Journal of the
International Institute for Terminology Research
– IITF –

TERMINOLOGY SCIENCE & RESEARCH

Vol. 23 (2012)

Publisher: International Institute for Terminology Research (IITF)

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FOREWORD

Volume 23 (2012) of the Journal Terminology Science and Research contains one of the papers presented by Viktor Smith and Henrik Selsøe Sørensen at the IITF-organized colloquium 'Language Policy and LSP Planning', held on August 22 and August 23 in 2011 in connection with the 18th European Symposium on Language for Special Purposes at Perm State University, Russia. Professor Heribert Picht, who was the convener and organizer and of the colloquium on behalf of the IITF, had invited a number of speakers as well as respondents for each paper. Six papers were presented, and eight respondents presented their responses to the paper which they had had the opportunity to acquaint themselves with before the colloquium. Two papers presented at the colloquium have been published in the Volume 22 (2011) of the Journal Terminology Science and Research. The program of the colloquium is included in the end of this volume.

The paper presented in this volume is a joint article of four authors: Viktor Smith (Denmark), Henrik Selsøe Sørensen (Denmark), Niina Nissilä (Finland) and Serguey Shelov (Russia). The paper integrates the comments made by the respective invited respondents, namely Nissilä and Shelov.

Vaasa, December 2012

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WHEN COGNITIVE SCIENCES MEET REAL LIFE: DECODING THE SEMIOTIC COCKTAIL OF FOOD LABELS FROM A FAIRNESS PERSPECTIVE / FairSpeak Paper given at the IITF COLLOQUIUM ON LANGUAGE POLICY AND LSP PLANNING during the symposium[1]

Abstract

Consumers in general pay little attention to food labels. The study of expert-to-layperson communication related to food labels integrates many aspects of what cognitive sciences are about: Knowledge modelling and knowledge transfer, termhood and precision as well as fuzziness, interaction between text, pictures, colours and sensory qualities of a package, expectations and attention. All of this is present on a very limited space in a concentrated form. A consumer who is to make an informed choice of a food product risks being misled by the bombardment with elements of information which interact with his/her existing knowledge, expectations and buying motivations. A cross-disciplinary Danish research project provides a new, shared frame of reference for food manufacturers, authorities, and consumer organisations for assessing in-store food-to-consumer communication from a fairness perspective. The aim is to reduce the misleading hazards in food labelling and suggest how to improve food label communication.

1 BACKGROUND, AIMS, AND SCOPE: FAIRSPEAK, A FOOD LABELLING PROJECT

Everybody will know what a food label looks like, but most consumers do not pay much attention to them while shopping on a daily basis. In fact, food labels involve several disciplines within cognitive sciences, e.g. knowledge modelling and knowledge transfer, expert-to-layperson communication, the data-information-knowledge-wisdom trail, termhood and precision on the one hand, fuzziness, multimodal interaction between text, pictures, colours and sensory qualities of a package, expectations and attention on the other. All of this is present and analysable in a very limited space which may be the size of a package of chewing gum or of a soft-drink bottle. A consumer who is to make an informed choice of a food product has all chances of being puzzled and possibly misled by the bombardment with elements of information which must be matched with his/her existing knowledge and expectations and motivations for buying that particular product.

A cross-disciplinary Danish research project *Spin or fair speak – when foods talk* (http://www.fairspeak.org)[2] is trying to provide a new, shared frame of reference for food manufacturers, authorities, and consumer organisations for assessing in-store food-to-consumer communication from a fairness perspective. Whereas *misleading information* has clear legal

[1] This article elaborates in particular on Smith et al. 2011 and discusses and exemplifies challenges related to the linking of consumer and expert knowledge on food labels.

[2] This research was funded by the Programme Commission on Food, Nutrition, and Welfare under the Danish Strategic Research Council, grant No 09-061379/DSF.

implications related to a deliberately deceptive packaging, the fairness perspective covers the grey zone where the complete cocktail of information on a food label may give consumers a wrong idea about the product - deliberately or not - but in a way which is not necessarily illegal. Fairness in food label communication means avoiding pitfalls here based on an analysis of all elements of a label in relation to the intended group of consumers. A key aim is to develop experimental techniques for testing the fairness-reducing hazards of individual food labelling[3] solutions on empirical grounds.

The cross-disciplinary framework and meta-language has been developed to support these purposes, allowing the researchers involved to identify the variables of interest in sufficiently precise and mutually understandable terms. In this article we present selected elements of the resultant framework (see also Smith et al. 2011) whereas more detailed analyses of individual conflict scenarios and original experimental findings are reported in separate studies.

On a still more diversified food market, consumers are increasingly left to base their purchase decisions on what the product "says" about itself through words, texts, figures, and images on the packaging rather than on exact knowledge of the product inside (Grunert & Bech-Larsen 2005, Clement 2007). Up to 80% of our daily purchase decisions are made in-store and take us a few seconds on average, though the exact figures vary across studies and products (e.g. Hoyer 1984, Pieters & Warlop 1999). This increases the risk that consumers feel misled by what the packaging "told" them in the purchase situation when later comparing it to the actual product or to information gained from other sources or elsewhere on the same package – e.g. when reading *0,4% dried avocado powder* on the back of a product that presents itself as *guacamole dip*.[4] However, drawing a sharp line between fair product information, justifiable "sales talk", and deliberate or semiconscious attempts to mislead consumers is not a trivial task. This is particularly true in that majority of cases where the matter is not settled *a priori* by detailed food standards, but fall under general legal provisions against misleading food labelling (see section 2) or wider notions such as business ethics and corporate social responsibility (CSR).

This paper integrates and further expands upon material presented in Smith 2010, Smith et al. 2010, Selsøe Sørensen 2008. An attempt is made to identify some cognitive aspects on the consumer side which are crucial for achieving some degree of success when complicated and partly very specialised expert information must be delivered to an extremely uneven audience of consumers under space and time constraints as is the case with food labels. An important success criterion is that the information should be perceived as fair in that the multiple pieces of information do not clash or overshadow each other and thereby become confusing.

2 THEORETICAL CONTEXT AND EMPIRICAL BASIS

In several respects, the mechanisms underlying consumers' decoding of food packages during everyday shopping have not been fully dealt with in existing research. From a terminological perspective, it is a showcase for expert-to-layperson communication which demonstrates several of the challenges involved in such communication. In the marketing and consumer behaviour literature, the main focus is on consumers' attention, preferences, and choices, rather than on the risk of misleading them. Furthermore, empirical research in these fields tends to focus on either global models of consumer decision-making (for reviews, see e.g. Erasmus, Boshoff & Rousseau 2001, Hansen 2005) or the effect of isolated stimuli such as price units (e.g. Mitchell, Lennard & McGoldrick 2003) or nutrition and health claims (van Trijp & van der Lans 2007, Grunert, Wills & Fernández-Celemín 2010). More systematic analyses of the entire cocktail of verbal and visual stimuli on the individual package with a view to its potential for misleading consumers must be sought in a different field, namely commercial and consumer protection law (Howells, Micklitz & Wilhelmsson 2006, MacMaoláin 2007, FSA 2008). However, assessments of misleadingness in these fields do not traditionally rely on empirical evidence or explicit theorising beyond the sphere of jurisprudence, but on common-sense judgments made by

[3] Here and below, the term "labelling" is used with reference to any potentially informative elements on the packaging in accordance with EU Labelling Directive 2000/13/EC, Article 1,3(a).
[4] Case No: 2006-Ø2-274-01918.

lawyers and government officials regarding the "likeliness to mislead". Harmonisation of national rules and practices across the EU member states has however fostered an increasing call for "harder" evidence to underpin legal decision-making in the present and several other fields, drawing on results gained in other areas of research than strictly legal ones, notably those often subsumed under the heading of cognitive science(s) (Legrand 1996, Incardona & Poncibò 2007, Engberg 2007, Smith 2007, Trzarskowski 2010).

In the following, selected principles and insights from the aforementioned sciences, including semiotics, cognitive linguistics, experimental psycholinguistics, visual perception, and knowledge management, will be drawn upon to bridge the gap between the sales-oriented approach of marketing and legal concerns for consumer protection and fair competition. At the same time, a step is taken towards identifying in-store product-to-consumer communication as a type of specialised communication in its own right, as distinguished from such broader fields as advertising and market communication in terms of both communicative setting and the academic, public, and commercial interests motivating the research. Apart from identifying a number of salient features of this form of communication, a key objective of the FairSpeak project is to contribute to the optimisation of future best practices, particularly by encompassing fairness evaluations, thus meeting Göpferich's (2000) call for bringing the study of professional genres beyond the mere description and imitation of existing practices.

A major catalyst for identifying the variables and conflict scenarios of interest was an in-depth review of 821 cases on misleading food naming and labelling brought before the Danish food authorities during the period 2002-2007 (Smith et al. 2009). The cases were initiated either by complaints from individual consumers, consumer organisations, or competing companies, or by the authorities themselves as a result of their monitoring activities. Apart from registering, classifying, and comparing the formal circumstances, factual content, and outcome of the cases, the common-sense assumptions and arguments put forward by the immediate actors were transposed into more exact theoretical terms suited for formulating operational research questions to be tested empirically.

This helped identify the key elements of the resultant conceptual framework, and brought forward authentic cases of discrepancies in the cognitive structures on the consumer side and the manufacturer side. The overall goal is to provide evidence for the relativity of the fairness concept when the interaction between the extremely varied cognitive resources of the different consumers is related to the often highly specialised knowledge condensed on food labels. Extra complications reside in the fact that a multitude of potential decision parameters may come into play when a decision to buy is taken, and that the decision is often taken under time pressure in the supermarket.

Some legal aspects of relevance to the fairness issues raised here must be touched upon briefly before getting into the cognitive details. A general prohibition against misleading labelling and presentation of food products is stipulated by Article 16 of the EU Food Regulation 2002/178/EC and further specified by the Labelling Directive 2000/13/EC, as implemented in the national legislation of the EU member states. While the term "misleading" is not in itself specified in the provisions mentioned, the Unfair Commercial Practices Directive 2005/29/EC reflects the general understanding of the term within EU law in Article 6:

A commercial practice shall be regarded as misleading if it contains false information and is therefore untruthful or in any way, including overall presentation, deceives or is likely to deceive the average consumer, even if the information is factually correct, in relation to one or more of the following elements,[5] *and in either case causes or is likely to cause him to take a transactional decision that he would not have taken otherwise: […]*

It follows that the provision applies to cases where the so-called average consumer either *has* demonstrably been misled or is *likely* to be misled in the sense indicated. It is the so-called "likely-to-mislead" test that predominates in current practice while empirical proof is provided in rare instances

[5] "The following elements" refers to an extensive list of product characteristics and other essential circumstances with regard to which the consumer may potentially be misled, following immediately after the passage quoted.

only. The FairSpeak Project aims at providing such harder evidence on selected conflict scenarios of general (generic) interest in order to support the development of future practices, including best practices within the food industry itself. This calls for an operationalisation of the legal concept of misleadingness, i.e. making the criteria "measurable", and this is where the cognitive aspects are highly relevant, given that an "average consumer" can only be defined as such based on his or her cognitive resources. For one thing, the definition poses obvious challenges in terms of predicting exactly when and how factually correct information may be potentially misleading. Furthermore, the definition presupposes a direct connection between consumers' potentially misguided expectations and the influence thereof on their transaction decisions.

