

Article

health:

The producing expert consumer: Co-constructing, resisting and accepting health-related claims on social media in response to an infotainment show about food

Health
1–19

© The Author(s) 2018

Reprints and permissions:

sagepub.co.uk/journalsPermissions.nav

DOI: 10.1177/1363459318763935

journals.sagepub.com/home/hea



Jana Declercq

Ghent University, Belgium

Stéphan Tulkens

University of Antwerp, Belgium

Sarah Van Leuven

Ghent University, Belgium

Abstract

This article examines the Twitter and Facebook uptake of health messages from an infotainment TV show on food, as broadcasted on Belgium's Dutch-language public broadcaster. The interest in and amount of health-related media coverage is rising, and this media coverage is an important source of information for laypeople, and impacts their health behaviours and therapy compliance. However, the role of the audience has also changed; consumers of media content increasingly are producers, and, in the case of health, expert consumers. To explore how current audiences react to health claims, we have conducted a quantitative and qualitative content analysis of Twitter and Facebook reactions to an infotainment show about food and nutrition. We examine (1) to which elements in the show the audience reacts, to gain insight in the traction the nutrition-related content generates and (2) whether audience members are accepting or resisting the health information in the show. Our findings show that the information on health and production elicit the most reactions, and that health information incites a lot of refutation, low acceptance and a lot of suggestions on new information or new angles to complement the show's information.

Corresponding author:

Jana Declercq, Department of Linguistics, Ghent University, Tweekerkenstraat 2, Ghent 9000, Belgium.

Email: Jana.declercq@ugent.be

Keywords

audience research, content analysis, infotainment, nutrition, social media

Introduction

Western citizens generally live increasingly longer and healthier lives (Huber et al., 2011), but the public's interest in health (Boyce, 2007), as well as the amount of health-related media coverage (Hallin and Briggs, 2016; Declercq, forthcoming), is rising. Media play an important role in this process; they represent issues and trends that are gaining ground in society, as well as instigate and co-construct (the interest in) such issues and trends (Weishaar et al., 2016). Journalism thus is performative in nature (Hallin and Briggs, 2016), and news and media shape how 'we see the world, ourselves and others' (Wahl-Jorgensen and Hanitzsch, 2009: 3). This is also true for health-related coverage; research shows the media shapes the audience's views on health and health care (Lipworth et al., 2015; Saini et al., 2017; Van Slooten et al., 2013) and are an important site for learning about health (Lariscy et al., 2010). Several studies show that health-related media content not only influences perceptions of and the audience's views on health, but also affects therapy compliance and incites behaviour changes (Grilli et al., 2002; Matthews et al., 2016). Despite the rise of the Internet as an important source of information, the impact of traditional media is not to be underestimated: health information stemming from traditional news outlets is still considered more trustworthy by consumers (Van Slooten et al., 2013).

Health-related media content can have this powerful impact on audiences because of the media's performative role, and because media do more than just represent information provided by health professionals. Rather, each health story 'models knowledge as much as health, teaching lessons about what counts as medical facts, who makes them, who can interpret them, [...] what laypersons need to know and what they should do with this material' (Hallin and Briggs, 2016: xiii). This is the result of *biomediatization*: health knowledge production nowadays is a process of coproduction between biomedicine and journalism, in which there is a 'complex exchange and partial hybridization' (Hallin and Briggs, 2016: 11). These institutions are therefore no longer separate domains, but increasingly intertwined. In this coproduction process, the media 'produce hierarchically ordered classes of actors and forms of knowledge' (Hallin and Briggs, 2016: 7); they frame issues and heighten their salience (Brodie et al., 2003; Weishaar et al., 2016).

However, although health journalism has this powerful performative role and impact, the audience can no longer be considered to be just passive receivers of the information that is carefully selected and crafted by the impenetrable mass media (Bruns, 2008; Loosen and Schmidt, 2017; Lüders, 2008). They have become *producers*: (inter)active consumers and producers of personal (online) content (Bruns, 2008). More specifically in relation to health, audience members are becoming *expert consumers* (Hallin and Briggs, 2016). Expert consumers use information provided by the media and by other sources to actively make individual and rational choices about health. This article examines how these changing dynamics of power and knowledge production affect the uptake of health information as presented by the mass media. To do so, we conducted a quantitative and qualitative content analysis of audience reactions (April 2016 to January 2017)

on Twitter and Facebook, in response to claims about food and health in an infotainment show on Belgium's Dutch-language public TV channel. We believe this show provides an interesting case because of its infotainment format, as there is a potential tension between the media's entertaining role and the dissemination health information (Seale, 2002). First, we will discuss the theoretical background of this article and introduce the concepts of the producer, the expert consumer and infotainment, and how they are relevant in relation to health and nutritional news. We will then discuss our methodology, as well as a few key insights from another part of this study, which was ethnographic in nature, before going on to the analysis and discussion. We believe the ethnographic insights can contextualize and deepen the results and insights in the discussion.

