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Food risk communication: empirical studies and practical resources

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Food risk communication: empirical studies and practical resources

Comunicação de Riscos Alimentares: estudos empíricos e recursos práticos

Abstract

In recent years, the health communication context in general and, particularly the domain of food risks and benefits communication has become increasingly more complex and uncertain. The large and diversified amount of information that is now available makes it difficult for consumers to deliberate upon food risks and benefits and, thereby, modify their attitudes and behaviours accordingly. This has strengthened the barriers and constraints to effective communication and consumers' engagement in food related issues and posed new challenges to risk communicators and stakeholders . In order to respond to these challenges, the FoodRisC project framework delineated a set of steps and corresponding procedures, to provide evidence based research that can be used in the development of effective tailored communication strategies. Examples of this evidence based research are provided, including studies on consumers' deliberation on multiple risk-benefit configurations, information seeking and information avoidance, and expressions of coping during food crisis. Implications of these results for reducing the complexity and uncertainty of today's communication context are discussed, including the potential of new data collection channels and consumer engagement tools, such as social media analysis.

Keywords: food risk communication; information seeking; information avoidance; consumer's deliberation; food crisis; social media

1. Risks-benefits configurations and their communication in a complex world

The last decades have seen major developments in risk perception and risk communication research and practice. However, only in the last decades has the food domain been given more attention. This is partly associated with an increased public exposure to major food related events, often perceived as negative by the media, experts, stakeholders and consumers (e.g. Bánáti, 2011), as for example: BSE or “Mad Cow” disease (e.g. Pennings, Wansink & Meulenberg, 2002), E.coli/EHEC outbreaks (e.g. Gaspar et al, 2014), dioxin contamination (e.g. Kennedy, Delaney, Hudson, McGloin & Wall, 2010; Shan et al, 2013), non-natural food manipulation/production (Genetically Modified Organisms – GMOs; e.g. Frewer, Miles & Marsh, 2002). In parallel, new food production technologies communicated as involving benefits, as for example functional foods (see e.g. Verbeke, 2005) and new research fields, such as nutrigenomics (see e.g. Müller & Kersten, 2003), have emerged.

This rise in the variety of subjects has also posed new challenges to risk and benefit communication, as the communication context has increasingly become more complex and uncertain (Miles & Frewer, 2003; Renn, 2008). In fact, communicating is not a simple matter of informing the citizens, experts and/or stakeholders that a food is risky or beneficial. Often, various risks and benefits can be present in multiple configurations. Fish is an example, given that there can be health risks from heavy metals contamination (e.g. lead) and nutritional benefits of Omega 3 and other substances (e.g. Verbeke *et al.*, 2008). Another example is red meat consumption, considered to have both nutritional benefits and risks (see Marcu et al, 2014). These multiple configurations have led to the consumers perception of an information overload, perceived as inconsistent, confusing and hard to comprehend (van Kleef et al., 2006) and sometimes conflicting (Regan et al, 2014). This complex communication context may have lead consumers to become more dependent on authorities and less engaged with the issues and, ironically, more information avoidant (Shepherd & Kay, 2012). Thus, despite that

much research has been done in food risk/benefit perception (see e.g. Ueland et al, 2012) and communication (see e.g. McComas, 2006), this increasingly complex and uncertain communication context along with the perceived information overload, has posed new challenges that have been dealt with insufficiently. In our view, this can be surpassed with cross-national assessments and interventions, and multi-dimensional/multi-method approaches, through a set of integrative and interdisciplinary approaches.

2. The FoodRisC project risks-benefits communication framework

To deal with the complexity referred, Barnett and colleagues (2011) have put forward a conceptual framework implemented in the FoodRisC project (www.foodrisc.org) that aimed at developing more understanding focused on: 1) Evaluating the situation; 2) Understanding the audience; 3) Designing messages; 4) Determining the most effective communication channels; 5) Monitoring communications; 6) Involving the public. This framework identifies a set of steps that should be followed along the communication process (as originally proposed by Renn, 2008). These allow assessing consumer's risk-benefit perceptions and how people acquire and use information, in order to develop targeted strategies for food communication across Europe. During the project implementation period (2010-2013), a multi-method approach was implemented to develop evidence-based communication strategies and tools, which resulted in the main outcome of the FoodRisC project: a toolkit aimed at assisting policy makers, food authorities and other end users, in developing coherent and common approaches in communicating messages to consumers across Europe. This framework and its steps can be seen in the figure below.