This raises a methodological question: Should empirical assessments of misleadingness focus on consumers' knowledge, expectations, their actions, or a combination hereof? Empirical consumer behaviour research indicates that consumers often do not behave as rationally as presupposed by EU legislators, in that their choice may also be influenced by factors such as curiosity, spontaneous emotional responses, or the mere fact that the packaging attracted their visual attention (Bagozzi, Gopinath & Nyer 1999, DeBono, Leavitt & Backus 2003, Clement 2007). Has a consumer been misled when (s)he took a quick glance at the packaging without scrutinising it, but felt disappointed later on? Perhaps not, but many daily purchase decisions are bound to be made in that way, unless the consumer wants to spend the whole day in the supermarket.

None of this alters the fact that consumers regularly try to make conscious choices with regard to essential food properties such as origin, nutrition value, and animal welfare, and may feel misled when the labelling turns out to have led them astray in such respects. Moreover, there is a wide consensus across EU societies that such consumer attitudes and behaviours should be supported. A viable path therefore seems to be to focus on behaviours where consumers try to make a *preference-conscious choice* given the time and knowledge available to them. Experimental procedures which combine measures of expectations and behaviour in one and the same task are suitable for this purpose. An example could be the following instruction to a consumer during a task with time pressure: "Go for the healthiest alternatives". The further methodological implications of this are beyond the scope of this article.

The EU law does not refer to just any consumer but to the *average consumer*. This idealised character was originally developed by the European Court of Justice as a benchmark for common-sense reasoning in individual cases. In the following we will nevertheless argue that a more systematic qualitative modelling of selected cognitive structures and quantitative assessments of general knowledge levels on food, nutrition, and health issues, are essential for approaching some conflict scenarios operationally.

Beyond the legal sphere (and to some degree also within it), concepts such as misleadingness, fairness, deception, etc. may be categorised as contested concepts (Gaille 1956, Garre 1999) that are subject to permanent debate and adjustment under the influence of shifting agendas and clashes of interests in society. The FairSpeak Project sees itself among the potential catalysts for these developments in the field of food-to-consumer communication by providing more precise analytical tools and harder empirical evidence. However, a consensus on the limits of fairness presupposes a wider forum representing all key actors: the food industry, NGOs, politicians, and authorities. At the present stage, some guidance can be extracted from the ongoing dialogue between researchers, companies, and NGOs participating in the FairSpeak Project (partially formalised in Clement, Selsøe Sørensen & Smith 2010, and Clement, Skovgaard Andersen & O'Dorothy, in review).

Factors identified as essential so far include identifying and preventing even those forms of potential miscommunication where consumers share part of the blame, even if manufacturers might well get away with them in court. In turn, this would require a better integration of fairness considerations and fairness checkpoints into the creative phases of food labelling and packaging design development, instead of reducing them to an isolated legality-check with the company's legal department.

3 ANATOMY OF THE IN-STORE FOOD TO CONSUMER COMMUNICATION

Figure 1 sums up the key variables involved in in-store food-to-consumer communication. It shows the main fields of research and practices concerned with creating, evaluating, defining, and analysing such variables and gives examples of relevant knowledge domains or cognitive structures which the label creator draws upon and which must be accessible to the consumer at the moment of decoding. The weaker the cognitive fundament is on the consumer side, the more uninformed decisions are likely to be taken, because the consumer's attention may be distracted by more or less deliberate features of the semiotic cocktail aimed at selling the product. It may even prove very difficult to obtain fairness in the communication with cognitively weak consumers, who may adapt a strategy of avoidance in relation to whatever is said by the semiotic cocktail and may end up paying attention to nothing but a picture and the price tag. The point in using food labels as research domain is that it represents a perfect miniature version of how human cognition, understanding of the world and interaction with it are interrelated, and that it is well known to every individual, since everybody is all the time confronted with preference-conscious food choices to the best of their abilities.

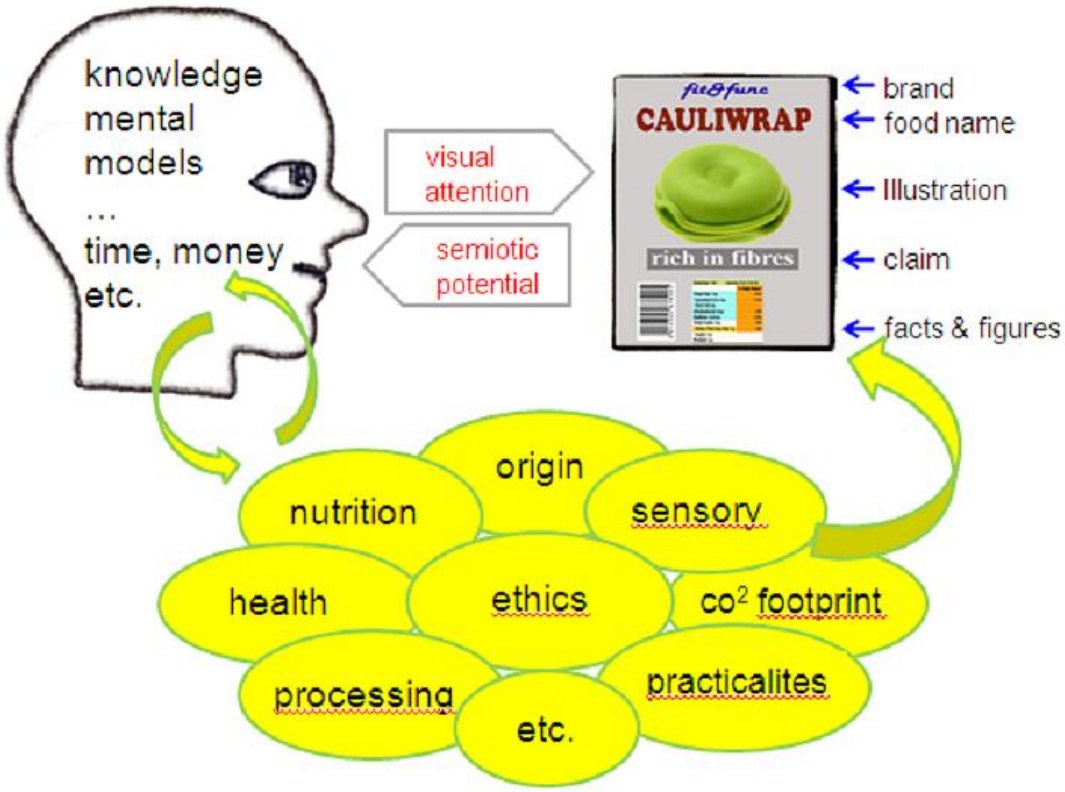

Figure 1: The basis for a preference-conscious choice: The underlying cognitive structures on which the preference-conscious choice should ideally build

The upper right part of the figure illustrates the total symphony of words, texts, figures, etc. that "speaks" to the consumer from the packaging, which we refer to as the *semiotic cocktail* of food labelling. The ovals in the lower part of the figure illustrate the various material and immaterial properties of the food product that the cocktail may "speak" to consumers about, with a potential for both guiding and misleading them. Either way, this presupposes that an individual consumer has in fact looked at the package and paid attention to one or more elements, as illustrated by the head to the left. The opposite arrows between the consumer and the packaging illustrate the consumer's distribution of visual attention on the packaging and the perceived semiotic potential. The fact that the

head is not empty indicates that consumers meet the packaging with different types and levels of pre-existing knowledge which is decisive in making any sense whatsoever of the labelling elements, and which determine what sense is made. In the following, we shall consider the variables just introduced and their interplay in further detail.

A widely accepted definition of a *sign* is that it is "something that stands for something else to somebody", be it a word, a sentence, a number, a picture, or a red spot on a patient's chest indicating some disease (for further discussion and alternative definitions, see e.g. Nöth 1990, Chandler 2002). While all labelling elements found on a food package qualify as signs in this sense, the ways in which they come to function as such and the messages they are capable of conveying vary profoundly. Apart from certain basic principles rooted in general semiotics, our analysis of the semiotic cocktail therefore needs to rely on other, more specialised fields of research, spanning from lexical semantics to visual attention.

A first key distinction must be drawn between verbal (linguistic) signs, the comprehension of which presupposes the conventionalised code(s) known as natural human language(s), and non-verbal signs, e.g. illustrations, colours, packaging texture, that communicate by different means (Messaris 1997, Zlatev 2009). This affects, inter alia, the degree to which the respective elements can be interpreted as statements susceptible to truth-conditional evaluation (Lyons 1977: 167ff, Carston 2002). Brand elements and signpost labels constitute a challenging hybrid case in that respect.

In the following, the labelling elements are subsumed under five overall categories focusing primarily on what distinguishes them as communicative signs. The categories also reflect essential differences in terms of legal regulation and of the role the elements play in the marketing and practical handling of the product. Table 1 shows the five categories and the frequency with which each category was pointed out in the Danish case material as potentially causing consumers to be misled (Smith et al. 2009: 120ff). The table includes 1000 instances distributed over 821 cases.

Labelling elements	**Number of occurrences**	**Percentage**
Brand elements and signpost labels	47	4.7 %
Food names	272	27.2 %
Text including claims	391	39.1 %
Facts & figures	213	21.3 %
Illustrations and non-verbal elements	77	7.7 %
Total	1000	100 %

Table 1: Labelling elements pointed out as potentially misleading ordered by category

3.1 Brand elements

A brand in the prototypical sense is a company name such as Danone or Coca Cola written in characteristic typography and often supported by other visual characteristics such as Burger King's stylised burger or Coca Cola's red background colour. A brand will usually be a *proper name*, whereas *(food product) name* in our context is used for the designation of a given type of food, cf. section 3.2. The aim is to facilitate recognition and support positive expectations and loyalty from consumers (Olins

2004, Gregory 2004). Today's branding strategies often build on multi-level brand portfolios (Carlotti, Coe & Perry 2004, Laforet & Saunders 2005) which may include (a) master brands like those just mentioned, (b) sub-brands (families of brands), e.g. Kedla and Karolines Køkken ('Caroline's Kitchen') which are sub-brands of Arla Foods, (c) product series (families of products) such as Minimum 'Minimum' or Princip ('Principle') marketed by the same Danish supermarket chains, and (d) trade names for individual products, e.g. Nellie Dellies for a particular low-carb variety of wine gum made by the Toms Group. The trade name cannot legally replace a real product name, but the delimitation sometimes becomes blurred in practice and may be a source of dispute as illustrated by Rigtig Juice ('Real Juice') below.

Among the 1000 instances of allegedly misleading elements pointed out in the 821 cases, only 47 (4.7%) concern brand elements and regulated labels (see below). This may seem like a surprisingly small number in view of the key role that systematic branding strategies play in modern food marketing. However, part of the explanation may be that consumers find it harder to substantiate the misleading potential of brand elements compared to other labelling elements for the reasons discussed below.

