this bread you will lower the level of cholesterol. But they don't write that. It is just that it "*can* lower" if you eat these fibres (gel-forming). [...] I don't know what I think about this. They focus on people's illnesses. But it is true, if it really helps and they stand up for that, it is not wrong to say it. But I am a bit doubtful if it really does. How much do you need to eat to get the effect (to lower the level of cholesterol)? Do you need to eat one slice or do you need to eat ten slices? (Category 2)

To sum up, also the less specified expression "can contribute" was judged in different ways. In this case more participants than concerning "research shows" judged the expression to give the appearance of being credible.

"Research shows" in comparison with "can contribute"

The focus in all the interviews was first on the nutrition claims and health claims on the package of the margarine, and then on the package of the loaf of bread. In the conversation, comparisons between the texts on the two food packages were made during the conversation about the texts on the bread. This comparison especially included the expressions "research shows" and "can contribute". In that comparison, it was obvious that more than half of the participants preferred the expression "can contribute". To one of the participants it was important not to exaggerate, which, according to her the expression "research shows" did.

Yes, here (on the package of the loaf of bread) they didn't write "research shows", but expressed themselves a bit better, I think. [...] They don't hide behind something like in "research shows". [...] They express themselves a bit more cautiously, because they say that some soluble gel-forming types of dietary fibres *can* contribute to lowering the level of cholesterol. In other words they don't say they do. [...] I think there is a feeling that it is credible when they don't exaggerate. [...] A bit weaker, and I mean this "research shows" it, it disturbs me somehow, because it is a more dead certain way. I mean, in principle it is the same thing here ("can contribute to lowering"), they whisper research. That you "*can* lower" the level of cholesterol, but the expression is weaker. [...] (Category 1)

Others refer to the fact that when research is referred to, the manufacturer has to be able to verify the truth of the claim, which the participant in the citation below expresses doubts about.

Here ("can contribute to lowering"), they don't need to feel forced to be able to verify something in the text. If you use "research (shows)" you have to be able to verify it. As a consumer you can call the manufacturer and ask, "can you prove to me that research shows this". Then they have to search for it, it is as simple as that. (Category 1)

Another is a bit doubtful about the authority of researchers.

Yes, the truth is that it takes almost a generation before we can answer the question if this is specially wholesome or health promoting. Research can prove a lot but not everything. [...] They refer to an authority which we feel confidence in, like research. You have to believe that researchers are reasonably right, even if they are also wrong sometimes. So I mean on this package (the loaf of bread) they don't refer to research. (Category 1)

In the comparison, only a few of the participants preferred the expression "research shows" to "can contribute". The reason given by one of them was that "research shows" makes the claim serious.

I have a feeling that it is more general if it is not written "research shows". I don't react that much then. It doesn't sound so serious in a way that "some soluble gel-forming dietary fibres *can* contribute". It is easier to take in then if it is written "research shows". Then I take it more seriously in a way, because then I want to learn which research. (Category 3)

He meant that the expression "research shows" made him know that there is research behind the claim, which makes him curious to learn more about it.

Summary

Two expressions found to be especially critical to the credibility of the health claims were "research shows" on the package of the margarine, and "can contribute" on the package of the loaf of bread. About half of the participants conceptualised the expression "research shows" to make the health claim credible, mostly due to the authoritative impression of the expression. The main criticism of the expression "research shows" was due to a general lack of confidence in what researchers say. Also where the expression "can contribute" was concerned, many of the participants were critical, mainly due to the impression of uncertainty in the vague formulation. In a comparison between the two expressions, most of the participants however expressed that they preferred "can contribute" to "research shows" due to the former expression being more humble.

Credibility of health claims tend to be related to understanding of concepts and to the product as such

One of the results was that if concepts used in nutrition claims and health claims were not understood by participants, there was a clear tendency that the credibility of the whole text was questioned. Below some examples are given to illustrate how some of the participants reasoned. Some of the concepts and expressions the participants most commonly were caught by are used in the description.