[Insert Figure 1 about here]

This framework has the potential to allow developing specific communication strategies adapted to the issue(s), target population(s) and communication context. For this, evidence-based information should be acquired (work packages 1-5) for communication to be

tailored to the identified needs, and a strategy and corresponding tools (WP6) can be developed. To demonstrate the evidence-based approaches needed in food risk-benefit communication, some examples from our research group will be shown next, followed by the presentation of the food risks-benefits communications resource centre, developed by the FoodRisC project.

3. Empirical studies on food risks perception and communication

3.1 Deliberation on food risks and benefits configurations

Under this complex and uncertain communication context, various studies addressed the consequences of the communicated information on perceived information complexity, information sufficiency, information seeking and information related variables (e.g. Griffin, Dunwoody & Neuwirth, 1999; Kuttschreuter et al, 2014; Shepherd & Kay, 2012) and on psychosocial variables, as attitudes for example (e.g. Hansen, Holm, Frewer, Robinson & Sandoe, 2003). Still, little is known about how people elaborate and deliberate on the information they receive or, in lay terms, about the questions, doubts and thoughts people have with regard to this. Moreover, there is lack of behavioural indicators/outputs and often single methods/techniques (e.g. survey) are used, mostly based on quantitative analyses.

To overcome these gaps, Rutsaert and colleagues (2014) have proposed a behavioural measure of information deliberation - on red meat risks and benefits – using both quantitative and qualitative measures. In addition, Marcu and colleagues (2014) and Verbeke and colleagues (under review), have assessed the qualitative content of deliberation, focused on a new and emergent social issue in the field of food production and consumption: synthetic meat. These studies were done across three countries – Belgium, Portugal and the United Kingdom, in order to explore how the public makes sense of the unfamiliar and transforms scientific concepts into common-sense, taking as an example a novel technology. This

allowed assessing the content of the cognitive processes involved and the (previously non-existent) attitude formation towards a new attitudinal target.

The procedure included a video presentation describing synthetic meat production both to individual participants in a novel online deliberation platform – VIZZATA™ (www.vizzata.com) – created in the FoodRisC project, and in a group setting, through eighteen focus groups. Their questions, comments and other behavioural indicators (e.g. information seeking) were collected as indicators of deliberation and analysed based on Social Representations Theory (SRT; Moscovici, 1984). Specifically, Marcu and colleagues (2014) studied SR formation through “anchoring”, i.e. the process through which people attempt at relating new, strange and unfamiliar meanings to an already existent and socially established symbology and meaning (Jovchelovitch, 2001). Results showed various ways of “anchoring”, as for example: 1) using metaphors like ‘Frankenfoods’; and 2) commonplaces like ‘playing God’ or ‘playing with nature’; 3) anchoring on the more familiar subject of GMOs, laboratory cloning and “in vitro” fertilization. Other forms of deliberation included pragmatic reasoning, namely deliberating on the potential applications of synthetic meat and its implications for agriculture, environment and society in general; and weighing up its risks and benefits.

Despite the potential for public involvement in these deliberative activities, this can only be fully achieved if people have information to deliberate upon and are motivated to seek it or receive it. Thus, it is relevant to understand why some people may be motivated for the latter, while others may avoid it. This was studied by our team and is presented next.

3.2 Information seeking and information avoidance

Ideally, individuals would be motivated to know or learn about benefits and risks to their health and use this to maximize positive effects and minimize adverse effects. Still, different individuals may have different levels of engagement with this information,

depending on various psychosocial factors that need to be accounted for in risk communication.