Once a labelling element has acquired brand status through registration or use, it thus enjoys extensive national and transnational legal protection. Moreover, the limits for using words, pictures, colours, etc. in playful, creative ways are generally wider for that sort of elements than for other labelling elements in current administrative and legal practice, although the general prohibitions against misleading food labelling extends to them as well. For example, a complaint against the brand name *Rigtig Juice (*'Real Juice') was first upheld by the authorities because it could not be substantiated what made the juice more "real" than other fruit juices. However, the decision was ultimately set aside by the court of appeal which ruled that the name, after having been used as a brand for 30 years, was no longer to be understood as a claim that the juice was more real or genuine than other juice products.[6] Notably, no empirical evidence was provided to support the claim that the bulk of Danish consumers rule out any literal interpretations of *rigtig* 'real' on that account. Yet certain general characteristics of brands would seem to support that line of argumentation, at least where the literal reading is not as self-evident and specific as in the present case.

Branding builds on a deliberate synthesis of verbal and non-verbal elements into an idiosyncratic "micro-language" in its own right which is capable of conveying a conceptual content that is more elaborate than what any of the elements could convey in isolation (e.g. McCormack, Cagan & Vogel 2004, Rindell 2008). Even the strictly verbal components thereby come to enjoy a high degree of autonomy from the rules and conventions that govern our comprehension of the underlying general language, as far as both expression and content are concerned. *Coca Cola* and *Minimum* are not just plain words in English and Danish, at least when comprehended as brands, and the conceptual content that consumers connect with them has been carefully constructed by the brand owners themselves through advertising campaigns, media coverage, sponsorships, consumer information on homepages, etc. A consumer who wants to know the exact meaning of e.g. *Minimum* as a commercial brand will therefore ultimately need to engage in complex intertextual investigations (Warton & Still 1990) posing an extreme case of what Sinha & Kuteva (1995) label *distributed semantics*.

In effect, this means that ordinary consumers are excluded from questioning the truth of the implicit identity statement "this is a *Minimum* product" if the manufacturer has decided to put that name on the packaging. That is his privilege, after all. The consumer would have a better case in questioning, say, the name *orange juice* if the product contained 0.2% orange concentrate. Moreover, as just indicated, the expectations that consumers are entitled or not entitled to have regarding a (genuine) *Minimum* product cannot be derived from the brand name as such (here the case seemed a bit better for the "real" juice) or even elsewhere on the individual package, but must be sought in the manufacturer's total market communication.

[6] Eastern High Court judgment reported in *Ugeskrift for Retsvæsen* 2001, p. 2161 ff.

From a fairness perspective, a major concern here is where the limits should go between the brand owner's responsibility to communicate in a clear and consistent manner (while maintaining a fair degree of creativity), and consumers' responsibility to keep themselves informed, particularly as far as distributed semantics is concerned. The brand owner's responsibility to communicate to a consumer in a clear and consistent manner has a more permanent and everlasting character, whereas the consumer's responsibility to keep himself (or herself) informed often lasts only for a period of time preceding a particular individual purchase and after that he (or she) might forget once used data for ever.

In other cases, the problem relates to the distributed semantics behind the immediate brand-carriers on the package. The Danish product series *Den Grønne Slagter* ('The Green Butcher') was originally introduced as a series of low-fat cold meat products in which the fat had been replaced by potato fibres. Later on, other cold meat products were included which were low fat to begin with. At some point, low-fat variants of entirely different types of products, such as mayonnaise and relish, also became part of the series, and today it also includes products which are low on other undesirable ingredients than fat, i.e. artificial additives and allergens. While these and other adjustments of the brand policy were all communicated by the brand owner through relevant channels, it has nevertheless been maintained by consumer organisations that ordinary consumers are likely to get confused and expect all the products to contain potato fibres and/or be lower on fat than comparable ones.[7] The dilemma stands between the brand owner's responsibility to communicate in a clear and consistent manner – while maintaining a fair degree of flexibility and creativity – and consumers' responsibility to keep themselves informed. Notably, in the present and comparable cases the complainants were professionals (consumer organisations, competing companies) who have the experience and resources to articulate a more complex line of argumentation going beyond what is said on the individual package.

Several fairness challenges are connected with the interaction between brands and other label elements. For one thing, ordinary consumers are, in effect, excluded from questioning the truth of the implicit identity statement "this is a *Minimum* product" if the manufacturer has decided to put that name on the packaging. That is his privilege, after all. The consumer would have a better case in questioning, say, the food name *orange juice* on a product containing 0.5% orange concentrate. This uneven distribution of definitory competence continues when it comes to determining precisely which expectations consumers are entitled to have of a product carrying the brand. In some cases, the problem relates to the immediate carriers of the brand identity on the packaging.

It is widely assumed (also legally) that words, pictures, colours, etc. may be used in playful, creative ways when (re)used for branding purposes, and that consumers are generally aware of this. However, this does not *per se* exclude the fact that a less informed individual consumer may interpret them more literally and potentially be misled (Clement et al. 2012).

The challenge for fairness-minded brand-owners is to find efficient ways of predicting and systematically checking for potentially misguided consumer expectations as an integral part of their brand development and management procedures, in addition to ensuring brand loyalty and preference which are the main objectives of empirical pre-testing today (Clement, Selsøe Sørensen & Smith 2010).

A recurring issue in the public debate is whether consumers are in fact able to find, comprehend, and efficiently use the complex information and classification principles underlying these seemingly "simple" labels. For example, a FairSpeak survey showed that whereas 71.1% of the respondents recognised the all-Nordic *keyhole* label, only 22.8% could explain, even tentatively, what it indicated (Selsøe Sørensen 2010). A further risk in such cases are overgeneralisations in the shape of halo- and magic-bullet effects as further discussed with reference to verbal claims.

[7] Case No(s): 2005-20-272-01666; 2005-04-274-00670.

Notably, in the present and comparable cases, the complaints were made by professionals (consumer organisation, competing companies) who have the resources and experience to articulate a complex line of argumentation that goes beyond the individual package.

Related challenges are posed by *regulated labels* such as Max Havelaar's *Fairtrade* label or the EU *Organic Farming* label. This form of labelling often concerns relatively specific food properties like organic farming, fair trade, animal welfare, or GMO, the importance of which is widely recognised in society. Just like the brand elements, these labels display a close integration of verbal and non-verbal elements and a non-symmetrical distribution of definitory competences between the label owner and the consumer. A key difference, however, is that regulated labels are typically controlled by independent bodies, not by individual companies, giving grounds to expect a clearer separation of objective consumer information from sales promotion.[8]

Nevertheless, the problems of distributed semantics mentioned above remain exactly the same here. A steadily recurring issue in the public debate is whether consumers are in fact able to find, comprehend, and efficiently use the complex information and classification principles underlying these seemingly "simple" labels. A related issue is the risk of overgeneralisations, including halo- and magic bullet effects, cf. below. Yet such concerns rarely manifest themselves in actual complaints against individual products in that the dilemma extends beyond the labelling choices made by the individual manufacturer. In so far as complaints do involve these elements, they tend to focus on "additional" misuse, e.g. highlighting collaboration with the Danish Diabetes Association without actually promising that the particular product is suited for people with diabetes.[9] Relying on distributed semantics may be necessary for condensing the space occupied by each element of the semiotic cocktail, but may cause less informed consumers to guess, make wrong assumptions and be misled, whereas the label designer can claim not to have done anything wrong.

Despite all advantages of commercial and regulated labels, when it comes to condensing complex information and simplifying choices, a consumer who wants to make a qualified and preference-conscious choice will ultimately need to check and understand the "rest" of the labelling information. We will now consider the elements that convey this information.

3.2 Food names

Proceeding to food names, we take a step away from deliberately constructed signs and meanings towards the general language(s) that we all share. This makes the assessment of truth-conditions more "democratic", but certainly not less problematic: We are all entitled to have an opinion as to whether something qualifies as bacon, apple juice, or butter cookies. But who is to decide? From a terminological point of view, there are two basic problems: 1. Who or which authority and on what grounds or in which framework defines a given food name, and 2. Which food name - in case several candidates compete - should be retained as the "correct" one e.g. for an innovative food product?

According to the EU Labelling Directive 2000/13/EC, Article 3,1,1, any food product sold in the EU must carry a name, so that consumers can check if what they are buying is e.g. *rigatoni*, *spaghetti* or *potato gnocchi*. All the same, consumers, competitors, and authorities sometimes disagree with the name chosen by the manufacturer. 27.2% of the allegedly misleading elements found in the case material concerned the product's name.

In essence, determining whether a food name is misleading or not is a matter of determining whether the implicit identity statement "This is *bacon*, *apple juice*, *butter cookies*, etc." is true or not, which, in turn, is a matter of determining what these words *mean*. In some cases, the matter is settled a priori

[8] A troublesome intermediate case are commercial signpost labels which also highlight specific "positive" food properties, but are created and defined by individual companies.

[9] Case No: 2006-N2-274-00232.

by food standards containing legal definitions, e.g. for fruit juices or for chocolate[10] . Whereas the legal conclusion in such cases is clear, it may be questioned whether such definitions always reflect the actual expectations and knowledge of ordinary consumers (Ohm Søndergaard & Selsøe Sørensen, 2008). However, the vast majority of food names are not legally defined. In these cases, the question is how the name is interpreted by the majority of users of the language in question. Since there are no mandatory food standards for e.g. smoothies – in which respect they are no different from most other food products sold in the EU, including far more established ones such as *macaroons* – then who should be the final judge? The key benchmark from a legal viewpoint is the famous "average consumer". But do such consumers (however we may identify them) always have sufficient food knowledge to be confident about their own judgment? Do all of us know what a "real" *macaroon*[11] is? To what extent are we likely to draw on the knowledge of others, or even delegate the judgment to them? And to what extent is it fair to expect consumers to do so?

Following the predominant approach in cognitively oriented linguistics (Talmy 2000, Evans & Green 2006) and terminology management (Wright & Budin 1997, Temmerman 2000),[12] we identify the meaning of a name (food or other) with a psychologically real *concept* which has become embraced by language, but also serves the wider purpose of *categorisation* in the course of situated thinking and acting, e.g. while shopping or eating, or when developing new product ideas (e.g. Ratneshwar et al. 2001, Gill & Dubé 2007).

Following primarily Barsalou (1987, 1999, 2005, 2008) whose approach encompasses earlier theorising and evidence on prototype-based categorisation and graded conceptual structure (e.g. Smith, Shoben & Rips 1973, Rosch 1975, Wierzbicka 1985, Taylor 1989),[13] the anatomy of human concepts may be described as a complex hierarchy of cognitive criteria (components) which we use for determining whether a given real-world object qualifies as a member of the category or not. We distinguish between (a) *essential components*, i.e. criteria that cannot be dispensed with, e.g. <milk-based> for cheese, (b) *prototypical components*, i.e. criteria that are salient in our conceptualisation of the category as a whole, but do not need to be manifest in every particular exemplar, e.g. <yellow colour> for cheese, and (c) general *background knowledge* which varies significantly from person to person, e.g. <dad hates cheese>. For components on all three levels, a further distinction can be drawn between (i) *sensory components* relying on the immediate recall of first-order sensory experience, e.g. the colour, texture, taste, smell, and visual appearance of cheeses previously encountered, and (ii)

[10] Directive 2001/112/EC relating to fruit juices and certain similar products and directive 2000/36/EC relating to cocoa and chocolate products.

[11] A modern Danish macaroon is made of apricot kernels, not of almonds as demanded by traditional Danish recipes. Artificial almond flavour is added. Manufacturer(s) insists that this has been so since the1940's and that consumers like and buy the product. Case No(s): 2007-S5-274-0792; 2007-S5-274-00795.