Producers and expert consumers

As discussed in the Introduction, audiences are interested in and influenced by health-related media content, but are no longer passive receivers of such information. The rise of new communication technologies, such as blogs, wikis, social media and instant messaging, has changed the role of mass media as the sole providers of information, as there no longer is a distinction 'between mass communication and interpersonal communication, and therefore between mass media and interpersonal media' (Lüders, 2008: 683). Loosen and Schmidt (2017) similarly state that new information technologies have blurred 'the boundaries between news producers and consumers as well as between production and consumption' (p. 3). Consumers nowadays also produce content on online platforms, and actively engage with any media content, both user generated or mass media generated, by taking part in interpersonal follow-up communication within smaller networks (Loosen and Schmidt, 2017), which Bruns (2008) labels as produsage. A similar concept is Schmidt's (2014) *personal public*, which refers to a new kind of publicness that has emerged; producers produce content they deem relevant on a personal level (rather than on a societal level), which they communicate with audiences with which they have explicit ties (rather than with anonymous mass audiences), and in a conversational way (rather than one-way publishing). In doing so, they manage identities, relationships and information, in complex interplays with one another (Schmidt, 2014).

According to critical scholars, the omnipresence of new communication technologies and its new form of publicness have led to 'the cult of the amateur' (Keen, 2008), in which 'trivial babble dominates over thoughtful knowledge of the experts' (Schmidt, 2014: 12). This potentially results in a critical stance towards experts and mass media organizations and other institutions such as the government. More optimistically, Schmidt (2014) sees it as a potential site for inclusion and participation. Bruns (2008) also sees these opportunities when exploring the consequence of produsage for democracy, pointing to the fluid heterarchy (as opposed to traditional, strictly hierarchical organizations). However, fluid heterarchies have also changed knowledge production; classic experts are not automatically accepted as experts in digital produsage spheres, but need to re-earn and re-establish their expert position (Bruns, 2008). Consequently, 'we are moving from the established, taxonomic, expert-driven paradigm into a new and uncharted territory' (Bruns, 2008: 222); as experts are no longer at the heart of knowledge production, this may change knowledge and production processes in ways we cannot yet fully anticipate, and which we need to explore and research.

This concept of the produser is connected with a concept that is more specific for the consumption of health-related media content: the expert patient (Dumit, 2012), or the expert consumer (Hallin and Briggs, 2016). An expert consumer uses information provided by mass media and other sources to actively make individual and rational choices about health, apart from the supervision of their physicians. She or he is the expert about their own situation, personally constructs what is relevant and adequate knowledge, and becomes empowered because of ‘the genuine potential for making choices’ (Andreassen and Trondsen, 2010: 281), that is, to make informed, personal choices. In doing so, she or he tries to not only minimize the risk of illness, but also maximize well-being and freedom. However, the concept of the expert consumer and the idea of empowerment is also contested, for not taking into account factors such as health literacy and social conditions and determinants, which might impede making informed, empowering decisions (Greenhalgh, 2009).

In any case, similar to the produser who blurs the boundaries between mass media as an omniscient, authoritative producer of information, and the audience as a passive consumer, the expert consumer blurs the boundaries between authoritative professional biomedical experts and laypeople, between who develops and who receives knowledge. Both concepts also raise the question of new forms of expertise and to what extent these forms really change power dynamics (between mass media and audience or between health professionals and patients), and what their impact is on knowledge production and reception.