For instance, the use of Omega 3 in the expression "With Omega 3" on the lid of the package of the margarine gave one of the participants the immediate impression that this product is for health freaks, and not for her. In the conversation it was revealed that the real reason was that the concept was unknown to her.

"With Omega 3", then I think, no, this is for health food freaks. That is probably nothing for me. [...] But the reason is that I don't know the meaning of Omega

3. I don't have that knowledge. It is not only that I think this is for health foods freaks. No, but it is because I don't understand, that is the reason why I don't care. (Category 1)

Some of the participants in Category 1 (long-term health) and Category 3 (environment), who didn't know the meaning of Omega 3, expressed scepticism towards the margarine, and said that they don't buy a food product if the text includes concepts they don't know the meaning of.

I don't buy it more because of the expression "Omega 3, of vital importance to health". On the contrary I regard it as something suspicious which I don't know what it is. Then I would rather choose something where I know what it is about. Even if this is maybe better, I prefer another where I have straight away got an explanation of what it (Omega 3) is. (Category 1)

Yes, I wouldn't choose it. I wouldn't choose it when I don't know what it (Omega 3) is. (Category 3)

These participants in Category 1 and 3, sceptical to the concept Omega 3, were among the once in Category 1-3 who also laid stress upon their scepticism about, and practice of avoiding food products with all kinds of additives.

Also the concept "fatty acids" in the nutrition claim "A healthy balance between different fatty acids" on the lid of the package of the margarine caused resistance to buying the food product when the concept was not fully understood. The participant giving the citation below, was suspicious about the concept "fatty acids". Her confidence in the keyhole-symbol, which can be used in Sweden on food products with low fat or high fibre content compared with other food products in a given food product category, was not enough to convince her.

What kind of fatty acids and what are the advantages by mixing them for example? [...] As I see the keyhole (on the package), then I think it must be wholesome. [...] But still I have no idea about what it means (fatty acids), so if I find another one, another package where the fat content is the same, and which I think is as wholesome as this, then I may choose that one if I better understand what is written there. (Category 2).

Later the same participant, while talking about the texts on the bread, proclaimed that she would rather buy another bread where she felt sure about the meaning of the expressions used. The undefined expression "can contribute" in this case strengthened her decision not to buy the bread.

Mm, I have no idea what it is, "gel-forming types of dietary fibres". And then they are not sure either, as it is just written that it "*can* contribute to lowering". So, I don't know. It doesn't tell me anything as I don't know what it means. No idea. [...] I think I would take another bread where I understand what is written. (Category 2)

Another one condemned the statements on dietary fibre lowering cholesterol level as sales promotion.

I didn't know that dietary fibre lower cholesterol levels, and I consider it to be just a sales promotion, because people watch their cholesterol levels and they want to have dietary fibres. But it (the text) gives me no credibility, certainly not, because this is pure sales promotion, because they know people look for those two factors, but it gives me no credibility. (Category 3)

The findings show that use of concepts that consumers don't understand might be a barrier to credibility of statements about health-conducive properties on food packages, and also tend to be a reason for them to avoid buying the food product in question.

Summary

The findings show that the most critical points in how nutrition claims and health claims on the two food packages were conceptualised by the participants in the study were their *understanding* of concepts and expressions and the judgment of their *credibility*. The use of concepts and expressions that consumers don't understand at all, or have just a limited understanding of, was found to be a barrier to understanding the intended meaning of nutrition claims and health claims, and also runs the risk of the consumer's decision not to buy the food in question. It was also shown that most participants found the expression "can contribute" more credible than "research shows" due to the former expression being perceived as a more humble way to express that research was done. Furthermore it was shown that lack of understanding of concepts and expressions tends to diminish the credibility of the texts, which also runs the risk of sales/use of the food product being hampered. It was also shown that most of the participants preferred the health claims where promotion of health was emphasised rather than those associated with illness.

An overall comparison of the participants' thinking about the nutrition claims and health claims, and other texts on the margarine and the loaf of bread respectively showed the importance of the use of well-known concepts to the participants' judgement of the food products. In this study, the judgement was to the advantage of the loaf of bread.

