

# Assessing In-Store Food-to-Consumer Communication from a Fairness Perspective: An Integrated Approach<sup>1</sup>

Viktor Smith, Jesper Clement, Peter Møgelvang-Hansen, Henrik Selsøe Sørensen

**Abstract** This article addresses a highly specialised form of communication that most people in the industrialised world engage in every day: The one-way communication between a food product and an individual consumer who is considering buying the product during his or her daily shopping in a supermarket. In addition to identifying and analysing the key variables of this form of communication, we focus on how the outcome is best evaluated in terms of fairness. Using an in-depth review of 821 Danish administrative cases on misleading food naming and labelling as an empirical frame of reference, we set up a cross-disciplinary conceptual framework and meta-language suited for identifying and analysing the conflict scenarios displayed by these cases beyond the common-sense reasoning that dominates the argumentation of the immediate actors (companies, consumers, authorities) today. A key aim is to provide a conceptual basis for predicting and systematically testing the misleading potential of specific food labelling solutions on empirical grounds, as a supplement to testing consumer liking, preference, and choice, which has been the main focus in adjacent, mostly marketing-oriented research.

**Keywords** conceptual analysis, EU law, fairness, food labelling, misleadingness, naming, psycholinguistics, relevance theory, semiotics, unfair commercial practices, visual attention, visual communication

## 1 Background, aims, and scope

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 (cf. 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 will feel misled by what the packaging “told” 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 backside of a product that presents itself as *guacamole dip*.<sup>2</sup> 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).

The cross-disciplinary Danish research project *Spin or fair speak – when foods talk* ([www.fairspeak.org](http://www.fairspeak.org)) was established to provide a new, shared frame of reference for food manufacturers, authorities, and consumer organizations for assessing in-store food-to-consumer communication from a fairness perspective. A key aim is to develop experimental techniques for testing the misleading hazards of individual food labelling<sup>3</sup> solutions on empirical grounds. This article presents the cross-disciplinary framework and meta-language developed to sup-

port these purposes, allowing the researchers involved to identify the variables of interest in sufficiently precise and mutually understandable terms. Focus is on the key elements of the framework itself whereas more detailed analyses of individual conflict scenarios and original experimental findings are reported in separate studies.

## 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. 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 (cf. Howells, Micklitz/Wilhelmsson 2006, MacMaoláin 2007, FSA 2008). However, assessments of misleadingness in these fields do not traditionally rely on empirical evidence or explicit theorizing beyond the sphere of jurisprudence, but on common-sense judgements made by lawyers and government officials regarding the "likeliness to mislead" (see section 3). Harmonization 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) (cf. Legrand 1996, Incardona/Poncibò 2007, Engberg 2007, Smith 2007, Trzarskowski 2010).

In the following, selected principles and insights from the latter 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 (see Figure 1). 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 is to contribute to the optimization 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 2002–2007 (cf. Smith et al. 2009). The cases were initiated either by complaints from individual consumers, consumer organizations, or competing companies, or by the authorities themselves in the course of supervision. 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 hypotheses to be tested

empirically. This article summarises the key elements of the resultant conceptual framework, using authentic examples from the case material throughout.

### 3 The legal concept of misleading food labelling and its operationalization

#### 3.1 Defining the concept

The 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. Article 6 states:

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,<sup>4</sup> 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 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 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 operationalization of the legal concept of misleadingness, i.e. making the criteria “measurable”.

#### 3.2 Operationalizing the legal criteria

Several complications arise from this. 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’ expectations, their actions, or a combination? 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 (cf. Bagozzi, Gopinath/Nyer 1999, DeBono, Leavitt/Backus 2003, Clement 2007). Is it therefore justified to maintain that the consumer has been misled when (s)he took a quick glance at the packaging, but did not scrutinise it, and later felt disappointed? Perhaps not, but many daily purchase decisions are bound to be made in that way, unless we want 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 (e.g. using the instruction “go for the healthiest alternatives” while adding time pressure) are suitable for this purpose. The further methodological implications of this are beyond the scope of this article.