The concept of the expert consumer is also highly relevant for our analysis with respect to nutrition. Food is increasingly promoted as a means to stay healthy, in which people have a high level of autonomy in making their own choices. In Huovila and Saikkonen’s (2016) analysis of Finnish dietetic blogs, readers are encouraged to prioritize an individualistic understanding of food, bodies and knowledge, over the traditional population-based recommendations concerning nutrition. In the traditional media too, it is a salient view on health; in British and German newspaper coverage on obesity, self-control and individual responsibility are the most frequently used frames (Atanasova and Koteyko, 2017). Consequently, healthy eating is nowadays constructed as a personal, moral responsibility (Henderson et al., 2009; Huovila and Saikkonen, 2016; Sukhan, 2012). This is also reflected in and exemplified by the increased interest in functional foods (Niva, 2007), and the increase of diet shows, cooking shows and books, and non-health professionals campaigning for healthier diets, like Jamie Oliver (Gray and Leahy, 2013).

However, food choices are more complex than nutritional and health considerations, for two reasons. First, the great interest in food has led to an ever-growing supply of information, which is increasingly competing and contradictory (Aschemann-Witzel and Grunert, 2015; Huovila and Saikkonen, 2016). Second, although health might be an important, even moral, imperative, food choices are also surrounded by many other incentives, like taste, peer pressure, ethical considerations (Deliens et al., 2014), financial, religious, ethical and emotional ones, often in complex interplay with one another. Mass media take up different discourses on food and, in doing so, prioritize different incentives; in *MasterChef Australia* (which has also been broadcasted in Belgium, as well as produced in a local Flemish version), for instance, the dominance of considerations about taste makes nutritional discourses appear irrelevant, implicitly sending confusing and contradictory messages to the audience about which foodstuffs to limit in a normal diet (Phillipov, 2013). De Backer and Hudders (2016) similarly argue that food

shows on TV, Belgian and other ones, are nowadays about entertaining and for instance emphasize the pleasurable, fun aspect of cooking, or focus on exploring uncommon ingredients or different food cultures. In Sukhan's (2012) analysis of Canadian weight-loss shows (which are similar in format to several shows about weight and diet that were broadcasted or produced in Belgium, like *Je bent wat je eet* ('you are what you eat')), on the other hand, food is reduced to 'an instrumental necessity that is robbed of both pleasure and positive identification of the self' (p. 199). In sum, nowadays, 'food choice has become an ongoing negotiation process in which consumers are faced with diverse intentions and expectations' (Niva, 2007: 385). These intentions and expectations can be social, cultural, ethical, religious, and financial and health related, and, as a result of being so diverse, are likely to contradict each other at some point. Consequently, individuals will have to constantly negotiate with themselves, and with their environments, which ones to prioritize. Moreover, media take part and complicate this process as they produce different, contradictory messages on how to prioritize. This complexity of food choices thus is challenging for the audience, who has these many considerations to include when constructing what is adequate and relevant nutritional knowledge. Moreover, there is a possible tension between this complexity and the infotainment format, which we will further explore next.

Infotainment

Infotainment has incited long-standing debates among scholars, as this increasingly popular format in the commercialized media ecology is often seen as a form of tabloidization (the trend of increasingly bringing media content and news in popular, entertaining and supposedly more artificial formats). Criticasters are concerned that tabloidization leads to a loss of journalism's watchdog function, and the loss of the audience's access to important sociopolitical information (Hauttekeete, 2005). Infotainment genres have also been assumed to generate a different and worse understanding of media content in the audience, mainly in relation to comprehension and the capacity to retain and remember information later (Nguyen, 2012; Prior, 2003). Tabloidization practices, especially in political media content on television, have also been associated with media malaise, eroding trust in institutions, and political cynicism (Norris, 2000).

More optimistic scholars argue that dichotomizing entertainment and information and content and style is a simplistic rendition of the media landscape (Hartley, 1996; Hauttekeete, 2005), and that there is no uniform strong and linear trend towards tabloidization (Hauttekeete, 2005). Recent research has also shown that a different understanding of infotainment content is an effect on attitudinal changes, rather than factual knowledge (Kim and Vishak, 2008), that infotainment aspects can even have positive effects on recall, and do not significantly affect comprehension (Mujica and Bachmann, 2016).

In the case of health journalism, both scholars and practitioners have different takes on to what extent media and media content is or should be entertaining, and whether this is positive or negative. Entertainment is often listed as a news value (O'Neill and Harcup, 2009), but health journalists have different takes on what the main aim of health journalism ought to be; some see it as a form of health promotion and public health, while others see entertainment as its primary function, not the potential public health effects (Hallin and Briggs, 2016).