4 Summary and discussion

Use of nutrition claims and health claims in labelling of food products is frequent, not least on food products categorised as functional foods. Earlier studies have shown that consumers frequently use statements on health conducive properties on packaged food labels in their choice of food products. Many consumers however find the content of them confusing, and want them confirmed by other trusted sources of information. Earlier studies have also shown consumers to generally have a low understanding of concepts and statements made. Information on nutrition and health on packaged food labels apparently seems to presuppose more profound knowledge of nutrition than most consumers have, which causes difficulties for many consumers to make use of such information in intended ways. Earlier findings like this gave rise to the present research project.

The aim of the study was to investigate how, when consumers are presented with nutrition claims and health claims on packaged food products, their thinking about such texts on food products is affected by various types of food-related experiences.

Material and methods used in the study and the findings are discussed below. Finally, some conclusions in relation to the practical usefulness of the findings are discussed.

Material and methods

The empirical study comprised a group of 30 Swedish consumers aged 25 to 65. The participants were selected among 80 participants in a previous questionnaire study included in the same research project, who with their signature indicated that they were interested in a conversation on texts on packaged food labels. The basis for selection of the participants in the interview-study was a good representation of both sexes, widely differing ages and levels of education, some foreign-born, and of persons with and without experience of food-related health problems.

For different reasons, some of the possible interviewees were no longer available. One reason was shortage of time, another was illness in the family and a few left the place. As foreign-born persons who grew up abroad comprise an important group of consumers in today's Sweden, the aim was to include some foreign-born participants in the interview study. In 1999, the year the data collection took place, 11 percent of the population in Sweden was foreign born. This was equal to the percentage of foreign-born persons in the community where the study took place, and among the ones who responded to the questionnaire study which preceded the interview study. However all the foreign-born participants who signed that they were interested in taking part in the interview study withdrew. In an earlier interview study by the present author (Svederberg 1996, 1997) which included foreign-born persons who grew up abroad, the participants were found through their own associations. The sampling in that study was done in the form of snow-ball sampling, which in my experience is a convenient way, if not the only way possible, to sample foreign born participants for interview studies. The present study was limited by the planned-for sampling.

Another aspect of the method of sampling is the predominance of participants really interested in food issues. However, in a qualitative study of this kind the intention is not to generalise the results as in quantitative studies. Instead the intention was to elucidate possibilities of fruitful communication of nutrition claims and health claims on food packages in an explorative way. With the qualitative approach applied, questions were elucidated that it would not have been possible to throw light upon in a questionnaire study.

The open and explorative form of data collection comprised individual semi-structured interviews, where the point of departure was nutrition claims and health claims found on the package of a margarine and a loaf of bread, both sold in Sweden. One reason for the choice of these food products was that they were new on the market at the time of the planning and carrying out of the study. The packages of both of them included health claims in two steps, in accordance with rules agreed on within the Food Industry in Sweden (Health Claims in the Labelling and Marketing of Food Products 1997). Another reason for these choices was an interest from the Swedish Nutrition Foundation in Sweden, who currently hold a consultative function regarding the application of the above mentioned rules, to include food products with health claims of this kind in the study. The choices were thus not made on the request of the manufacturers of the two products in the study.

All the interviews were carried out by the author and tape-recorded. In my opinion, it is essential that all interviews in qualitative interview studies are carried out by the researcher herself/himself. This is due to the interpretative work already starting in the interview situation, e.g. by the way specific main questions in the interview are expanded on in an explorative way. The tapes were transcribed word-by-word by a skilled person hired for this purpose. A parallel listening to the tape-recorded interviews and reading of the transcripts (including slight editing) guarantees the quality of the transcripts.

The basis for the analysis comprised around 600 A4-pages of interview transcripts (14-32 pages per interview) which in my experience is about what it is possible to handle in a qualitative interview study. A warning about including too large a quantity of interview data in qualitative analysis was for instance given by Kvale (1996).