Finally, 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 (5.3 and 6.1) we will nevertheless argue that a more systematic qualitative modelling of selected knowledge structures and quantitative assessments of general knowledge levels on food, nutrition, and health issues, can be essential for approaching some conflict scenarios operationally.

#### 4 The anatomy of in-store food to consumer communication: First overview

Figure 1 sums up the key variables involved in in-store food-to-consumer communication. It also shows the main fields of research and practices concerned with creating, evaluating, defining, and analysing such variables.

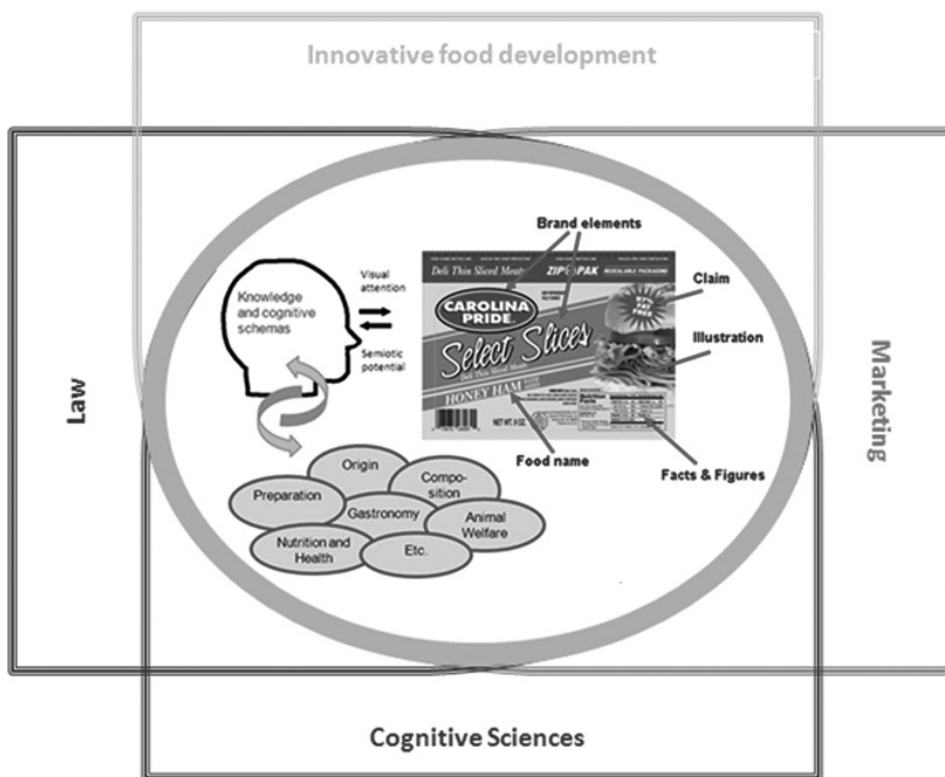


Figure 1: The anatomy of in-store food-to-consumer communication

The upper right part of the figure illustrates the total symphony of words, texts, figures, etc. that “speaks” to the consumer from the packaging, also referred to as the *semiotic cocktail* of food labelling. The ovals in the lower part of the figure illustrate the various material and im-material properties of the food product that these elements 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, 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 semiotic potential received in return. 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 of the labelling elements whatsoever, and to what sense is made. In the following, we consider the variables just introduced and their interplay in further detail.

### 5 The semiotic cocktail and its ingredients

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 (cf. 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 (cf. 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 has been pointed out in the case material as potentially causing consumers to be misled (cf. Smith et al. 2009: 120ff.). The table includes 1000 instances distributed on 821 cases.