Among health professionals, a similar debate on the role of media in health promotion, and on how to reconcile media logics with health promotion logics, especially in the case of entertaining genres, has been going on. For a long time, health professionals considered health and entertainment as irreconcilable opposites, and health-related media coverage was believed to be health damaging (Seale, 2002). However, health promoters and educators have reached out to the media to reach a wider audience, and have shown to be willing to compromise and accept ‘the pleasure principle that drives most mass media organisations’ relationship with their audiences’ (Seale, 2002: 6), and adapt and incorporate such and other media logics. At the same time, media have reached out to biomedical professionals to produce health-related content (Hallin and Briggs, 2016), incorporating biomedical logics and increasingly coproducing health-related content in close collaboration with biomedical professionals.

Research questions and methodology

The two tensions identified in the literature review, that is (1) the audience as producing expert consumers and (2) the tension between information and entertainment, are put forward for further investigation in this article. We aim to answer two research questions:

RQ1: Is the audience inclined more to react to information or entertainment aspects of the show?

RQ2: Is the audience inclined more to accept or resist the health information in the show?

To answer these research questions, we set up a quantitative and qualitative content analysis of audience reactions to claims about food and nutrition as presented in the infotainment show, by looking at Twitter and Facebook reactions (N=2917). We conceptualize the audience in this analysis as the social media users who respond to the show via Twitter or Facebook, because of the editor’s choice to use these platforms, and in light of our focus on the active producing audience or expert consumer.

Data collection and coding

We collected tweets associated with the hashtag of the show as broadcasted in 2016 through an exhaustive search. Because the free Twitter application programming interface (API) only returns a selection of tweets corresponding to a search term, we collected tweets by searching for the hashtag on the Twitter website, and then programmatically extracting tweets from the search results. A comparison with tweets returned through API calls revealed that our method retrieves a proper superset of the tweets found through the API, that is, all tweets the API returned were also in our data set (which were 1192 tweets). After data collection, we manually removed unrelated tweets that did not concern the TV show, for example, Twitter bots, from the data set, which resulted in a final set of 1181 tweets.

Facebook data were collected using the Pattern Python package (Smedt and Daelemans, 2012). We opted to collect reactions to posts made by the official Facebook page of the infotainment show in 2016, selecting all posts that related to the eight episodes of this season. We manually looked up the ID of the page of the show, and scraped all posts from the page. Following this, we extracted all comments associated with each post and all replies to comments. This resulted in a set of 4787 comments. We manually verified that the extracted set of posts and comments were exhaustive.

One of the posts on the Facebook channel consisted of 2638 comments. Of this post, only the first 160 comments were coded (to match the number of reactions of the second biggest post) to avoid that one post would distort the findings for the total sample. In addition, some comments to other posts were excluded from the analysis when foreign languages were used, or when the post featured only emojis (and no text) of which the meaning was unclear (e.g. hearts, thumbs-up and smiley faces were included; other ones with less canonical meanings were excluded). Other comments were deleted because they merely tagged another person and did not contain a reaction to the show. These alterations resulted in an analysed data set of 1736 Facebook reactions. Our final combined data set consisted of 2917 items, produced by 1054 unique Facebook users and 693 unique Twitter users, resulting in 1747 unique users in total.

The codebook for the content analysis was partly predefined but further inductively developed in a first wave of qualitative content analysis of the first 250 tweets in the data set. New categories were added in a collaborative process of conventional coding (Hsieh and Shannon, 2005). In a second wave, the finalized codebook was applied to the complete data set (N=2917), including the first 250 tweets, resulting in a descriptive overview of the frequency of use of the different categories and variables in the codebook. Ambiguous cases were marked by coder 1 (the first author) and co-coded by coder 2 (the third author). For those cases, in a next step, the two coders decided together which category was most appropriate to ensure the reliability and validity of the coding procedure. Statistical analysis was carried out using SPSS 22. Finally, the third wave of the analysis was again qualitative, but this time summative coding, which allows for interpretation of the context associated with the use of these categories and variables, which we illustrate in the article with concrete examples of tweets and Facebook posts (Hsieh and Shannon, 2005).

The codebook consisted of three main categories: actors, topic of reaction and evaluation of the information. The actor subcategories were based on a validated codebook from previous studies on health journalism (Deprez and Van Leuven, 2017), and included media, ordinary citizens, government organizations, academic experts and so on.