[12] While being in line with cognitively founded approaches to lexical semantics which see language as operating upon more generalized mechanisms of human categorisation that may be examined also from a non- (or pre-) linguistic perspective (e.g. Cohen, H. & Lefebvre 2005), it collides with the reductionist view on language as a self-contained system of interdependencies that used to dominate European structural linguistics (Saussure 1983 [1916] , Baldinger 1980). The first-mentioned view was rather prophetically anticipated by Wüster (1966 [1931], 1959/60) in the field of terminology research (though stated in somewhat different terms), yet a more systematic linkage to cognitive paradigms became possible only decades later, after the "cognitive revolution" had reached the shores of language study at large (e.g. Temmerman 2000, Faber et al. 2007).

[13] Earlier versions of prototype theory rooted in Rosch (1975) were seen as a viable alternative to feature-based description of lexical meanings, focussing on the insufficiencies of such variants of the latter that operate with linear collections of isolated invariant features. However, later theorists have encompassed the insights gained by Rosch and others into more "advanced" versions of the feature-based approach which attempt to model the structure of psychologically real concepts (e.g. Wierzbicka 1985, Lakoff 1987: 12ff, Barsalou 1987, 2008).

propositional components involving factual (often second-order) knowledge susceptible to truth-conditional evaluation, e.g. that cheeses are made through enzyme-induced coagulation of milk (Smith 2010, in continuation of Barsalou 1999, Moskowitz et al. 2006). A novel product developed as a functional (and sensory) equivalent to pizza cheese, but mainly containing other ingredients than cheese, is marketed under the names Pizzatop and Pizza Topping. Main objection[14]: Cheese is what you normally put "on top" of a pizza.

On this basis, a fundamental distinction can be made between conflict scenarios relating to *established food names* for (more or less) familiar products, and to *novel food names* for entirely new types of products or product variants.

In the former case, all parties concerned usually seem to agree that the name has some delimited meaning, the question being how exactly to delimit it. In the cases of *macaroons* and *rullepølse*[15] the explicit arguments of the immediate actors seem to indicate that they operate with different variants of the concept at issue, displaying different numbers and mixtures of sensory and propositional components and different lines of demarcation between essential and prototypical components of either type and blurred boundaries (see e.g. Shelov 2003, Smith 2010, Smith, Møgelvang-Hansen & Hyldig 2010). At first glance, such examples would seem to support Putnam's (1975) hypothesis of "division of linguistic labour", the essence of which is that members of society collaborate on knowing the exact meaning of the words they use, and will ultimately rely on the judgment of "experts". In any case, the goal of terminology development – be it standardisation or any kind of normalisation – is to record and to impart legal effect to conceptual differences in the meanings of terms like *noodles, vermicelli, macaroni, spaghetti, rigatoni*. This aim is achieved not so much by a reduction or even an annihilation of polysemy or synonymy (as linguists and terminologists used to suppose), as by a maximal reduction of semantic vagueness, fuzziness and indeterminacy of the linguistic units in use. The question is still, however, whether the expert's final judgment will always have status as a built-in component in ordinary consumers' variant of the concept in question, i.e. a conceptual slot for which only the expert may provide the right filler. This might well prove to be the case for luxury products like *caviar* and *foie gras* (though it remains to be demonstrated), but does the mechanism extend to *macaroons*, *pepperoni*, or *smoothies*? To support future practices on such issues, ongoing FairSpeak research includes testing the limits for consumer acceptance of selected name-product combinations while systematically varying the participants' access to sensory and propositional product attributes and to authoritative definitions.

To support future best practices on these issues, FairSpeak is presently testing the limits for consumer acceptance of selected name-product combinations by exposing different groups of respondents to taste samples alone (sensory product attributes), taste samples in combination with nutrition facts and ingredients lists (adding propositional product attributes), and both, in combination with authoritative definitions (adding experts' final judgments) in a rating task.

Turning now to novel names, these will not activate any well-delimited meaning (concept) with consumers who encounter them for the first time. That meaning needs to be crystallised and acquired by consumers first. Until then, everybody is his own "expert".

In languages like Danish, English and German, the predominant way of creating new lexical expressions, including food names, is to combine existing word elements into more complex units, in particular through compounding (Libben & Jarema 2006, Sager 1997). In the case material, i.e. the corpus of texts used in our study, two assumptions on the meaning of such complex units tend to be taken for granted by authorities and complainants alike (echoing a general tendency across EU

[14] Case No(s): 2006-N4-274-00998; DAF; 2006-N4-274-00999.

[15] The very traditional Danish cold meat product called *rullepølse* (literally 'roll(ed) sausage') was re-introduced in a low-fat version made of pork fillet and not belly, as demanded by traditional recipes. Fat was reduced from 25% to 3%, but was the standard recipe and *name* violated? Case No(s): 2005-04-271-00034; 2005-05-274-00437.

practices, see MacMaoláin 2007: 90ff). First, that the meaning of the whole is a function of its parts, and, second, that there is only one "objective" and "correct" way of interpreting the relation between the elements. *Butter cookies* should objectively contain butter whereas *Alsace ham* should objectively come from Alsace in France. Exceptions are reluctantly accepted for established ("generic") names, in that no one would expect e.g. *wine gum* to contain wine or *Brussels sprouts* to come from Brussels, but for novel names judgments are less liberal.

However, existing theory and experimental evidence on the semantics and processing of complex words call for certain modifications of these common-sense assumptions. It is widely accepted that "2 + 2 does not equal 4" in a compound (Ferris 1983: 66, see also Benches 2006, Stekauer 2006). Thus, a compound like *snow smoothie* does not in itself tell us whether it should be interpreted as 'white as snow', 'with fresh snow added' (served as a drink), 'to be enjoyed in the snow' (by thirsty skiers), and so on (Smith et al. in press). For established compounds, our familiarity with their full-word meaning may sometimes help us interpret the relations between the constituents in some sensible way. Yet this is not strictly required in that psycholinguistic experiments indicates that we do not routinely decompose familiar compounds and analyse the semantic relation between the constituents in order to retrieve their established whole-word meaning (e.g. Libben 2006, Andrews & Davis 1999, Schreuder & Baayen 1995, Sandra 1990, Manelis & Tharp 1977).[16] That is, we do not need to reflect on why strawberries are called *strawberries* to use and understand the word correctly. Yet again, we are free to do so at any time. The same holds true for the established multiword unit *butter cookie* which will directly refer to the well-known cookie; if it is interpreted at all, this noun-noun relation will merely give rise to meta-linguistic reflections and expression-based connotations on the part of the hearer: Is it made of butter, does it contain butter, does it taste of butter etc.

However, if a novel food name appears, e.g. the nonsensical *butter yoghurt*, online sense-making and concept formation will be triggered based on the hearer's world knowledge and available contextual clues serving as disambiguating variables, cf. fig. 2. Since there is no established whole-word meaning to retrieve, the consumer is bound to decompose the compound and try to make some sense of the constituents and their semantic relation in their own right. Depending on the consumer's cognitive resources, this process may lead to correct or incorrect results, which are in all cases out of control (yoghurt containing butter, yoghurt which can be used as butter etc.).

[16] Some studies indicate that decomposition may play a certain role for word recognition, yet without necessarily reaching the semantic level. See Libben & Jarema (2006) for a critical review of existing findings.

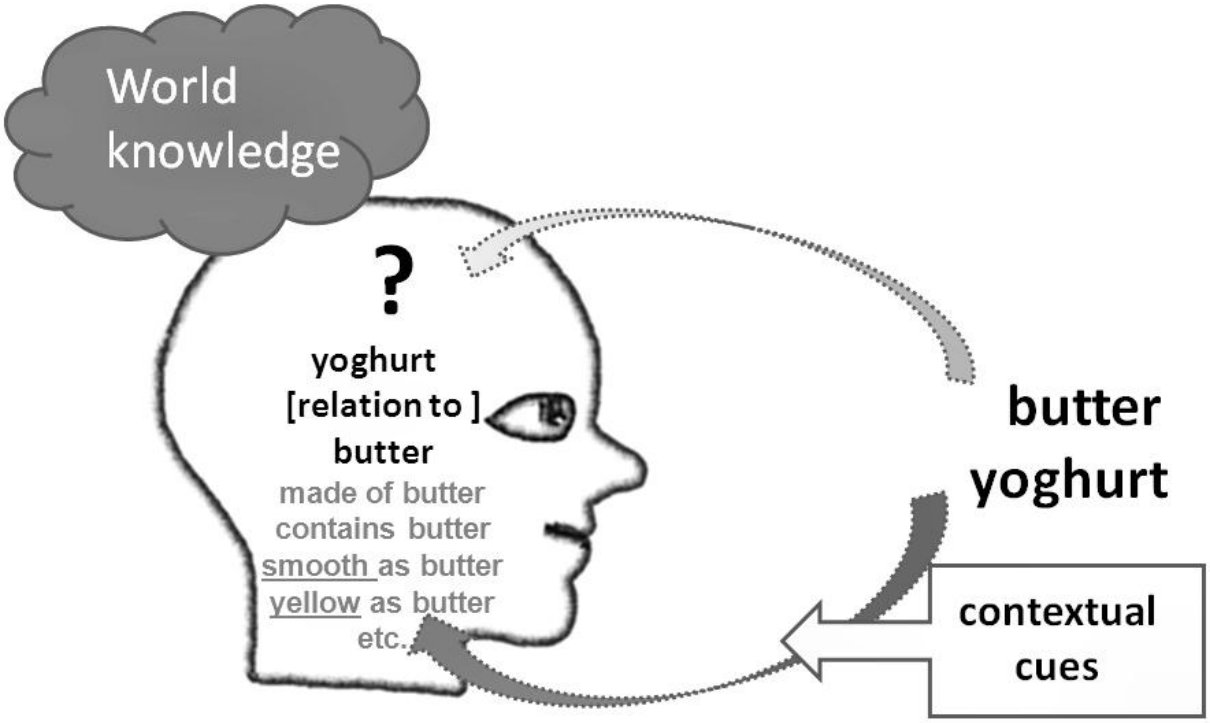

Figure 2: Decoding of a novel food name

When presented in isolation, the outcome is sensitive to such factors as analogies with other, familiar compounds that share the same first/second constituents (Krott & Nicoladis 2005, Gagné 2001), and the conceptual "compatibility" of the constituent concepts (Gill & Dubé 2007, Murphy 1990). This sometimes requires a metaphorical extension of one or both of them e.g. *land yacht* for a luxury car (Fauconnier & Turner 2002: 357, Benches 2006: 63). However, it has also been demonstrated that if the compound is presented in a sufficiently informative context, such default interpretations may well be abandoned in preference to an alternative one that fits the context (Gagné, Spalding & Gorrie 2005, Zlatev et al. 2010). Finally, any need for interpretation will disappear once the relevant whole-word meaning has been crystallised and acquired. Yet in the process of acquisition it will function as an a index (Smith 2001, 1999/2000 in continuation of Wüster 1959/60: 191) facilitating the formation of the novel meaning (concept) together with additional cues from the context and the consumer's general background knowledge, as illustrated in Figure 2.