Table 1: Labelling elements pointed out as potentially misleading ordered by category (Smith et al. 2009: 120)

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

### 5.1 Brand elements and signpost labels

By brand elements we here understand the immediate verbal and visual carriers of the product's brand identity such as the words *Coca Cola* written in characteristic typography on a red background. Modern branding strategies often build on multi-level brand portfolios (cf. Carlotti, Coe/Perry 2004) which means that the same packaging may carry indications of both (a) a *master brand* like *Arla* and *Danone*, (b) a *sub-brand* like *Kedla* and *Karolines Køkken* 'Caroline's Kitchen' which are sub-brands of *Arla*, (c) a *product series* like *Minimum* 'Minimum' or *Princip* 'Principle' comprising selected products marketed by a Danish retail group, and (d) a trade name for individual products, e.g. *Nellie Dellies* for a particular variety of wine gum made by the *Toms Group*. The latter cannot legally replace a product name (see 5.2), but the delimitation sometimes becomes blurred in practice (see Example 1 in Figure 2 below).

The bulk of branding research and corresponding practices are oriented towards facilitating product recognition and supporting positive expectations and loyalty from consumers (Underwood 1996, Keller 1993). The present study takes a somewhat different approach in targeting the communicative and cognitive specifics of brands that may cause consumers to have unjustified expectations about the products carrying them. At first glance, the problem would seem to be limited in that only 4.7% of the instances of allegedly misleading labelling found in the case material concern brand elements and signpost labels. However, part of the explanation may well be that brands have certain inherent characteristics that make it particularly difficult for consumers to substantiate their misleading potential compared to other labelling elements.

Branding builds on a deliberate synthesis of verbal and non-verbal elements into an idiosyncratic "micro-language" in its own right (e.g. McCormack, Cagan/Vogel 2004, Rindell 2008). A common trait with ordinary language is that brand elements are capable of conveying a conceptual content that is far more elaborate than what e.g. an isolated picture could convey. The crucial difference, however, is that brand-language displays a high degree of autonomy from the rules and principles that govern our comprehension of the language that we all share (see 5.2. and 5.3), and also from the (looser) conventions that support picture-reading in general (see 5.5). Thus, *Minimum* is not just a plain Danish word when (re)used as a brand, and the stylised burger in Burger King's logo is not just some picture of some burger. The conceptual content conveyed by such elements has been systematically built up by the brand owners themselves through advertising campaigns, media coverage, consumer information on homepages, sponsorships, etc. To determine what exactly *Minimum* is supposed to mean as a

commercial brand, a consumer will therefore need to engage in extensive intertextual investigations (e.g. Warton/Still 1990) that go far beyond what is said on the individual package and hence pose an extreme case of what Sinha/Kuteva (1995) label *distributed semantics*.

Several fairness challenges are connected with this. 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 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 that an individual consumer may interpret them more literally and potentially be misled. The likeliness of this happening is what the dispute in Example 1 in Figure 2 was all about.



<p><b>Example 1: Real juice</b></p>  <p>A complaint against the brand name <i>Rigtig Juice</i> ‘Real Juice’ was first sustained by the authorities because it could not be substantiated what made the juice more “real” than other fruit juices. However, the decision was set aside by the court of appeal which ruled that the name, after having been known as a brand for 30 years, was no longer likely to be understood as referring to specific product properties. Case Nos: UfR 2001.2161 Ø</p>	<p><b>Example 2: What’s new at the green butcher’s?</b></p>  <p><i>Den Grønne Slagter</i> ‘The Green Butcher’ was first introduced as a series of cold meat products containing less than 3% fat. The fat had been replaced by potato fibres. Later, other products were included that were low on fat to begin with and/or low on other undesirable ingredients (additives, allergens) while the fat limit for some products was raised from 3% to 6%. Though these and other adjustments of the brand policy were communicated through relevant channels, it has been maintained that consumers are likely to get confused and expect all the products to be lower on fat than comparable ones and/or to contain potato fibres. Case No(s): 2005-20-272-01666; 2005-04-274-00670.</p>
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Figure 2: Examples 1–2. Conflict scenarios relating to brand elements

In other cases, the problem relates to the distributed semantics behind the immediate brand-carriers on the package; see Example 2 in Figure 2. Here the question is not whether a certain “butcher” is green or not (or exists at all), but whether ordinary consumers risk to get lost in the brand owner’s total market communication. 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 organizations, 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.