The topic categories coded the topic of the reaction (RQ1). The first three categories (food/nutrition health, food/production and food/marketing) were predefined based on the ethnographic fieldwork, as they mirror the categorization used by the editors to talk about the different kinds of items they were working on. As we expected reactions on format and entertaining elements, we included these as categories, and an 'other' category. During the conventional coding process, we added categories for (self-)promotion (when someone advertised the show and/or told the audience to watch it), the interactive responses to questions to the audience, general evaluative comments on the show, ethics and comments on recipes.

With the evaluation categories, we aimed to capture the users' attitude towards the information as presented in the TV show (RQ2). We predefined codes for refutation, doubt, acceptance, and as a result of the conventional coding process added suggestions, general resistance, reported intentions to change behaviour and taste. General resistance concerned reactions of users who did not refute a claim, but generally resisted looking at a claim from the particular angle the editors used.

Ethnographic data collection

As mentioned above, we want to add to the understanding of the results by contextualizing them with a few insights from another part of this study, which was linguistic ethnographic in nature. Linguistic ethnography is a specific form of ethnography based on the assumption that language and meaning on one hand and the social world on the other hand are mutually shaping (Creese, 2008; Rampton, 2007), that is, that language and a community's social and cultural practices both shape and result from each other. Consequently, linguistic ethnographers study language to understand the context, and vice versa (Jacobs and Slembrouck, 2010; Rampton, 2007). The fieldwork took place on 31 non-consecutive observation days (March to May 2016). The data set comprises audio-recorded interviews with editors, presenters, the editor-in-chief, the on-screen experts invited by the editors and camera crew; audio-recorded meetings; audio recordings of shooting days; field notes; the broadcasts and a collection of the press materials on the show. The editor-in-chief, who acted as a gatekeeper, signed an informed consent. Because of privacy concerns, the names of the informants as well as the name of the show are fictionalized.

Ethnographic context

The show was produced by Belgium's Dutch-language department of the public TV broadcaster, more specifically by the current affairs department. The department produces multiple daily news broadcasts, several debate and information shows and documentaries. Being a state-funded public broadcasting channel, the department has the explicit mission to provide all Dutch-speaking Belgians, regardless of age, ethnicity and other demographic factors, with high-quality programs that contain good information and stimulate public debate. In the same vein, the aim of the infotainment show was to reach a broad audience and properly inform them, in an entertaining way, about all aspects of food: health, nutrition, diet, food production and marketing, as well as production and marketing. The show's season under scrutiny consisted of eight 45-minute episodes that were programmed in prime time; consequently clear, accessible and straightforward information was key. This became increasingly clear during the ethnography, as the editors construct their audience as (potential) expert consumers, in the web of ever-increasing supply of information on food and health, which is increasingly competing. In the interviews, the editors say that they aim to be a trustworthy source of correct and practical information, to support their audience in making adequate food choices. They are aware of the complexity of these choices. Consider the following extract from an interview with a newspaper, which was part of

a larger marketing campaign to promote the show, as it was the first season of the show. In this extract, one of the presenters formulated the unique selling proposition of the show as follows:

We are not conscious enough of what we eat, as a result of the abundance of food. We used to eat to stay alive, now we eat just to fill us up, out of boredom, or because it's comforting.

The presenter constructs food and eating as belonging to different aspects of life: as a basic physical need, as social and psychological processes and experiences and as a pastime. He consequently claims that we have neglected the most important aspect of food, the basic physical need to stay alive. The editors then argue that, to stay alive and healthy, we need to understand what food does to our bodies, and therefore consider food from a biomedical perspective. This way, we can become expert patients (Dumit, 2012), critical consumers who are actively learning and adapting to nutritional advice and knowledge, and food is constructed as a moral responsibility to stay healthy.

The editors are also aware of the complexity of nutritional information in itself and fear that, because of this double complexity, the focus on nutrition and health could easily become boring, overly didactic or preachy. They aim to avoid this in two ways. They acknowledge that the producing expert consumer wants, in the words of Domingo et al. (2008), a conversation with, rather than a lecture from the media. Therefore, they address the audience as an active participant in the show, actively monitoring Facebook and Twitter and using them to interact with the audience, for example in the form of quiz questions.