This adds new shades to current judgments on the misleading potential of novel food names which tend to circle around the name's built-in semantic potential and its "objective" meaning. For example, in one case, the name *Halal-skinke* ('Halal-ham')[17] was claimed to be misleading because ham is supposed to be made of pork and *Halal* excludes precisely that. However, it might alternatively be argued that while interpreting the name clearly requires a metaphorical extension of *ham* (just like of *yacht i*n *land yacht* above), this may indeed be a rather apt and compact way of conveying the following subtle message: This is as close as you get to something that looks, tastes, and feels like ham without disobeying a religious proscription against eating pork. A similar case could be made for *surimi rejer* 'surimi shrimps'[18] for a product imitating the shape of shrimps, but made of minced fish meat, considering that many Danish consumers are quite familiar with a similar product originally developed to imitate crab meat and known as *surimi*. In cases like this, the potential to mislead is

[17] Case no. 2003-10-274-00462.
[18] Case no. 2006-N4-274-00885.

certainly present, but the outcome is not determined by the anatomy of the name alone. It ultimately depends on how this information is interpreted in the light of the consumers' actual background knowledge, and, not least, by what has been done to support the intended interpretation, among other possible ones, by the surrounding labelling (say, by claims like "great taste, no pork" or "now also with shrimp shape").

Developing creative techniques for achieving such disambiguations may be worthwhile for manufacturers, in that finding obvious naming alternatives for conveying subtle messages like the present is not an easy task either. To support this, FairSpeak has developed a schematised food labelling matrix in which 4 key biasing units (brand, verbal claim, illustration, colour(s)) can be varied systematically to test their joint potential of pushing the interpretation of a potentially ambiguous novel food name both in a misleading direction, and towards consumer understanding and acceptance (Smith, Barratt, Zlatev, in review).

3.3 Verbal text

The category *text* in Table 1 comprises all verbal statements on the packaging that are neither classifiable as brand elements, regulated labels, nor food names, neither included under *facts & figures* as defined below.

A further subdivision can be made between verbal *claims*[19], i.e. short, visually vivid statements typically placed on the front of the package, e.g. *Better than your mom's,* and plain text which is less visually prominent but often more extensive, e.g. a recipe suggestion or a description of the manufacturer's animal welfare policy. While the core difference here is one of visual prominence, it also affects the place and impact of the statement in the hierarchy of semantic disambiguation and its effect on the course of relevance processing (see below).

With 39.1%, text is the category of labelling elements that is most frequently pointed out as potentially misleading in the case material. Like other verbal statements, verbal claims and plain text inherently lend themselves to truth-conditional evaluation, i.e. establishment of the extra-linguistic conditions under which they can be regarded as conveying a true statement.

In some cases, this simply comes down to checking the statement against facts, e.g. where a meat product claimed to be Danish turned out to come from Poland.[20] Yet in a great many other cases the issue is more complex, in that the question is (a) what exactly *has* been stated literally and should therefore be checked against facts and/or (b) whether a *true* statement may nevertheless evoke false expectations in the mind of the consumer.

Transposed to lingua-cognitive terms, this may be a matter of *semantics*, such as the exact meaning of the words *gammeldags* ('traditional') or *original* ('original') when used in attributive statements containing these adjectives.[21] Or it may be a matter of *pragmatics*, i.e. of consumers' attempt to make communicative sense of what has been said literally and the undue *inferences* this might trigger. The borderline is fuzzy, however, in that the need for additional inferences is sometimes "built" into the formally expressed semantic content. Examples are comparative expressions *(30% <u>less</u> fat* ⇨ than in what or compared to last week?) or deixis (*<u>Now</u> 50% stronger* ⇨ since when?). However, consumers may also draw additional inferences entirely on their own initiative in an attempt to figure out what the manufacturer is really trying to tell them, and why, i.e. to grasp the underlying *speech act* (Austin 1963, Searle 1969).

[19] In EU Regulation 1924/2006/EC, Article 2 the term *claims* is understood somewhat broader, as any non-mandatory message or representation including also graphics, symbols, pictures, etc. However, it is in the sense of short highlighted verbal statements that the term is most commonly used in current commercial and legal practices.
[20] Case No: 2006-Ø1-274-00382.
[21] Case No(s): 2005-08-274-00380; 2003-08.722-08684.

The claims *sukkerfri* ('sugar free') and *sødet med frugtsukker* ('sweetened with fruit sugar') supplemented by *et sødt liv uden sukker* ('a sweet life without sugar') were claimed to be potentially misleading though used in full accordance with the legal definition of *sukkerfri* ('sugar free') and being factually correct, respectively, because the sweeteners used were chemically so close to sugar that they would still pose a serious health hazard for diabetics[22]. This case displays a subtle interplay between semantics (the exact meaning of *sukkerfri (*'sugar free') and the functioning of the "division of linguistic labour" between laypersons and experts, and pragmatics (the wider health benefits that ordinary consumers are likely to expect from sugar free products in whatever sense it is comprehended. By contrast, the case of wine gums discussed below is all about pragmatics while the semantics (and truth) of the claim remain beyond discussion.

Characteristically, no empirical evidence has been provided to substantiate any of the presupposed lines of consumer reasoning, leaving the decision to rest on common sense alone. In itself, the fact that true information may trigger unjustified inferences has, however, been clearly demonstrated for food products, most extensively in an influential study by Roe, Levy & Derby (1999). Among other observations, they reported a *magic bullet effect*, i.e. overgeneralisations where a claim such as *low fat* led the consumer to expect low cholesterol, and a *halo effect* where the very presence of a claim on the front of the package led to expectations of health benefits that had nothing to do with the claim itself. Likewise, the impact of selective comparisons is also well-documented in the marketing literature (Muthukrishnan, Warlop & Alba 2001) though with a main focus on sales-promotion rather than fairness. However, existing research does little to explain the cognitive and communicative mechanisms causing the effects, or how to systematically predict and prevent them.

A path for further progress is offered by *relevance theory* (Sperber & Wilson 1995, Wilson & Sperber 2004). In brief, the theory assumes that any communicative utterances, especially if highlighted, are expected by the recipient to be contextually relevant. To find out how, the recipient goes through a subconscious process of step-by-step relevance processing where the verbalised information is matched with the knowledge already accessible to him or her. The process stops when the cost of additional processing exceeds the expected cognitive benefit in terms of new knowledge that can be used efficiently in the situation. In the low-involvement setting of in-store decision making, that point can be expected to be reached relatively fast (e.g. Reber, Schwarz & Winkielman 2004). Moreover, differences in the type and levels of knowledge accessible to the individual consumer are likely to yield very different results.

A well-known wine gum on the Danish market had a splashy claim on the front saying "only 0,3 g fat per 100 g" which is true, but the point is that this is true for all wine gums. The presentation of the text as a splash was banned by the authorities because it was considered likely that consumers would expect the product to contain less fat than other types of wine gums, which is not the case. Throughout the proceedings, the manufacturer maintained that the relevant comparison (if any) was not with wine gum, but with other types of sweets, for example chocolate or marzipan, which contain much more fat.[23] A less informed consumer might think: "Wow, I didn't know that there was a lot of fat in wine gums – but it seems that there is, so I'll take this one, and keep myself slim". By contrast, a more knowledgeable consumer might think: "Of course there is no fat in wine gum… but there is in other kinds of sweets, like chocolate. Thanks for reminding me." In this case, then, the less informed consumer was defended by the authorities. Current FairSpeak work aims at mapping more systematically the alternative paths of step-by-step relevance processing that may be induced by particular claims in consumers with different levels of knowledge to provide a firmer basis for predicting and preventing possible pitfalls (see Melchenko 2003 for a related approach).[24]

3.4 Facts & Figures

[22] Case No(s): 2004-09-274-00089; 2003-09-722 -11318.

[23] Case No: 2005-10-274-01405.

[24] A pilot study focused on specific sensory and nutritional properties of sugar-reduced wine gums is presently in preparation in collaboration with the Toms Group.

This category includes such labelling elements such as the list of ingredients, nutritional facts, indications of quantity, weight, date, contact information, bar code, etc. Linguistically, we take a step away from words and sentences in plain Danish towards a compact mode of expression based on listing of isolated words, figures, tables, codes, etc. The visual prominence is usually limited in that we are dealing with what is popularly called the "small print" on the back of package. The role of this information in the case material is often to be taken as the "objective" facts, that other more visually prominent labelling elements on the front can be matched against, as we saw above with *0.4% dried avocado powder* colliding with the name *guacamole dip*. However, in many cases initiated by the authorities or other professional actors, it was the "objective" facts that turned out to be untrue, a circumstance that ordinary consumers are seldom in a position to uncover.

The facts and figures part of food labels is particularly dense in information which requires the user to rely on existing background knowledge or on distributed semantics if an informed choice is to be made. In section 4 below we shall give an example of such condensed information using the "top of the iceberg" description model.

3.5 Illustrations and other non-verbal elements

The term *illustrations* covers recognisable pictorial representations of real-world or fictive objects as well as non-figurative visual elements like decorative patterns, and background patterns. A key feature is that these elements communicate to the consumer through their immediate visual appearance, not via the conventional code(s) known as human language(s). The degree to which other conventions are involved will be considered.

Out of the 1000 instances of allegedly misleading labelling found in the 821 cases, only 7.7% concern purely non-verbal elements. Most of these were pictorial representations of the product itself, its ingredients or other objects.[25]

The number of cases was surprisingly modest considering that it is well documented in the marketing literature that pictures and other visual elements exert a strong and direct impact of on consumers' visual attention and subsequent intention to buy the product (e.g. Underwood et al. 2001). However, the explanation may well have to do with difficulties of explicit (verbal) argumentation rather than with lack of misleading (visual) potential.

Compared to pictures, language enables us to convey highly complex messages which at the same time encompass formalised criteria for accepting them as true or false statements about extra-linguistic reality. Take the claim *Contains 10% raspberry concentrate* compared to a photo of a strawberry. What pictorial signs offer instead is a more universal comprehensibility. If the above claim had been found on a product in a Russian supermarket, the exact wording might have been *Содержание концентрата малины 10%* ('contains 10% raspberry concentrate'). This would make no sense to an average Danish or German consumer, yet the picture of a raspberry would still evoke certain expectations.

In classic semiotic terms originating from Peirce (1992 [1867-1893]; Sonesson 1989), pictures differ from verbal claims by not being entirely arbitrary *symbols* which rely solely on convention, but either *icons* that stand for something else by virtue of immediate resemblance (e.g. with real raspberries) and/or *indexes* that that stand for something else by virtue of real-life experience (e.g. a microwave oven indicating a method of preparation).

Despite this "immediate" comprehensibility, it has nevertheless been argued that the picture-reading is subject to certain conventions in its own right, and several attempts have been made to pinpoint and

[25] A smaller proportion of cases relate to non-verbal product attributes which do not qualify as illustrations and also involve other senses than vision, e.g. the texture of the packaging material or the colour of the product itself. These aspects are further considered in Smith, Møgelvang-Hansen & Hyldig 2010.

systematise these convention under headings such as "visual rhetoric" (Scott 1994), "visual literacy" (Messaris 1994), or the "grammar" of visual communication (Kress & van Leeuwen 2006). What is also recognised by most authors, however, is that these conventions display a higher degree of flexibility than English orthography or Russian grammar, and more variation over time, media, genres, cultures, etc. A picture may say more than a thousand words, but there are wider limits to specifying exactly what and why (verbally), which makes any attempt to substantiate the misleading potential of a picture in a formal complaint a challenging task.