The qualitative analysis was carried out using the methodology of contextual analysis. The analysis had an interpretative character which aimed at categorising whole-characteristics of how food-related experiences are expressed in consumers' thinking about nutrition claims and health claims. Computer support by means of the computer programme Atlas.ti (Muhr, 1997) was used in the analysis process. The possibility of computer support in qualitative analysis of interview data was not yet accessible when I first started to use the methodology of contextual analysis in my research. The development of such possibilities convinced me that it was worth trying. An overall judgement of the use of computer support in the analysis of interview data in this study is that the computer programme Atlas.ti has qualities that indeed facilitated the work. A comprehensive description of how the interview data was processed step by step was previously published in an on-line journal (Svederberg, 2001).

Results

The findings show that most of the participants, to the extent that they understood the concepts used and regarded the expressions employed as being credible, were positive in their

assessment of nutrition claims and health claims on food products. The generally positive attitude to such claims on packaged food labels support results from a structured interview study including 241 participants by Fullmer, Geiger and Parent (1991). The participants in the present study who were critical of the health claims were critical in part to the emphasis on the prevention of illness rather than the promotion of health. One positive opinion was that nutrition claims and health claims are a shortcut to knowledge. Positive opinions were however hampered in cases where the meaning of concepts and expressions was not understood, and judged as not credible.

Concepts and expression

All the participants shared the opinion that it is generally difficult to understand many concepts and expressions used on packaged food labels. Of all the concepts used on the package of the margarine and the loaf of bread in this study, Omega-3 was most commonly paid attention to. Just a few knew that Omega-3 is found in fish-oil. This result supports results from a focus group study in Great Britain (National Consumer Council 1997) where it was also found that Omega-3 was not well known, and consequently questioned.

Other concepts/expressions participants in the present study were puzzled about, or misunderstood, were "healthy balance", "fatty acids", "low-fat", "fat content 40%" and "low level of saturated fats" on the package of the margarine. On the package of the loaf of bread the concept "dietary fibre" was well-known, but the expression "soluble gel-forming types of dietary fibres" was to a great extent questioned. In accordance with these findings, Reid and Hendricks (1994) found that the claim "low in saturated fat" was often misunderstood, and that consumers' understanding of terms used in nutrition information is low (Daly 1976, Jacoby, Chestnut & Silberman 1977, Heimbach 1982, Michel et al. 1994, Reid, Conrad & Hendricks 1996).

Participants in the present study, who expressed special concern for their own and their families' health situation, Categories of description 1-3, were found to express an eagerness to learn the meaning of concepts and expressions used. Many of them searched for clarifications on the packages, a finding which confirms results from other studies, which also found a number of consumers not to be satisfied with the information given on the front-label and to look for further information elsewhere on the package (National Consumer Council 1997, Hrovat et al. 1994, Reid & Hendricks 1994, McCullum & Acterberg 1997). The findings in the present study however show that participants who searched for information to clarify the meaning of concepts and expressions employed in the statements made on the packages of the margarine and the loaf of bread, were unable to find what they sought when they looked elsewhere on the packages. This is of course far from satisfactory from the point of view of the consumer. Some participants also looked for points of reference to be able to judge the fat content in the margarine and the content of dietary fibre in the loaf of bread, which they also didn't find on the package.

Among the participants in the present study some were very sceptical to additives in food products, especially among those concerned about environmental issues. Also other studies have shown consumers to be sceptical of additives (Holm & Kildevang 1996, Sjöberg 1996). Participants who primarily expressed concern for their traditional eating habits showed a tendency to accept their lack of understanding of concepts and statements on the packages, and rather expressed concern for palatability. This suggests that offering potential consumers the possibility to taste new products shouldn't be neglected.

On requests to respond to the nutrition claims and health claims on the package of the margarine and the loaf of bread, the most common comment among those participants was "it sounds healthy". One of the participants, whose thinking was characterised by an ambivalence between her traditional eating habits and care for health, admitted that she avoided reading such texts on packaged food labels to avoid feeling stupid. Easily accessible information might invite consumers like her to start reading.