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 (cf. Clement, Selsøe Sørensen/Smith 2010).

Related challenges are posed by *signpost labels* such as Max Havelaar's *Fairtrade* label or EU's *Organic Farming* label. A key difference is that these labels concern relatively specific food properties the importance of which is widely recognised in society, and that many of them are created and controlled by independent bodies, not by individual companies, which gives grounds to expect a clearer separation of objective consumer information from sales promotion. Yet the problems of distributed semantics and uneven definitory competence remain exactly the same here.

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 (cf. Selsøe Sørensen 2010). A further risk in such cases are over-generalizations in the shape of halo- and magic-bullet effects as further discussed in 5.3 with reference to verbal claims.

### 5.2 *What's in a food name?*

With food names we take a step away from deliberately constructed signs and meanings towards the general language(s) that we all share. 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?

According to the EU Labelling Directive 2000/13/EC, Article 3.1.1, any food product sold in the EU shall carry a name. However, ordinary consumers as well as competitors and the food authorities sometimes disagree with the name chosen by the manufacturer which has become the point of dispute in 27.2% of the instances of allegedly misleading food labelling found in the Danish case material. Below, we transpose the common-sense reasoning dominating the explicit argumentation of the immediate actors into more exact theoretical terms, drawing, in particular, on relevant data and analytical tools from cognitive semantics and experimental psycholinguistics.

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. In turn, this is a matter of determining what these words *mean*. In some cases, the matter would seem to be settled *a priori* by food standards containing legal definitions, e.g. for fruit juices or for chocolate.<sup>5</sup> Whereas the legal conclusion in such cases is clear, it may be questioned whether such definitions always reflect the actual expectations of ordinary consumers (cf. Ohm Søndergaard/Selsøe Sørensen, 2008).

However, the vast majority of food names are not legally defined. In these cases, the question is what the name means as an element of the general language in question. Following the predominant approach in cognitively oriented linguistics (cf. Talmy 2000, Evans/Green 2006) and terminology management (cf. Wright/Budin 1997, Temmerman 2000),<sup>6</sup> 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 *categorization* 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 (1983, 1987, 1999, 2005, 2008) whose approach encompasses earlier theorizing and evidence on prototype-based categorization and graded conceptual structure (e.g. Smith, Shoben/Rips 1973, Rosch 1975, Wierzbicka 1985, Taylor 1989),<sup>7</sup> 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 conceptualization 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) *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 (cf. Smith 2010, in continuation of Barsalou 1999, Moskowitz et al. 2006).

On this background, a basic 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.





<p><b>Example 3: Almonds for texture or for taste?</b></p>  <p><i>Makroner</i> ≈ ‘macaroons’ 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 the 1940ies and that consumers like and buy the product. Case No(s): 2007-S5-274-0792; 2007-S5-274-00795.</p>	<p><b>Example 4: Nutrition vs. tradition</b></p>  <p>Very traditional Danish cold meat product called <i>rullepølse</i> (literally ‘roll(ed) sausage’) re-introduced in a low-fat version made of pork fillet and not belly, as demanded by traditional recipes. Fat reduced from 25% to 3%, but has the standard recipe and <i>name</i> been violated? Case No(s): 2005-04-271-00034; 2005-05-274-00437.</p>
<p><b>Example 5: Halal ham</b></p>  <p>Consumer insists that the product cannot be correctly named halal <i>kogt picnic skinke</i> ≈ ‘halal boiled picnic ham’ since it is made of turkey and not pork. While this may potentially compromise <i>skinke</i> ‘ham’, it at the same time justifies <i>halal</i>. Case No(s): 2005-01-274-00386; 2003-10-274-00462.</p>	<p><b>Example 6: Pizzatop</b></p>  <p>New product developed as functional (and sensory) equivalent to pizza cheese, but mainly containing other ingredients than cheese, marketed under the names <i>Pizzatop</i> and <i>Pizza Topping</i>. Main objection: Cheese is what you normally put “on top” of a pizza. Case No(s): 2006-N4-274-00998; DAF; 2006-N4-274-00999.</p>