Based on this, Gaspar et al (under review) and Rutsaert et al. (2014), devised empirical studies on risks-benefits information seeking vs. avoidance focused on red meat consumption, using an online deliberation platform VIZZATA™ across three countries: Belgium, Portugal, UK. This allowed presenting the target audience with pieces of information – content testers (CTs) with information on health, nutritional and non-health risks-benefits (e.g. environmental, socioeconomic) – and collecting their questions and comments, and other indicators of information seeking (such as requests of more information on a number of terms in the text, and, time spent on each CT). It also facilitated collecting responses to survey questions presented before and after the CTs (e.g., attitude towards red meat; red meat risks information avoidance; perceived information complexity and information sufficiency; indicators of systematic and heuristic information processing).

Rutsaert et al. (2014) work focused on information seeking and processing. They operationalized deliberation as an individual behavioural metric based on the number of questions asked and comments made to the information presented, the number of terms for which additional information was sought, and the time spent on deliberative activity. Results showed that higher deliberation was associated with lower perceived information complexity, with higher education level and with being a parent.

Differently, Gaspar et al (under review), studied risk information avoidance. Building on cognitive dissonance theory, they explored if individuals avoided red meat risks information, which was not consistent with their current cognitions on red meat, to prevent the psychological discomfort of having contradictory beliefs. As expected, information avoidance was positively related to affective indicators of discontentment with the study experience and with positive attitudes towards red meat, and negatively related to information

seeking and systematic processing indicators. Still, when individuals were exposed to the information they would otherwise avoid, there were similar changes in attitudes and knowledge whether individuals were high or low risk information avoiders.

3.3 Risk communication in times of crises

The studies presented consider the need to motivate people to be “available” to receive information and deliberate on it, so that information can actually have an impact on their attitudes and behaviours. However, availability demands “desirable” conditions, as having the necessary information and the time and cognitive resources to deliberate on it, and such conditions may not always be present. Desirable conditions are more often met during “normal” times than when unexpected events and new and unfamiliar hazards emerge and risk communication becomes more relevant. This demands further understanding of the specificities of consumer’s, experts and stakeholders deliberation and responses, under crisis situations.

As Gaspar and colleagues (2014) and Gaspar, Barnett & Seibt (in press) referred, crisis emerge when there is one or more perceived threatening events that go beyond what is “normal” or expected, demanding non-routine organisational and individual responses. These situations pose new challenges to food risks communication, as they call for timely and effective communications (Rutsaert et al, 2013) under conditions that frequently are not “ideal”. Often the information available is incomplete, implying the communication of different levels and types of uncertainty (Miles & Frewer, 2003) and thus, different deliberative activities. This deliberation occurs both at the individual and social levels (risk agencies, politicians, journalists and others), allowing for the construction of hazard templates or frameworks for making sense of risk information (Barnett & Breakwell, 2003).

In this domain, social media presents itself as a new tool for risk communication. It allows access to people’s reactions to specific communications, their deliberation with regard

to the hazard(s) template and expressions of ways in which they are/will cope with the perceived threat. Moreover, as individuals both influence and are influenced by others on social media channels (Gaspar et al, in press), it also provides access to collective deliberation. A demonstration was provided by Gaspar and colleagues (2014), who performed a quantitative and qualitative analysis of messages produced on twitter, during the 2011 EHEC/E.coli bacteria outbreak in Europe. The initial quantitative analysis of 11411 tweets, showed that the highest number of messages produced co-occurred with risk communications of uncertainty about which was the affected product. The qualitative content of 2099 tweets was further explored, which showed that coping was expressed in a dynamic, flexible and inherently social way. Accordingly, coping expressions changed as the events unfolded. Information seeking and opposition strategies (e.g. verbal aggression towards authorities) for example, were more likely during a period of uncertainty about which products were contaminated, while strategies relying on the product identification (e.g. avoid it) were more common when there was certainty. Moreover, there was a social component to it, given that many expressions implied the use of resources from the social context, such as information seeking or seeking other people's support, for example.