The findings in the present study also showed that lack of understanding of concepts used in nutrition claims and health claims had a tendency to contribute to lack of credibility of the whole text, and suspiciousness of the product. However in some cases this suspiciousness was counterbalanced by confidence in manufacturers, retailers and/or Swedish food legislation, which shows the importance of trademarks with a good reputation and reliable food legislation.

Two expressions found to be especially critical to the credibility of the health claims were "research shows" on the package of the margarine, and "can contribute" on the package of the loaf of bread. About half of the participants conceptualised the expression "research shows" to make the health claim credible, mostly due to the authoritative impression of the expression. The main criticism of the expression "research shows" was due to a general lack of confidence in what researchers say. Also concerning the expression "can contribute", many of the participants were critical, mainly due to the impression of uncertainty in the vague formulation. In a comparison between the two expressions however, most of the participants expressed that they preferred "can contribute" to "research shows" due to the former being a more humble expression.

There is no doubt that the use of concepts and expressions that consumers don't understand at all, or have only a limited understanding of, is a barrier to understanding the intended meaning of statements about the food product's health-conducive properties. It was also shown that lack of understanding means a risk that the consumer decides not to buy the food in question. Furthermore it was shown that lack of understanding of concepts and expressions used in nutrition claims and health claims tend to result in lack of credibility of the texts, which also might cause sales of the food product to be hampered, which certainly was not the intention of the manufacturer.

The findings show that a profound discussion is needed about where interested consumers with different previous knowledge can be offered a deeper knowledge about concepts and expressions as a basis for their understanding of nutrition claims and health claims on packaged food labels. In my opinion, and from a consumer perspective, such a discussion is urgently needed to facilitate the individual consumer's legitimate right to make informed choices.

A cultural educational perspective as a basis for a communicative approach

A perspective where concepts and expressions are the centre of attention in communicating messages about nutrition and health is not always enough. In my opinion, this is particularly true among consumers whose thinking about foods is based on a traditional view of eating habits, where the taste of food which they are used to is emphasised.

Several studies have shown choice of food to depend on the perceived meaning of current foods within the individual's lifestyle and cultural identity (Caplan 1997, Lupton 1996, Murcott 1996, Salomonsson 1987, Scholliers 2001, Svederberg 1997). This means that the

consumer is not passive, but decides herself/himself which meaning a food product, and a message in connection to a certain food product, has in the situation where she or he meets it. The way in which information about health conducive properties in foods are perceived by the individual consumer is in consequence a question about how they are communicated, that is if the communication manages to mediate that the food in question adds value to the individual's cultural identity or not.

From an educational point of view, the ideal is that food-related experiences result in attention to informative texts on packaged food labels as a basis for reflective thinking about the food product in question, and as a prerequisite for informed choice. In educational terms this means a changed relation between the reader of the text and the food product takes place in such a way that the meaning of the food product changes. The undesirable result of food-related experiences is that the attention in a non-reflected way is turned away from the text and a possible changed relation: that is, a changed meaning of the food product doesn't take place.

One possible step to take to increase the attention to nutrition claims and health claims to consumers could be to start, not only from the varying thinking about the concepts and expressions used in such claims, but also from the five categories of description so that single food products are looked upon as there being a potential for the food product in question to obtain meaning in the consumer's lifestyle and cultural identity.

In relation to the five categories of description, I think a pedagogical approach with these two perspectives to catch the participants attention could be worth trying. The educational perspective concerns compliance with the individual's wish for easily accessible well-founded information about concepts and expressions used on packaged food labels at the purchase moment from the starting point of the consumer's thoughts on the subject. From the point of view of the whole-characteristics of thinking among the participants in the different categories of description, a possibility might be to start from the different categories of description, including the fact that in their thinking, different consumers are directed at different parts of texts, and with different intensity.

The other educational approach concerns the cultural perspective, where the five categories of description could be looked upon as five different cultures, with certain common cultural denominators. In my opinion, this is an approach which might be especially fruitful among consumers bound to their traditional eating habits, where I think it is important that to be accepted, new food products like functional foods also bring something meaningful to their cultural identity.