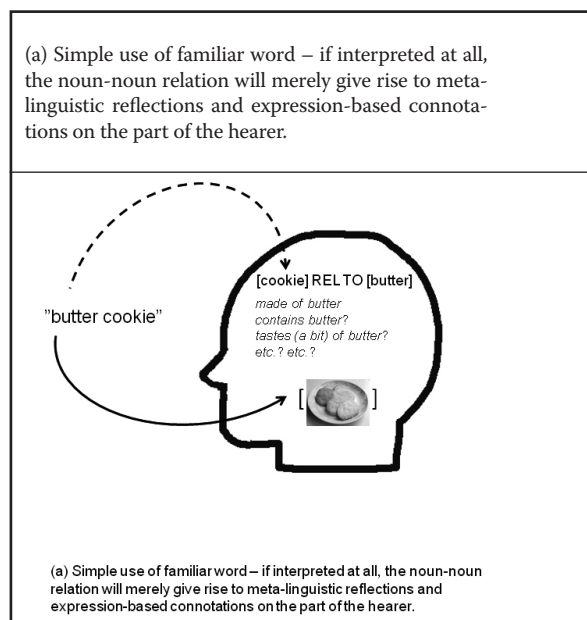
Figure 3: Examples 3–6: Conflict scenarios relating to established and novel food names

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 cases like Examples 3 and 4 in Figure 3, 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 (see also 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 judgement of “experts”. The question is, however, whether the expert’s final judgement 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*? Also, we may ask ourselves who *are* the relevant experts? 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.

In contrast, novel food names will not activate any well-delimited concept with consumers or anyone else seeing them for the first time. That concept needs to be crystallised and acquired first. Until this happens, “everybody is an expert”. To cope with this, we need to supplement our “static” conceptual analyses with a better understanding of how food names, like any other, are processed during online language comprehension.

Figure 4 summarises certain key insights gained in experimental psycholinguistics on the processing of established (familiar) versus novel (unfamiliar) lexical expressions in general, focussing on *compounds* which constitute the vast majority of commercial food names in languages like Danish, English, or German.



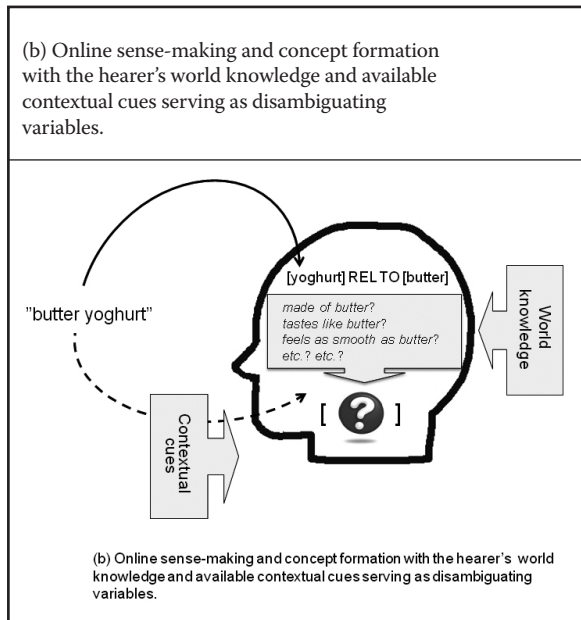


Figure 4 (a)/(b): Decoding of established and novel food name

Several studies suggest that once a compound has become familiar to us, we do not routinely split it up (decompose it) and (re)analyse the relation between its constituents in order to activate its established whole-word meaning (for reviews and discussion, see Andrews/Davis 1999, Libben/Jarema 2006). Yet we are, of course, free to do so at any time, as indicated by the dotted arrow in Figure 4 (a). It is thus characteristic that in Example 4 above the relation between *rulle-* 'roll(ed)' and *-pølse* 'sausage' is not part of the dispute at all, notwithstanding that the particular use of *pølse* might seem odd to some considering that the product is made of solid, not of minced, meat. But the parties' focus is on the full concept conveyed, not the building-bricks originally chosen for conveying it.