This may explain why most complaints that involve pictures concern simple iconic relations between the picture and either the product itself or some characteristic ingredient. Such (mis)uses of pictures are highly common and relatively easy to explain, although examples of the latter type often involve the slightly more advanced assumption that a picture of e.g. strawberries, must necessarily mean that the product contains "the real thing" whereas the word *strawberry* alone may well be taken to refer to the "taste of strawberry" only. [26] This has gradually become the default assumption in Danish administrative practices, though it is increasingly challenged by products legally marketed in other EU countries, as illustrated in Figure 3.

Figure 3: Instant fruit drink with low fruit content carrying fruit illustrations and nutritional claims which is legally marketed in several EU countries

Only rarely do the cases concern more subtle visual persuasion such as pictures of medical staff on a diet supplement, or sport stars on a cereal product filled with sugar.[27] According to Kupianen et al. 2008, consumers assume. However, that the pictures, colours and forms give information about the presumed differences between the products, and that the packages can be and are used for creating and supporting different kind of images for one and same product. Properties of the package as well as the consumer unite in the consumer's image of the product. The more complicated the package is, the less important the quality of the product seems to be in itself, and the more important becomes the consumer's idea of how appropriate the product is. For example, if there is no picture available, the other elements like form and colour of the package become more important factors in creating the image of the product (ibid.). Though this form of visual rhetoric is subject to repeated criticisms by consumer organisations and in the mass media, it only rarely leads to formal complaints due to the lack of evidence sufficiently solid to cause the authorities to intervene. The FairSpeak Project takes an empirical approach to these matters by putting selected assumptions expressed by the immediate actors, including those mentioned above, to experimental test.

[26] Case No: 2007-Ø3-274-01569 (strawberry); 2002-05-274-00006 (fruits); 2005-04-274-00762 (shrimps).
[27] Case No(s): 2007-S6-274-00648; 2004-10-274-01054.

4 COGNITIVE SCIENCES AND THE REAL WORLD: SPECIALISED KNOWLEDGE ON FOOD LABELS

We shall use the "tip of the iceberg metaphor" in order to describe in detail the consequences of cognitive barriers, the "tip of the iceberg" being one information element visible on the food label which represents a complex knowledge structure, i.e. the bottom of the iceberg, which could in fact have been communicated in a longer more easily understandable text, had there been room for it on the label (Selsøe Sørensen 2008). Tips of icebergs are usually words, e.g. *sugar alcohols*, *bulking agent*, but also a seemingly straightforward phrase like *enjoy in moderation* may refer to implicit knowledge which has no directly decodable relation to the phrase.

We shall give two examples of how tiny elements of the semiotic cocktail of a wine gum product (figure 4a and 4b) presupposes the presence of a cognitive structure on the consumer's side in order for it to make sense and be used correctly for taking a buying decision. They are examples of how a single piece of information on a food label represents a complex of highly specialised information which may be partly understood and maybe used by highly informed consumers but hardly at all by less informed ones.

The front of package (figure 4a) is pretty simple with a straightforward picture of the contents (supersized) and a few claims plus one slightly odd piece of advice: "Enjoy in moderation". Why does a manufacturer want the consumers to consume less? Something is suggested which the consumer who has the relevant cognitive structure at hand will understand immediately: the fibres have a laxative effect. In order to get to know more, the consumer must look at the back of package (figure 4b). The back of package is very rich in information and demanding to read, partly because it contains identical information in three languages which does not enhance the communication, but might even scare the consumers away who have dared to look at the back of package. The answer to the question "why enjoy in moderation?" is partly given by the mention of "54 % fibres – enjoy in moderation", but a less informed consumer may still wonder what this is all about. The underlying knowledge about the laxative effect is still implicit and the less informed consumers are still not getting any clues. Some other fibre products actually mention the laxative effect, but those consumers who do not know what this word means, receive no help.

A typical example of a tip of an iceberg is *phenylalanine* found in the mention *contains a source of phenylalanine* (see figure 4b). It is in bold, but it is doubtful whether this helps to attract attention, unless the consumer already has a reason to look for it. The only thing that might trigger a search for this particular information would be a cognitive structure opening a specific information slot to be filled, which is related to the PKU disease, cf. below.

Should a consumer who does not have the relevant cognitive structure see that the claim 'contains a source of phenylalanine' and start wondering how to make sense of it, two possible ways are open: is it a negative claim or is it something positive? The only clue might be that since it is written in small print on the back of package, it is hardly a positive claim; otherwise it would have been flashed on the front of package.

Figure 4a: Nellie Dellies, a Danish wine gum product (front of package)

Næringsindhold/ näringsinnehåll/ Ernährungsgehalt/ Ravintosisältö/ Nutrition information	Pr./auf/per 100 g	Pr./auf/per 25g Portion/ Annos 1)	% GDA 2) Pr./auf/per Portion/ Annos
Energi/Energie/ Energia/Energy	850 kJ/ 200 kcal	213 kJ/ 50 kcal	3 %
Protein/Protein/ Proteiini/Protein	9 g	2,3 g	5 %
Kulhydrat/Kohlen-hydrat/Hiilihydraati/ Carbohydrate	15 g	3,8 g	1 %
Heraf sukkerarter/ hiervon Zuckerarten/ Sokereita/hereof sugars	0,6 g	0,2 g	0 %
Heraf sukkeralkoholer/ hiervon Zuckeralko-hole/ sokerialkoholi/ hereof sugar alcohols	0 g	0 g	0 %
Fedt/Fett/Rasva/Fat	0,1 g	0 g	0 %
Heraf mættede fedtsy-rer/ hiervon gesättigte Fettsäuren/tyydytty-neitä rasvahappoja/ hereof saturates	0 g	0 g	0 %
Kostfibre/Ballaststoffe/ Ravintokuitu/Fibres	54 g	13,5 g	54 %
Natrium/Natrium/ Natruim/Sodium (Salt/Salz/Suola/salt)	0,03 g (0,1 g)	0,01 g (0,02 g)	<1 %

1) Denne emballage indeholder 3,6 portioner/Dieser Beutel reicht für 3,6 Portionen/Pussi sisältää 3,6 annosta/This bag contains 3.6 portions.
2) GDA= Vejledende dagligt indtag baseret på 2.000 kcal pr dag for en voksen kvinde/Empfohlene Tagesmenge basiert auf 2.000 kcal/Viitteellisen päiväsaannin (GDA) perustana on 2000 kcal ruokavalio/ Guideline Daily Amounts based on 2,000 kcal per day.

Mindst holdbar til/Bäst före/Mindestens haltbar bis/Parasta ennen/ Best before:

05.[illegible] 20[illegible] 1[illegible]

5[illegible]

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- 54% FIBRES – ENJOY IN MODERATION
- NATURAL COLOURS

NO SUGAR ADDED, LESS CALORIES AND GREAT TASTE

(DK/N/S) VINGUMMI MED FRUGTSMAG/FRUKTSMAK. INDEHOLDER/INNEHÅLLER SØDESTOFFER/SØTNINGS-STOFFER/SÖTNINGSMEDEL.
Ingredienser: fyldemiddel/fyllnadsmedel (polydextrose), oligofruktos Ksgelatine/oxgelatin, vand/vatten, modificeret ærte-/ertestivelse/modifi rad ärtstärkelse, hvede-/hvete-/vetedextrin, syre/surhetsreglerande mec (citronsyre/-syra/sitronsyre), aroma/aromämne, farvestof/fargestoff/fä gämne (carmin/karmin), konserveringsmiddel (sorbinsyre/-syra), sødestoffe sötningsmedel (aspartam, acesulfam K), vegetabilsk olie/olje/olja, overflad behandlingsmiddel (carnaubavoks/-vax). **Indeholder en phenylalanin kilde. Innehåller fenylalaninkälla.** Opbevares tørt og køligt/Förvar torrt och svalt. **Allergener:** Kan indeholde/innehålla spor/spår av glute Uden tilsat sukker. Ingen sukkeralkoholer. 54% fibre - **bør nydes i sm mængder.** 40% færre kalorier. Kun naturlige farver.

(D) WEINGUMMI MIT FRUCHTGESCHMACK. ENTHÄLT SÜSSSTOFFE.
Zutaten: Füllstoff (Polydextrose), Oligofruktose, Rindgelatine, Wass modifizierte Erbsenstärke, Weizendextrin, Säuerungsmittel (Zitronensä re), Aroma, Farbstoff (Karmin), Konservierungsstoff (Sorbinsäure), Süßsto (Aspartam, Acesulfam K), Pflanzenöl, Überzugsmittel (Carnaubawach **Enthält eine Phenylalanin-Quelle.** Kühl und trocken lagern. **A lergene:** Kann Spuren von Gluten enthalten. Ohne Zuckerzusatz. Oh Zuckeralkohole. 54% Ballaststoffe - **sollte in kleinen Mengen geno sen werden.** 40% weniger Kalorien. Nur natürliche Farbstoffe.

(FIN) HEDELMÄNMAKUINEN VIINIKUMI. SISÄLTÄÄ MAKEUTUSAINETTA.
Ainekset: täyteaine (polydekstroosi), oligofruktoosi, liivate (nauta), v muunnettu hernetärkkelys, vehnädekstriini, happamuudensäätöaine (sitr nahappo), aromi, väri (karmiini), säilöntäaine (sorbiinihappo), makeutusa (aspartaami, asesulfaami K), kasviöljy, pintakäsittelyaine (karnaubavah **Sisältää fenyylialaniinin lähteen.** Säilytys kuivassa ja viileässä. **Alle geenit:** Tuote saattaa sisältää vehnän gluteenin jäämiä. Ei lisättyä soker Ei sokerialkoholeja. 54 % kuitua - **nautittava pieniä määriä kerrall** 40 % vähemmän kaloreita. Vain luontaisia värejä.

(ENG) FRUIT-FLAVOURED WINEGUMS. CONTAIN SWE-ETENERS.
Ingredients: bulking agent (polydextrose), oligofructose, beef gelatine, w ter, modified pea starch, wheat dextrin, acid (citric acid), flavouring, colo (carmine), preservative (sorbic acid), sweeteners (aspartame, acesulfame K vegetable oil, glazing agent (carnauba wax). **Contain a source of ph nylalanine.** Store in a cool and dry place. **Allergens:** May contain trac of gluten.

2046110

Per 25 g portion

Energy Kcal	Sugars	Fat	Saturated fat	Salt
50	0,2g	0g	0g	0.02g
3%	0%	0%	0%	<1%

of an adult woman's GDA

Figure 4b: Nellie Dellies, a Danish wine gum product (back of package)

Our approach to the tips of icebergs is to approach them by identifying what is under the tips by giving a reasonable overview of the knowledge involved. In the case of *phenylalanine,* it could be the following:

"*Phenylalanine is a hidden danger to anyone consuming aspartame. Most consumers don't know that too much Phenylalanine is a neurotoxin and excites the neurons in the brain to the point of cellular death. ADD/ADHD, emotional and behavioural disorders can all be triggered by too much Phenylalanine in the daily diet.*" (http://www.sweetpoison.com/phenylalanine.html).