Conclusions

The findings show that most of the participants, to the extent they understood the concepts used and regarded the expressions employed as being credible, were positive in their assessment of nutrition claims and health claims of the food products in question. Those participants who were critical of the health claims made were critical in part that prevention of illness rather than the promotion of health was emphasised. The findings also show that participants who searched for information to clarify the concepts and expressions employed in the statements made regarding the margarine and the loaf of bread were unable to find the clarification they sought when looking elsewhere on the package for an explanation. In view of the considerable trust that most consumers appear to have generally in information

regarding nutritive value and health-conducive properties which appear on food package labels (Svederberg et al. 2002a), it is far from satisfactory that statements and health claims contain concepts and expressions that most consumers cannot be expected to understand. It is still less satisfactory when consumers who look for clarifications of concepts and expressions elsewhere on the package are unable to find them. There thus appears to be good reasons to consider carefully how consumers who desire a better understanding of the concepts and expressions used in nutrition claims and health claims on food package labels can best be helped to achieve this knowledge. This in turn would help them to improve their possibilities to make informed choices about packaged food products which satisfy their needs and desires.

From an educational point of view, as well as from a democratic point of view, it is essential that consumers' possibilities to make informed choices are facilitated. In my opinion, there is a need for easily comprehensible information at different levels, adapted to the previous knowledge of different groups of consumers. As the space on the packaged food labels usually is extremely limited, a discussion is needed about how this space could be utilised in the best possible way, with the aim to improve the consumer's possibility to choose foods from their understanding of the nutrition claims and health claims. That is, to make informed choices. In my opinion, it is a matter of meeting the consumers who are eager to learn at the point where they are in their understanding. Maybe it is time to start from a couple of question: What is of interest for the consumer to know when he/she stands at the shelf in the grocer's shop with a packaged food in the hand, and how to offer this knowledge? When the space on the food package is not enough, where and in what way can we offer the consumer who is eager to learn, additional explanations to meet the consumer's present level of understanding? Is a monitor with a search tool well adapted to its purpose in the shop worth trying?

A bigger educational challenge might be to take the position of consumers who are bound to their traditional eating habits with a preference for tastes of food they are used to. In these cases it is maybe time to ask ourselves how to find a place for new and healthier food products within their traditional eating habits. Maybe a possible approach to communication is a perspective where single food products are looked upon as having the potential to carry meaning within their traditional eating habits, as mentioned above.

Finally, and with support from some well-informed participants in the present study, it is time to ask ourselves how consumers obtain knowledge about a single food product's placement in a whole of a balanced diet.

References

Asp, N.-G. (2002). Health claims within the Swedish Code. Generic claims and product-specific physiological claims in relation to current European and international development. *Scandinavian Journal of Nutrition*, 46 (3), 131-136.

Caplan, P. (Ed.) (1997). *Food, Health and Identity*. London: Routledge.

Daly, P.A. (1976). The response of consumers of nutrition labeling. *The Journal of Consumer Affairs*, 10 (2), 170-178.

Fullmer S., Geiger C.J. & Parent C.R.M. (1991). Consumers' knowledge, understanding, and attitudes toward health claims on food labels. *Journal of American Dietetic Association*, 91 (2), 166-171.

Heimbach J.T. (1982). Public understanding of food label information. Food and Drug Administration, Washington D.C. 24 pp.

Health Claims in the labelling and Marketing of Food Products. (1997). The Food Industry's Rules (Self-Regulating Programme). Lund: The Swedish Nutrition Foundation.

Holm L. & Kildevang H. (1996). Consumers' views on food quality. A qualitative interview study. *Appetite*, 27, (1), 1-14.

Hrovat K. B., Harris K. Z., Leach A. D., Russell B. S., Harris, B. V. & Sprecher, D. L. (1994). The new label, Type of Fat, and consumer choice. *Archives of family medicine*, 3 (Aug), 690-695.