However, for novel compounds the case is entirely different. Since there is no familiar 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, see Figure 4 (b). While the resultant interpretation cannot yet be equated to a fully developed whole-word meaning in the shape of a stable concept, it can be argued that in the process of acquisition it will function as a cue (a semantic-to-semantic sign) facilitating the gradual crystallization of such a concept (see Smith 2001, in continuation of Wüster 1959/60: 191ff.).

When presented in isolation, the interpretation is sensitive to such factors as analogies with other, familiar, compounds (cf. Gagné 2001, Krott/Nicoladis 2005), and the conceptual "compatibility" of the constituent concepts (cf. Murphy 1990, Gill/Dubé 2007) which may require a metaphorical extension of one or both of them, e.g. *land yacht* for a luxury car (cf. 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 (cf. Gagné, Spalding/Gorrie 2005, Zlatev et al. 2010). In the studies mentioned, the contextual bias had shape of surrounding sentences. However, for commercial food

names the context of primary interest are the words, texts, and pictures found on the surrounding labelling.

All of this adds new shades to conflict scenarios like those in Examples 5 and 6 in Figure 3 which tend to circle around the name's built-in semantic potential and its "objective" interpretation. The actors often seem to take it for granted (a) that the meaning of the whole must necessarily be a direct function of its parts, and (b) that there is therefore only one "objective" and "correct" way in which the name can be interpreted. The above calls for a modification of both assumptions. For Example 5 it could thus alternatively be argued that precisely the conceptual clash between ham and Halal could also facilitate a non-misleading interpretation. This would require a metaphorical extension of *ham* (just like of *yacht* in *land yacht* above), but if that could be achieved, the constellation might 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. In Example 6 there is not even a need for a metaphorical extension to reach an interpretation fully consistent with facts. It is rather the prior knowledge and expectations of (some) consumers that clash with such an interpretation.

In cases like these, the misleading potential is clearly present, but the outcome is not determined by the anatomy of the name alone. It will ultimately depend on how this information will be interpreted in view of consumers' expectable background knowledge, and, not least, by what has been done to support the intended interpretation by the surrounding labelling, say, by claims like "great taste, no pork" or "even better than cheese".

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.

### 5.3 Text

The category *text* in Table 1 comprises all verbal statements on the packaging that are not classifiable as brand elements, regulated labels, or food names, neither included under *facts & figures* as defined below.

A further subdivision can be made between verbal *claims*<sup>8</sup>, 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 (see 6.2) 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.<sup>9</sup> 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.<sup>10</sup> 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% *less fat* → than in what?) or deixis (*Now 50% stronger* → since when?). However, consumers may also make 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 (cf. Austin 1963, Searle 1969).

Example 7 in Figure 5 displays a subtle interplay between semantics (the exact meaning of *sukkerfri* ‘sugar free’ and the functioning of the “division of linguistic labour” between laymen and experts, see 5.2) and pragmatics (the wider health benefits that ordinary consumers are likely to expect from sugar free products in whatever sense comprehended, see also 6.2). By contrast, Example 8 is all about pragmatics while the semantics (and truth) of the claim remain beyond discussion.