The second layer (close to the bottom of the iceberg), is, in this case, a scientific definition or description of a disease related to *phenylalanine* which in this case could be something like:

Phenylketonuria is an autosomal recessive Phenylketonuria is a genetic disorder that was first discovered in 1934 by Dr. Asbjorn Folling of Norway. It can cause severe mental retardation in children that are not treated. The main treatment for PKU is a low phenylalanine diet. The location of the gene is 12q22-q24.1. There have been many experimental studies done on this disease and most of the tests to find the mutations have been run on mice. Phenyalanine hydroxylase is the disease gene, and there are approximately 70 mutations that cause PKU.

[…]

People who have phenylketonuria are unable to convert the amino acid phenylalanine to the amino acid tyrosine. The only difference between phenylalanine and tyrosine is a hydroxyl group on the tyrosine. Phenylalanine hydroxylase is an enzyme that catalyzes the reaction, but this enzyme is not active in individuals with the disease. This enzyme functions in the liver. Phenylalanine accumulates and could possibly be converted to phenylpyruvic acid. Phenylpyruvic acid is not efficiently absorbed by the kidney, therefore it spills into the urine. Both the phenylalanine and the phenylpyruvic acid enter the cerebrospinal fluid and result in elevated levels in the brain. This is what causes the mental retardation. Some other phenotypes of PKU include the following: organ damage; unusual posture; `mousy` odor; light pigmentation; and epilepsy (14).

The diagnosis of PKU is carried out by the Guthrie test. This detects elevated levels of phenylpyruvic acid in the blood during the first week of life. This is done with a needle prick in the heel and the blood is dried on filter paper so that the phenylalanine concentration can be measured. PKU must be detected early so that treatment can start within the first 20 days of life. PKU screening of a newborn can prevent retardation, because the child can be put on a low-phenylalanine diet. The low-phenlalanine diet helps to prevent phenlypyruvic acid build-up. Strict dietary management of the mother with PKU during pregnancy also helps prevent the disease. The diet should contain 100 to 200 mg/kg/day of tyrosine and 2g/kg/day of protein; this should be eaten relatively evenly throughout the day. A half of century ago, scientists discovered that the neurological risks of PKU could be avoided if children adhere to a diet devoid of meat, fish, dairy products, breads, nuts, and many other foods.[28]

Danish food labels usually have between 20 and 40 tips of icebergs including the signpost labels (Smith et al. 2009), a number of these do actually represent or involve quite complex knowledge structures, and no consumers possess the knowledge needed to decode everything (Selsøe Sørensen et al. forthcoming). Taking all this into account, it becomes clear why the task of creating fair food labels understandable to everyone which are at the same able to sell the product, and promote healthy choices, etc. is immense and must comprise a number of compromises.

[28] http://clearinghouse.missouriwestern.edu/manuscripts/159.php

5 MEETING THE CHALLENGE OF LINKING CONSUMER AND EXPERT KNOWLEDGE

We have shown the relevance of performing selective conceptual analyses of individual product concepts and the knowledge inherent in them. Now we shall argue that systematic modelling of more complex knowledge structures in the shape of multidimensional conceptual *ontologies* (e.g. Althoff et al. 2005) may also provide valuable support for fairness judgments.

A good example is the claim *sukkerfri* 'sugar free' and its alleged potential for misleading consumers even when used in accordance with its legal definition. To estimate whether and why this may become the case, one needs to consider highly specialised knowledge belonging to the conceptual domains of *sweeteners* and *sugar substitutes*[29] which intersect with several other domains (chemistry, physiology, health care, gastronomy) and can be systematised along several dimensions: chemical composition (saccharose, fructose, sugar alcohols, intensive synthetic sweeteners), functions (bulk sweetener, viscosity agent, bodying agent, humectant, crystallisation modifier, etc.), nutrition value and health benefits (related to caries, diabetes, obesity, etc.), intensity of taste, etc. Only fragments of this specialised knowledge are available to ordinary consumers, and even smaller fragments can realistically be represented as a "tip of the iceberg" on the individual package (Selsøe Sørensen 2008). Nevertheless, a systematic extraction of those particular fragments of knowledge that would justify the claim *sugar free* for a particular product, i.e. make it contextually relevant in Sperber & Wilson's sense (Sperber & Wilson 1995, Wilson & Sperber 2004), is a necessary precondition for predicting possible pitfalls in consumers' understanding of the claim and preventing them as well as possible. For example: ensuring that *sugar free* chewing gum with sorbitol is chosen by consumers to protect their teeth, not to maintain a diabetes diet where e.g. aspartame or saccharin would be a less hazardous choice.

According to studies of consumer attention, it has been documented that consumers consciously and unconsciously structure their relationship to food consumption, and that different kinds of contradictions belong to the postmodern consumer culture, especially the consumption of food (Leipämaa-Leskinen 2009.) These contradictions are related to meanings of healthiness, safety, responsibility and economy, all aspects that are present in the decision-making when dealing with food. Typical elements that characterise the contradictions in food-consumption are asymmetry between the ideals and realities, meaningfulness, situational flexibility and dynamism. While buying, making and eating food, the consumer negotiates between several sets of opposite values: novelty-tradition (i.e. whether to choose modern or traditional recipes, products and ingredients), wholesomeness-pleasure (whether to make healthy choices or tasty choices), economy-wastefulness (shall the food be cheap or expensive and thus luxurious, what about the fact that not all the people in the world will have enough food?), ease-bother (whether to cook quickly when coming home or to turn the cooking and eating into a process that lasts several hours), technology-nature (should the products be processed or not?) and together-alone (what do you eat when you are alone, compared to what you choose when you are having with family or friends?), see Warde 1997; Luomala et al. 2004; Leipämaa-Leskinen 2009: 111. The consumer can have passive, active or reactive roles towards the contradictions in the process of consuming food. These dimensions pass more or less consciously through the mind of a person who is deciding which food package to buy.

The other key variable in predicting such volatile inferences is the consumer's expected knowledge. However, there are practical limits to the depth and degree of individualisation, which are feasible when it comes to assessing the knowledge of laypersons, as compared to professional knowledge which is available in abundance from numerous written sources. Ongoing FairSpeak work includes the development of a generic tool in the shape of a questionnaire designed for rating individual consumers' knowledge as "average", "above average" and "below average" across a wide array of food, nutrition and health issues (Selsøe Sørensen et al. forthcoming).

[29] To get an impression of these knowledge domains, see e.g. http://en.wikipedia.org/wiki/Sweetener and http://en.wikipedia.org/wiki/Sugar_substitute.

Consumer understanding is narrowly connected to another phenomenon which is of great importance, but which we shall refrain from considering in detail here, namely visual attention. Consumers obviously need to see and pay attention to a labelling element before deciding to try to decode it and eventually letting it affect their buying decision. Furthermore, the sequence in which each element is gazed at will affect the way in which it is interpreted. Although visual prominence is a matter of explicit concern in a substantial number of the cases reviewed (see Clement 2007), the majority of them concern the "trivial" issue of poor readability due to small fonts, insufficient colour contrast, etc. However, in some cases, the mutual positioning and relative visual prominence of different elements and their possible impact on consumers' expectations are also considered.[30] Still, the final judgment relies on individualised case-by-case judgments rather than more systematic considerations on the functioning of human visual perception, let alone empirical evidence.

In brief, human visual attention is guided by two mechanisms complementing each other: stimulus-driven (bottom-up) and goal-driven (top-down) attention (Chun & Wolfe 2001). Relating these to the purchase situation elicits a situation where consumers make use of stimulus-driven search at the beginning in order to get an overview of the product category. If the package designs within the category are clearly differentiable, e.g. using a colour as indicator for type, the search process runs fast and smoothly (Wolfe 1999). When a salient labelling element attracts attention, the consumer shifts to goal-driven attention in order to fully interpret the stimuli (Neisser 1976). Wolfe (1998) identifies a number of features of visual elements able to stimulate either bottom-up processes or top-down processes. Experimental research has found the greatest effect on visual search through a combination of features (Theeuwes et al. 1998) so that the stimulus is able to attract visual attention immediately no matter what. According to a recent study of food packages (Kauppinen-Räisänen & Luomala 2010), consumers assume that there is a qualitative connection between colour meanings and a product, i.e. consumers assume that the package colours, involuntarily and voluntarily, tell something about the qualities of the product. The colours draw attention to the product, and contribute to the aesthetic attractiveness and the consumer's idea of the quality of the product (Kauppinen-Räisänen & Luomala 2010: 288 f.). Regarding involuntary attention, consumers react especially ton yellow and red. These colours are noticed, and often experienced as manipulative (Kauppinen-Räisänen & Luomala 2010: 296). Red and yellow also communicate product effectiveness: a medicine packed in a red package is supposed to be stronger than the yellow one. Regarding voluntary attention, it appears that particular colours are associated with brands in these product classes, especially with strong and leading brands (e.g. "Burana is green", ibid.). Colour could thus be interpreted as one of the brand elements that could be misleading, as has been stated earlier in this contribution. Colours create strong associations with the qualities of the products, i.e. the taste and the ingredients (e.g. lime, herbs, and colourants) and the assumed consequences related to the product. In other words, some colours are assumed to be a sign of the effectiveness of the product (Kauppinen-Räisänen & Luomala 2010: 299). Colours attract attention, give aesthetic experiences and communicate about the products. The consumers seemingly use colours as a navigation tool for example to find brands. Still, colour is only one of the elements of the semiotic cocktail with which consumers are confronted.

Against this background, we distinguish between two *processing hierarchies* which constantly interfere with each other: (a) a hierarchy of *visual attention*, i.e. what is gazed at first, second, and third, and (b) a hierarchy of *semantic disambiguation*, i.e. the potential of one labelling element to influence (prime) the interpretation of the next, depending on the gaze order. To take a simple example, if a consumer first notices a visually prominent brand name like *Arctic* on the package, then a photo of an iceberg, and completely overlooks the product name *warm water prawns (metapaeneus monoceros)*, (s)he is likely to expect the prawns to come from northern polar waters, regardless of the fact that Malaysia is specified as the country of origin on the back of package where (s)he may not even look. By contrast, if the consumer first notices the product name, (s)he will have no doubts that the prawns come from warmer waters, yet (s)he may also find the illustration odd and the brand name highly misleading. Ongoing FairSpeak research includes registering the participants' gaze order and gaze durations by means of eyetracking equipment during the performance of decision-making and food-name-interpretation tasks to test more specific predictions along these lines.

[30] Case No(s): 2006-Ø2-274-02728; 2002-05-274-00006; 2002-20-272-0073.

Figure 1 showed the anatomy of the in-store food to consumer communication with emphasis on the links between on the one hand the cognitive structures and the food label and on the other hand the ideal reconstitution of these links between the consumer's cognitive resources and the relevant cognitive structure. Given that the conditions for this reconstitution are flawed by lack of knowledge, the food label creator must make an effort to pave the way for the best possible support for the less informed consumer. This should be done by making sure that important tips of icebergs are placed in such a way on the front of the package that they are likely to catch the attention of the consumers. Tips of icebergs should be selected according to how broadly they are expected to be understood. Not mentioning explicitly the laxative effect of fibres (Figure 4b) is neither fair nor very user-friendly.