Jacoby J., Chestnut R. & Silberman W. (1977). Consumer use and comprehension of nutrition information. *Journal of Consumer Research*, 4, 119-128.

Kreuter M. W., Brennan L. K., Scharff D. P. & Lukwago S. N. (1997). Do Nutrition Label Readers Eat Healthier Diets? Behavioral Correlates of Adults' Use of Food Labels. *American Journal of Preventive Medicine*, 13(4): 277-283.

Kvale, S. (1996). *Interviews. An introduction to qualitative research interviewing*. Thousand Oaks, Calif.:Sage.

Lupton, D. (1996). *Food, the Body and the self*. London: Sage.

Marton, F. (1981). Phenomenography. Describing conceptions of the world around us. *Instructional science*, 10, 177-200.

Marton, F. & Booth, S. (1997). *Learning and awareness*. New Jersey: Lawrence Erlbaum Associates.

McCullum, C. & Achtenberg, C.L. (1997). Food shopping and label use behavior among high school-aged adolescents. *Adolescence*, 32 (125), 181-197.

Michel P. M., Korslund M.K., Finan A. & Johnson J. (1994). Food label reading habits of WIC (Special supplemental food program for women, infants and children) clients. *Journal of Nutrition Education*, 26, (3), 146-148.

Mischler E. G. (1986). *Research interviewing. Context and narrative*. Cambridge, Mass: Harvard University Press.

Muhr, T. (1997). *Atlas.ti Visual Qualitative Data Analysis Management Model Building in Education Research & Business. Short User's Manual*. Berlin: Scientific Software Development.

Murcott. A. (1996). Food as expression of identity. In S. Gustavsson and L. Lewin (Eds.) *The future of the nation state*. Stockholm: Nerenius & Santérus.

National Consumer Council (1997). *Messages on Food. Consumers' use and understanding of health claims on food packs*. (PD 09/D1/97). London: National Consumer council.

Reid D.J., Conrad S.A. & Hendricks S.M. (1996). Tracking nutrition trends, 1989-1994. An update on Canadians' attitudes, knowledge and reported actions. *Canadian Journal of Public Health*, 87, (2), 113-118.

Reid D.J. & Hendricks S.M. (1994). Consumer understanding and use of fat cholesterol information on food labels. *Canadian Journal of Public Health*, 85, (5), 334-337.

Scholliers, P. (Ed.) (2001). *Food, drink and identity. Cooking, eating and drinking in Europe since the Middle Ages*. Oxford: Berg.

Samuelsson, A. (Red.) (1987). *Mera än mat*. (More than food). Stockholm: Carlssons.

Sjöberg, L. (1996). Kost och hälsa - riskuppfattningar och attityder. Resultat av en enkätundersökning. (Diet and health - conceptions of risks and attitudes. Results from a questionnaire). (Rapport 1/96). Uppsala: Livsmedelsverket.

Svederberg, E. (1996). Conceptions behind choice and use of food. *Scandinavian Journal of Nutrition/Näringsforskning*, 40, (2) Supplement 31, S98-S100.

Svederberg, E. (1997). *Tänkande bakom val och användning av livsmedel. Faktorer som medverkar till eller utgör hinder för förändring av matvanor i hälsofrämjande riktning*. (Lund Studies in Education 1). (Conceptualizations in relation to choice and use of food. Circumstances that contribute to compliance or lack of compliance with dietary guidelines conducive to health.) Lund: Lund University Press.

Svederberg, E. (2001, December). Consumers' views regarding health claims on food packages. Contextual analysis by means of computer support (48 paragraphs). *Forum Qualitative Sozialforschung / Forum: Qualitative Social Research* [On-line Journal], 3(1). Available at: <http://www.qualitative-research.net/fqs/fqs-eng.htm> [07-19-2002]

Svederberg, E., Asp, N.-G., Laser Reuterswärd, A. & Svensson L. (2002a). Läser och förstår konsumenter texter och symbolmärkning om näring och hälsa på livsmedelsförpackningar? (To what extent consumers read and understand text and symbols on food packages). (Pedagogiska rapporter 78). Lund: Pedagogiska institutionen, Lunds Universitet. Available at: <http://www.pedagog.lu.se/forskning/skrifter/rapport78.pdf>

Svederberg, E., Gustafsson, J.-E., Asp, N.-G., Laser Reuterswärd, A. & Svensson, L. (2002b). Earlier experiences influence consumers' reading and use of nutrition information on food packages. (Submitted).