Second, they opt for an infotainment format. This, for example, involves a weekly item with celebrities talking about their food choices and behaviour, or playful interactions between the two presenters. The editors believe an entertaining style was key to reaching a big audience, as it keeps the messages accessible. Moreover, it avoids sounding preachy, and having the producing consumer expert resisting the information, or not watching the show at all. Consequently, although the editors construct the main aim of the programme as informing the audience about nutrition and health (and food marketing and production), they often do mention or foreground social and psychological, or more entertaining lifestyle aspects, of eating. For example, the presenters regularly discuss their guilty pleasures or weaknesses in terms of eating habits on-screen. In the final episode, in which all items are centred around barbecuing, they filmed and used shots of the crew drinking wine and going for seconds. The editors aimed to highlight that food is not all about making healthy choices, but also about enjoying the food and the company of the people you eat with.

Results

First, we will discuss the results of the actor analysis, to contextualize the data. Approximately 87.9 per cent of all Facebook comments and tweets are posted by audience members who could be identified as ordinary citizens, with no institutional link. The second most present actors are media actors (6.0% in total, 6.9% on Twitter, 5.4%

on Facebook). This includes mostly self-promotional material: all Facebook posts and tweets posted under the official account of the show and posts published by media professionals linked with the broadcaster. Some other members of the show's audience posting comments and tweets worth mentioning were identified as industry actors and pseudo-experts (both 1.6% presence in the total sample).

Topics of reactions (RQ1)

To answer RQ1, whether audience members react more to information or entertainment aspects of the show, we take a look at Table 1, giving an overview of to which topics the posts and comments are linked.

Table 1. Topic of reaction versus platform (N=2917).

| Link with programme | Twitter (n=1181) | Facebook (n=1736) | Total (N=2917) |
|-----------------------------------|------------------|-------------------|----------------|
| Information about food/health | 258 (21.8%) | 292 (16.8%) | 550 (18.9%) |
| Information about food/production | 193 (16.3%) | 436 (25.1%) | 629 (21.6%) |
| Information about food/marketing | 43 (3.6%) | 44 (2.5%) | 87 (3.0%) |
| Response to (quiz) questions | 106 (9.0%) | 153 (8.8%) | 259 (8.9%) |
| Formal aspects of the show | 59 (5.0%) | 26 (1.5%) | 85 (2.9%) |
| Entertainment | 179 (15.2%) | 70 (4.0%) | 249 (8.5%) |
| (Self)promotion | 103 (8.6%) | 62 (3.6%) | 165 (5.7%) |
| Evaluation of the show as a whole | 106 (9.0%) | 120 (6.9%) | 226 (7.7%) |
| Ethics | 31 (2.6%) | 163 (9.4%) | 194 (6.7%) |
| Recipe | 4 (0.3%) | 85 (4.9%) | 89 (3.1%) |
| Other link with programme | 132 (11.2%) | 316 (18.2%) | 448 (15.4%) |

*The sum of all categories can be more than one hundred because some posts contained more than one link with the programme.

The most discussed topics are the factual information as put forward by the editors: most comments and tweets relate to information about health (18.9%), food production (21.6%) and marketing (3.0%). If we look into the division of reactions to the information categories, we see that these correspond with the division of the information as found in the TV show for Twitter, and that Facebook reactions correspond with the topic of the Facebook posts. Of all items in the 8 episodes, 11 related to health (28.2%), 14 to food production (35.9%), and 6 to marketing (15.4%). A similar distribution is visible in the tweets; tweets mainly relate to information about health and nutrition (21.8%) and food production (16.3%), and only to a lesser extent to marketing (3.6%). In the case of Facebook, although most of the 83 posts on the official account of the show were self-promotional or related to quiz questions (45, or 54.2%), we find a slightly different but similar tendency. Twelve posts (14.5%) presented food information related to health, 12 posts (14.5%) presented food information related to food production and 3 posts (3.6%) presented food

information related to marketing. This is reflected in the distribution of reactions ($N = 1653$), which are mainly focused on food information in the show about production (25.7%) and health (16.9%), and to a lesser extent marketing (2.5%). Nonetheless, when taking into account that the exceptionally big Facebook post, where we only coded the first 160 reactions, discussed food information about production (more specifically about colour additives), we expect that the number of Facebook audience reactions in terms of production are in fact higher. Consequently, Facebook users react to information on production relatively more than on Twitter, and relatively more than put forward by the show's editors.

With respect to entertainment aspects of the show, formal aspects elicited few reactions: only 2.9 per cent of comments discussed issues such as directing style, music and language; 8.7 per cent were comments discussing the celebrity presenters, the celebrities featured in the show and purely entertaining elements (e.g. footage of peeling an apple with a drill). Both these commenting practices were found relatively more on Twitter. However, for both platforms, these results suggest that the entertaining style does not greatly distract the audience from the actual information on food in the show, and that about half of the reactions are directly prompted by the actual, factual information in the show. Moreover, the reactions to the different informational subcategories (nutrition/health, food production and marketing) are distributed similarly to the show's items and Facebook posts.