The mention of *laxative effect* would have been better, although a wording like *fibres stimulate the intestines* would have been the most directly understandable and thus more fair at least to those consumers who ignore the meaning of the Danish equivalent to the word *laxative*. Being even more explicit by using a phrase like *fibres could cause the body to eliminate waste* would take it too far have a negative influence on the sale. Careful planning of the details of the links between the underlying knowledge and the actual presence of the iceberg in the semiotic cocktail along these lines will help in promoting fairness. Figure 5 suggests how communicative and fairness issues such as those mentioned which draw upon the cognitive sciences must be embedded in overall strategies which comprise marketing purposes, legal considerations and even the planning and development of novel foods – or enhancements of existing food products in order to make them fit a cognitive scheme unveiled during the cognitive accommodation process. This would indeed be a novel top-down approach to the invention and marketing of novel food products.

6 CONCLUDING REMARKS

Several key aspects of in-store food-to-consumer communication have not been considered in depth in this article. For one thing, we have mainly concentrated on consumers' expected decoding of the ready-mixed semiotic cocktails found on actual packages, taking a semasiological perspective throughout. Future research should also include more of the onomasiological perspective, i.e. address manufacturers' and packaging designers' challenge to transpose complex product information into labelling elements on the individual package while maintaining a fair balance between guiding consumers *and* selling the product. Also, we have not gone into details with the specific product properties in regard to which consumers can potentially be misled or feel misguided, which span from nutrition value and animal welfare through taste to social prestige. Nor have we addressed the fact that the truth of some claims can be sought only in a semi-fictive universe of storytelling, e.g. "so tasty that the birds start to sing" (on bread from Lantmännen-Schulstad). Fairness recommendations clearly require a prioritisation among such issues and discourses, which, in turn, involves additional considerations on the borderline between self-deception and potential misleadingness. Last but not least, in a still more globalised food market, the intersection and possible clashes between established linguistic, visual, and cultural codes and "world views" pose a number of additional challenges to fairness assessments across national borders which have now become mandatory according to EU law.

Last but not least, in a growingly globalised food market, the need for linguistic, visual, and cultural adaptation of fair food labelling solutions to individual regions and countries poses a number of additional challenges which involve such notions as lingua-cultural relativity and clashes of linguistic world-views (Nisbett 2003, Durst-Andersen 2011). A special concern here is the new EU regime on nutrition and health claims stipulated by Regulation 1924/2006/EC. The new rules, which have not been fully implemented yet, allow for highly explicit claims on certain nutrition and health benefits, provided not only that the effect can be clearly documented, but also that the *explicit wording* of the claim in all EU languages in which it will be made can be approved by the European Food Safety Authority (EFSA). This has fostered an increasing call for empirical knowledge and new analytical tools to support such assessments.

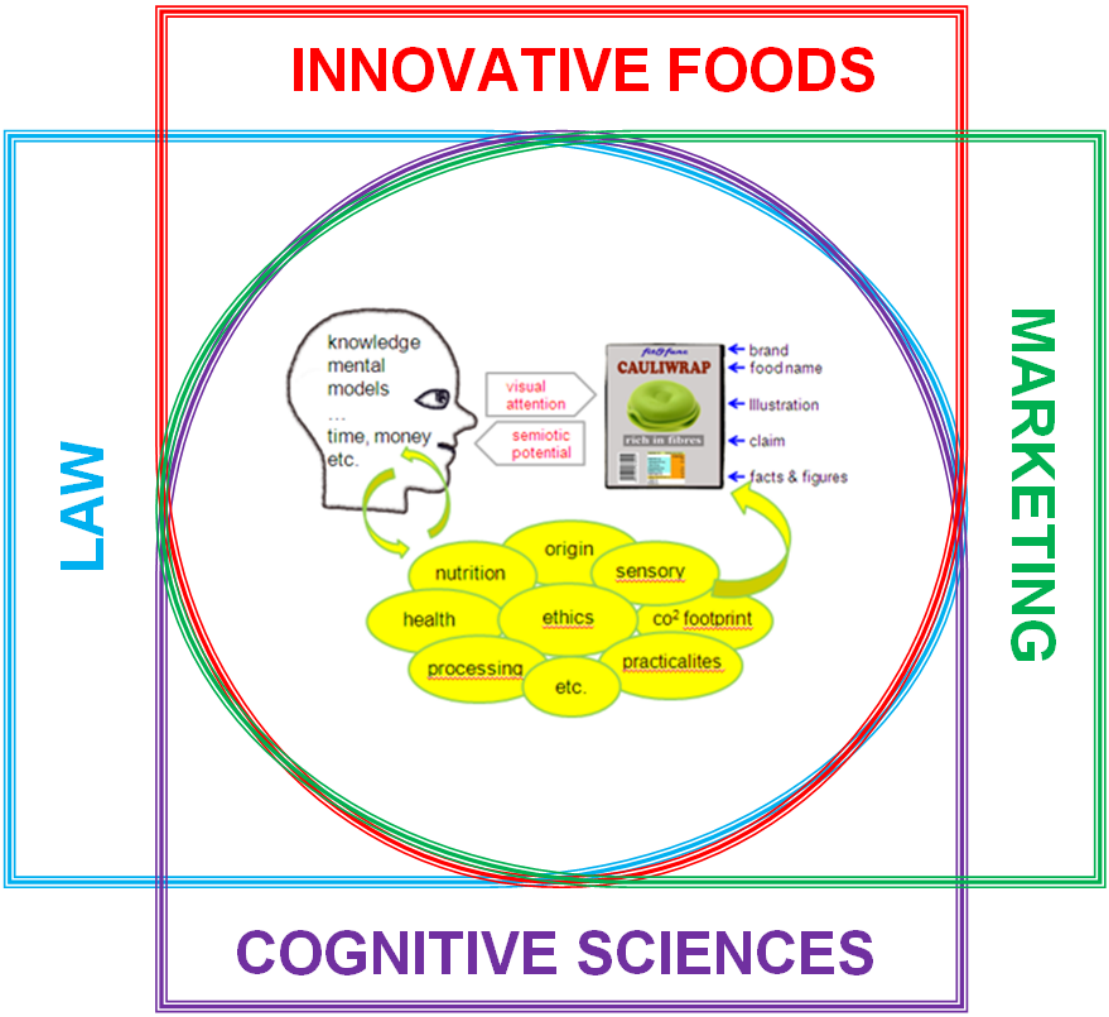

Figure 5: The framing of labelling communication

Coming back to the question, who is to decide, and on what grounds, whether a particular food specimen should be named *bacon*, *apple juice*, *butter cookies* etc.*,* again, the answer is rather simple. Terminological standards and technical conditions make up the grounds of the checking procedure only if they exist and are still valid on the day of checking procedure. Standardisation of the field should not be an insurmountable problem, because organisations, official bodies and committees authorised to decide whether the food specimen is nominated properly often function within the framework of various ministries and departments in accordance with the established procedure, and the food industry is no more an exception to this rule than, say, machine-tool construction or aircraft construction.

Still, to proceed along any of these paths, researchers need an explicit and coherent meta-language in which the issues can be identified and analysed. While many of the commercial, legal, linguistic, cognitive, and other concepts and empirical findings presented in this article are not new in themselves, they have, to our knowledge, never previously been brought together in pursuing one common goal. However, none of them can be left out, if the goal is to capture the full complexity of consumers' decoding of food labelling information during everyday shopping and evaluating the outcome from a fairness perspective. Rather, other fields such as sensory science and emotion

research have essential insights and tools to contribute as well. With this transdisciplinary approach, we hope to have laid down the first stepping stones for continued progress in these directions.

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Language policy and LSP planning

IITF-colloquium 2011

in connection with the

XVIIIth European Symposium on Language for Special Purposes, 22 – 26 August 2011 at Perm State University in Russia.

"Special Language and Innovation in a Multilingual World".

Introduction

Since 2001 the International Institute for Terminology Research (IITF) has organised colloquia within the organisational framework of the European LSP Symposium which takes place every two years. The general aim of these colloquia is to offer a platform for discussion of modern theoretical and applied issues within the field of terminology.

According to the classical division between "status planning" and "corpus planning", the available time will be divided approximately equally between the two issues. Unlike what has been the case at previous colloquia, one of the keynote speakers, Prof. Dr. Johan Myking, Norway, will offer a general review of the subject.

Organisational issues

The duration of the colloquium is 1½ day following the keynote speech by Prof. Dr. Johan Myking in plenum. The language is English for all contributions and discussions. The organisers invite recognised specialists who are asked to represent a given subject. They are allotted approximately 45 minutes. Furthermore, the organisers invite respondents to these representations; the aims of the respondents are to add information, to deepen the issue in hand or to present another view. The respondents will have 15 minutes for their oral presentation; however, the written version for publications may be longer.

Programme of IITF Colloquium

Language policy and LSP planning

Monday, 22 August 2011

Part I: Language policy

14.00 – 14.10	**Opening**
14.00 – 14.55	**Ass. Prof. Viktor Smith,** **Ass. Prof. Henrik Selsøe Sørensen** Copenhagen Business School, FairSpeak, Denmark ***"When cognitive sciences meet real life: Decoding the semiotic cocktail of food labels from a fairness perspective"***
Respondents:	
14.55 – 15.10	**Dr. Niina Nissilä**, Vasa University, Finland **Mr. Serguey Shelov,** Vinogradov Russian Language Institute, Moscow, Russia
15.30 – 16.00	Coffee break
16.00 – 16.45	**Dr. Albina Auksoriute** (Head of the Centre of Terminology; the Institute of the Lithuanian Language), Vilnius, Lithuania ***"Language policy in Lithuania - State-of-the-art and social conditions and theoretical foundation"***
Respondent:	
16.45 – 17.00	**Prof. Dr. Sergiusz Griniewicz ,** University of Bialystok, Poland
17.00 – 17.15	Discussion

Tuesday 23 August 2011

10.30 – 11.15 Prof. Dr. Christer Laurén, Vasa University, Finland
"Nordic language policy – a long tradition which is still very much alive"

Part II: LSP planning

11.15 – 12.00 Prof. em. Dr.h.c. Heribert Picht, Denmark
"Parallel language use – a solution for minor languages?"

Respondents:

12.00 – 12.15 Prof. Dr. Merja Koskela, Vasa University, Finland
12.15 – 12.30 Prof. Dr. Nina Pilke, Vasa University, Finland

12.30 – 14.00 Lunch

14.00 – 14.45 Dr. Christian Galinski (Director of Infoterm), Austria
"The work of today's TC/37 in the light of 'semantic interoperability'. Standardisation as an issue of corpus planning."

Respondents:

14.45 – 15.00 Birthe Toft, PhD, Syddansk Universitet, Denmark
15.00 – 15.15 rof. Dr. Vera Tabanakova, Tyumen State University, Russia,

15.15- 15.30 Discussion / Questions

15.30 – 16.00 Coffee break

16.00 – 16.45 Prof. Dr. Klaus-Dirk Schmitz, Fachhochschule Köln, Germany
"Localisation – an issue of terminology planning. Theoretical foundation and practical implications"

Respondents:

16.45 – 17.00 Prof. Dr. Sue Ellen Wright, Kent State University, USA
17.00 – 17.15. Prof. Dr. Sergiusz Griniewicz, University of Bialystok, Poland

17.15 – 17.55 Final discussion and closing