Svensson, L. (1985). Contextual analysis: The development of a research approach. Paper presented at the 2nd Conference on Qualitative Research in Psychology. Leuden, The Netherlands.

Svensson, L. (1997). Theoretical foundations of phenomenography. *Higher Education Research and Development*, 16, (2), 159-171.

Svensson, L. (2001). *Contextual analysis*. (Preliminary version.) Lund: Department of Education, Lund University.

The Swedish Research Council (1999). Etikregler för humanistisk-samhällsvetenskaplig forskning. (Rules of ethics for art subjects and social science research.) Available at: http://www.vr.se/humsam/index.asp?id=24&dok_id=838

Lunds universitet
Pedagogiska institutionen
Box 199
221 00 LUND, Sverige
Tel 046-222 00 00

Lund University
Department of Education
Box 199
S-221 00 LUND, Sweden
Tel +46-46-222 00 00

The following report series are published by the Department of Education at the University of Lund, Sweden:

Pedagogical reports	ISSN 0347-8467
Pedagogical bulletin	ISSN 0349-0009
Pedagogiska rapporter	ISSN 0348-369X
Pedagogiska uppsatser	ISSN 0349-2508

The Department of Education and Psychology at Lund-Malmö publish jointly the monograph series:

Studia Psychologica et Pædagogica, Series altera ISSN 0346-5926

PEDAGOGICAL REPORTS

1. Flinck, R. The telephone as an instructional aid in distance education. A survey of the literature. 1975.
2. Bååth, J A. Submission density in nine correspondence courses. A pre-study to experiment series 1. 1975.
3. Kallós, D. The study of pedagogical processes. 1976.
4. Flinck, R. The telephone used in an experiment of distance education at university level. A pilot study. 1976.
5. Bååth, J A. Postal contacts and some other means of two-way communication: Practices and opinions at a number of European correspondence schools. 1976.
6. Johannesson, I. The teaching of immigrants' mother tongue in Sweden. A report prepared for UNESCO. 1976.
7. Nelsson, O. Mathemagenic activities and teaching. A review. 1976.
8. Bååth, J A & Wångdahl, A. The tutor as an agent of motivation in correspondence education. 1976.
9. Flinck, R. Why do adults participate in education? 1977.
10. Wångdahl, A. Types of face-to-face contact in combination with correspondence education. A survey of the literature. 1977.

11. Johannesson, I. Training of bilingual pre-school teachers for the mother tongue instruction of children of immigrants. A report prepared for UNESCO. 1979.
12. Lennung, S-Å. Application of job characteristics theory and job enrichment to professionals: A theoretical analysis. 1980.
13. Wångdahl, A. Who are the correspondence students and whatabout their handicap of isolation. 1980.
14. Brenner, S-O, Tellenback, S & Löfgren, H. Teacher stress - a structural comparative analysis. 1981.
15. Löfgren, H & Ouvinen-Birgerstam, P. A bilingual model for the teaching of immigrant children. 1981.
16. Tellenback, S. Teacher stress: Complex Model Building with LISREL. 1982.
17. Mbuende, E A. Teacher education for an independent Namibia: Problems and prospects. 1987.
18. Rosenqvist, J. OECD/CERI-Project: Integration in the school. Report of case-studies undertaken in Sweden. 1993.
19. Ericsson, E. Women's studies in Sweden. Report on the Commission of the European Union. 1995.
20. Bystedt, S. Innovation and Learning – a theoretical enquiry into the relationship between innovation and learning. 2001.
21. Svederberg, Eva. Consumers' views regarding health claims on two food packages. 2002.