<p><b>Example 7: Sugar free... but how free?</b></p>  <p>The claims <i>sukkerfri</i> ‘sugar free’ and <i>sødet med frugtsukker</i> ‘sweetened with fruit sugar’ supplemented by <i>et sødt liv uden sukker</i> ‘a sweet life without sugar’ claimed to be potentially misleading though used in full accordance with the legal definition of <i>sukkerfri</i> ‘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. Case No(s): 2004-09-274-00089; 2003-09-722 -11318.</p>	<p><b>Example 8: Low-fat wine gum</b></p>  <p>The claim <i>Max 0.3 g Fedt pr. 100 g</i> ‘Max 0,3 g Fat per 100 g’ on the front of a series of wine gum products 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 gum, which is not the case. However, throughout the proceedings the manufacturer maintained that the relevant comparison (if any) was not with wine gum, but with other types of sweets among which e.g. chocolate or marzipan contain much more fat. Case No: 2005-10-274-01405.</p>
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Figure 5: Examples 7–8: Conflict scenarios relating to verbal claims

Characteristically, no empirical evidence was 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. overgeneralizations 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 (cf. 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* (cf. 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.

To take the wine gum example again, a less informed consumer might think: “Wow, I didn’t know that there was a lot of fat in wine gum – 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.” 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 partially related approach).<sup>11</sup>

#### 5.4 Facts & Figures

This category includes such labelling elements as the list of ingredients, nutrition 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 backside. 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 reveal.

#### 5.5 Illustrations and other non-verbal elements

The term *illustrations* here covers recognizable pictorial representations of real-world or fictive objects as well as non-figurative visual elements like ornaments, 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 shortly.

Only 77 (7.7%) of the instances of allegedly misleading labelling found in the case material concern purely non-verbal elements. Most of them are pictorial representations of either the products itself, its ingredients, or other objects, and we will restrict ourselves to considering only that type of elements here. A smaller, but highly challenging, subset of cases concerning other non-verbal attributes, some of which do not even qualify as illustration (colour of product, packaging texture) are further analyzed in Smith, Møgelvang-Hansen/Hyldig (2010).

The number of cases is surprisingly modest considering that it is well documented that pictures and other visual elements exert a strong and direct impact on consumers’ visual atten-

tion and subsequent intention to buy the product (e.g. Underwood, Klein/Burke 2001, Anker 2010). However, the explanation may well lie in difficulties of explicit (verbal) argumentation rather than lack of (visual) misleading potential.

Following Messaris (1994, 1997) at least two features of pictorial signs are essential in this respect: (a) *Iconicity*, i.e. some degree of resemblance to the real-world object or event signified which means that they are processed using the same perceptual systems that we use to make sense of actual objects and events, “bypassing” the higher-order processing involved in language. (b) *Propositional (syntactic) indeterminacy* in that pictures may well refer to objects and events (by resembling them), but lack the devices needed to make *explicit propositional statements* about them. Thus, a picture of a strawberry on the packaging does not in itself tell us whether it “means” that the product contains strawberries, tastes of strawberries, may be eaten with strawberries, and so on. That judgement is left to the viewer. It has been argued that picture-reading is subject to certain conventions in its own right (e.g. Messaris 1994, Forceville 1996, Scott 1997, Kress/van Leeuwen 2006), but it is also widely recognised that these conventions display a higher degree of flexibility than, say, English orthography or Russian grammar, and more variation across time, media, genres, cultures, etc.

All of this goes to explain why most complaints that do 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 “the real thing” whereas the word *strawberry* alone may well be taken to refer to the ‘taste of strawberry’ only.<sup>12</sup> 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 6.



Figure 6: Instant fruit drink powder with low fruit content 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 people exercising on a cereal product filled with sugar.<sup>13</sup> Though this form of visual rhetoric is subject to repeated criticisms by consumer organizations 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.

## 6 What consumers bring to the scene: Knowledge and visual attention

### 6.1 A need for assessing consumer and expert knowledge?

In 5.2 we showed the relevance of performing selective conceptual analyses of individual product concepts and the knowledge inherent in them. Here 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 judgements.