4. Resources for Food Risk and Benefit Communication: the FoodRisC toolkit

Based on evidence and insights from the research presented and other studies performed by FoodRisC, and the constant dialogue established with stakeholders, a web based toolkit was developed: the FoodRisC Resource Centre - <http://resourcecentre.foodrisc.org>. This was designed to facilitate effective and coherent communication on food risks and benefits, assisting communicators in producing responsive, authoritative and meaningful messages to promote consumer understanding. It provides usable information and resources from various sources, such as guidelines, case studies, tools and tips to facilitate decision-making, communication planning and implementation. The resource centre was designed to

be used by various professional communities and stakeholders (e.g., policy makers, food authorities and industry, NGOs), with different degrees of experience and goals. Overall, it has six core sections relevant for the communication process, including practical resources to guide and support concrete strategies for action. The sections are the following:

- **‘Evaluate your situation’** summarises factors identified, by both academics and practitioners, as being crucial to risk and benefit communication decision-making. These include reflecting on the purpose of the communications strategy, the nature and level of risk, level of uncertainty, and the urgency of the situation.
- **‘Understand your audience’** provides guidelines and tips to tailor communications to the target audience’s needs. This can aid communicators in characterizing their audience and identify key influencers, to increase its effectiveness. Moreover, includes an interactive, web-based tool to help deciding about the most appropriate data collection methods depending on available resources and specific research questions.
- **‘Create your message’** provides tips on how to translate science accurately into relatively simple language that risk managers, stakeholders and wider audiences can understand, in order to avoid misinterpretations and promote consumer understanding.
- **‘Media channels’** identifies the strengths and weaknesses of various social media and traditional media communication channels, and offers practical guidance, such as ‘how to get started’, and tips to assist best practice.
- **‘Monitor communications’** presents tips and guidelines on how to monitor online conversations, making it possible to detect upcoming issues at an early stage and to learn more about networks of people involved in discussions and content creation.
- **‘Public involvement’** enables understanding of the thoughts and needs of both consumers and stakeholders through the VIZZATA™ tool, which is essential to maximise the effectiveness of food risk and benefit communication.

5. Final remarks

The multi-method and cross-national researches presented are examples of procedures that can be implemented based on the FoodRisC framework in order to develop evidence based communication tools and strategies. For instance, assessing consumer's deliberation may reveal insights about the future consumer's willingness to accept or reject new food products that emerge (e.g. synthetic/cultured meat; Verbeke et al, 2014) or how individual's and society as whole, can cope with new and emerging food related threats and crisis (Gaspar et al, in press). This can allow for the design of marketing and communication strategies and product development, in a way that takes into consideration consumer's perceptions and attitudes towards the subject, the experts and stakeholders involved and the overall individual and social implications of it. On another side, by studying deliberative processes in general and strategies of formation of social representations ,such as anchoring, may allow to inhibit negative associations on aspects unrelated with the subject. As Marcu and colleagues (2014; p.14) suggested: "encouraging and eliciting questions during the process of sense-making, and thus the seeking of the new and unfamiliar, might stimulate the public to embrace a more critical (or reflective) use of anchors and to understand the new objects of knowledge in their own terms. There may thus be particular value within the public communication of science and technology of encouraging question asking as a way of cultivating a climate of open and active thinking." This should however be accompanied by strategies that can motivate people to receive and/or seek information that they can deliberate upon. This can promote more engaged and participatory citizens, prior to and during the communication process. Accordingly, Rutsaert et al. (2014) suggest that food communicators should tailor their messages to reach groups of consumers who are less able or willing to deal with the complex aspects of food-related risks and benefits. Gaspar et al. (under review)

advice that food communicators should ensure that the consumers who avoid knowing about risk are motivated to “listen” to their messages.

Social media has recently risen as a promising channel for psychosocial monitoring aimed at collecting data on individual and collective deliberative activities (Gaspar et al, in press). Along with other data collection methods and agent based modelling (see Gaspar et al, in press), it can allow the development of early crisis detection tools and the design of pre-emptive risk communication strategies, adapted to the hazard template(s) and taking into consideration individual’s perceptions and ways of coping.

The inclusion of these different facets of the communication process within a framework for food risk and benefit communications should promote a more coherent, integrated and effective strategy. To accomplish this, the development of useful and shared resources, such as the FoodRisC resource centre, that a range of communicators and stakeholders can use to guide and support their activities, constitutes a step-forward towards improving communication practice and research. Moreover, the continued effort to integrate evidence-based knowledge into these common practical tools gives it the potential to have a wide and ongoing positive impact in reducing the complexity and uncertainty of today’s communication context.

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