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 (see Example 7 in Figure 5 above). 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*<sup>14</sup> 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, crystallization modifier, etc.), nutrition value and health benefits (related to caries, diabetes, obesity, etc.), intensity of taste, etc. Only fragments of this specialised knowledge is available to ordinary consumers, and even smaller fragments can realistically be allowed to reach the “tip of the iceberg” of the individual package (cf. 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, see 5.3), is a necessary precondition for predicting possible pitfalls in consumers’ understanding of the claim and preventing them as good 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.

The other key variable in predicting such undue inferences is the consumer’s expected knowledge (see also 5.3). However, there are practical limits to the depth and degree of individualisation feasible when it comes to assessing the knowledge of lay individuals, 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.

### 6.2 The x-factor of visual attention

Consumers need to see and decode a labelling element visually before it can affect them semantically, and 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 cases, the majority of them concern the “trivial” issue of poor readability due to small types, 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.<sup>15</sup> Still, the final judgement relies on individualised case-by-



case judgements 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 supplementing each other: stimulus-driven (bottom-up) and goal-driven (top-down) attention (cf. Chun/Wolfe 2001). Relating these to the purchase situation, it 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 smooth (cf. Wolfe 1999). When a salient labelling element gets attention, the consumer shifts to goal-driven attention in order to fully interpret the stimuli (cf. 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 greatest effect on visual search through a combination of features (cf. Theeuwes et al. 1998) so that the stimulus is able to attract visual attention immediately no matter what.

On 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 come from northern polar waters, regardless that Malaysia is specified as the country of origin on the backside 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 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.

## 7 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. Continued research should also include 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, for matters of space 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 over 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, on 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.

Still, to proceed along any of these paths researchers need an explicit and coherent meta-language in which the issues can be identified and analyzed. 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 dispensed with 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 article, we hope to have laid down the first stepstones for continued progress in these directions. •

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### Notes

- <sup>1</sup> This research was funded by the Programme Commission on Food, Nutrition, and Welfare under the Danish Strategic Research Council, grant No 09-061379/DSF.
- <sup>2</sup> Case No: 2006-Ø2-274-01918.
- <sup>3</sup> 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).
- <sup>4</sup> "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.
- <sup>5</sup> EU Directives 2001/112/EC and 2000/36/EC.
- <sup>6</sup> While being in line with cognitively founded approaches to lexical semantics which see language as operating upon more generalised mechanisms of human categorization 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 (cf. 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).
- <sup>7</sup> 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).
- <sup>8</sup> 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.
- <sup>9</sup> Case No: 2006-Ø1-274-00382.
- <sup>10</sup> Case No(s): 2005-08-274-00380; 2003-08.722-08684.
- <sup>11</sup> A pilot study focused on specific sensory and nutritional properties of sugar-reduced wine gum is presently in preparation in collaboration with the Toms Group.
- <sup>12</sup> Case No: 2007-Ø3-274-01569 (strawberry); 2002-05-274-00006 (fruits); 2005-04-274-00762 (shrimps).

<sup>13</sup> Case No(s): 2007-S6-274-00648; 2004-10-274-01054.

<sup>14</sup> 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](http://en.wikipedia.org/wiki/Sugar_substitute).

<sup>15</sup> Case No(s): 2006-Ø2-274-02728; 2002-05-274-00006; 2002-20-272-0073.

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Viktor Smith, Associate Professor, PhD  
Centre for Language, Cognition, and Mentality  
Department of International Culture and Communication Studies  
Copenhagen Business School  
vs.ikk@cbs.dk

Co-Authors:

*Jesper Clement*  
Assistant Professor, PhD  
Department of Marketing  
Copenhagen Business School

*Peter Møgelvang-Hansen*  
Full Professor, LL.M.  
Department of Law  
Copenhagen Business School

*Henrik Selsøe Sørensen*  
Associate Professor, MA  
Centre for Language, Cognition, and Mentality  
Department of International Culture and Communication Studies  
Copenhagen Business School