Furthermore, during the first coding round, we observed that many users, especially on Facebook (9.4%) (vs. 2.6% on Twitter), started discussions on ethical aspects of eating, mainly on the environmental aspects of eating and not eating meat. However, the show hardly ever discussed these ethical aspects; just once, a vegan celebrity briefly touched upon the ethical motivations of his choice. It thus is remarkable that, especially on Facebook, ethics discussions account for 9.4 per cent of reactions, while these were not prompted or elicited by the show itself. It confirms that food choices are complex, and that people actively bring other aspects into the picture than the ones the editors highlighted.

Evaluation of information (RQ2)

To answer RQ2, Table 2 gives an overview of the users' evaluations of the claims on health, food production and marketing (for this analysis, we only included the 1229 comments and tweets in the informational categories). Approximately 34.3 per cent of all reactions accept the information presented in the show, about equally divided between Twitter and Facebook; 10.9 per cent of the users report they will change their lifestyle, confirming or following what they learned from the show. Yet, in most cases, audience members present themselves as doubting (4.7%), refuting (14.3%) or resisting (5.9%) the presented food information. Twitter reactions contain more refutations (17.4% vs. 12.3%), and express more doubt (4.9% vs. 4.6%) and resistance (9.4% vs. 3.5%) compared with Facebook reactions. In a quarter (25.3%) of all reactions, users make further suggestions adding to the information presented in the show; this is especially the case for Facebook (31.3%, vs. only 16.2% on Twitter).

Table 2. Evaluation of information versus platform (n = 1229).

| Evaluation | Twitter (n = 488) | Facebook (n = 741) | Total (n = 1229) |
|-------------------------------|-------------------|--------------------|------------------|
| Refutation | 85 (17.4%) | 91 (12.3%) | 176 (14.3%) |
| Doubt | 24 (4.9%) | 34 (4.6%) | 58 (4.7%) |
| Acceptance | 172 (35.2%) | 249 (33.6%) | 421 (34.3%) |
| Suggestion | 79 (16.2%) | 232 (31.3%) | 311 (25.3%) |
| Resistance | 46 (9.4%) | 26 (3.5%) | 72 (5.9%) |
| Intention to change behaviour | 58 (11.9%) | 76 (10.3%) | 134 (10.9%) |
| Taste | 24 (4.9%) | 39 (5.3%) | 63 (5.1%) |

Interestingly, some reactions take a different perspective by focusing on the importance of taste (5.1%). For instance, an item on the use of carmine, a pigment extracted from a scale insect, elicited a lot of disgusted reactions, including many reactions of users stating they would no longer consume products containing carmine. However, some users expressed taste took precedence over considerations concerning food production or health, stating for example that they would keep consuming certain products because they are tasty:

(1) Don't give a fuck, it tastes good so I'll keep drinking it (Facebook)

In other cases, some users suggested the tastiness of healthy products as a secondary incentive to consume them:

(2) Light and tasty (Facebook reaction to a recipe of a healthy, low-calorie Caesar salad)

Again, this points to the fact that food choices are complex, and that the audience often considers and takes preference of other aspects, like taste, than the one the editors use as the dominant frame in their content.

To gain a better understanding of the dynamics of acceptance, refutation and other evaluations, we look at these evaluations in relation to the information type in Table 3 (considering the low number of cases in the category of information about marketing (N = 78), the numbers for this category need to be interpreted with prudence). For production, acceptance is high (43.4%) and refutation rather low (6.6%). For health, we see a different trend: acceptance is notably lower (22.5%) and refutation is high (23.0%), even slightly higher than acceptance. In addition, audience members more often suggest different angles when discussing information about health (31.7%), and as such more actively participate in constructing and debating health knowledge than knowledge on production (19.5%) and marketing (17.9%). This suggests that most audience members see themselves as expert consumers, who do not just accept the health information as presented to them, but actively add to the existing information and debates.

Table 3. Evaluation of information versus topic of reaction.

| Evaluation | Information about health (n = 521) | Information about food production (n = 595) | Information about marketing (n = 78) |
|-------------------------------|------------------------------------|---|--------------------------------------|
| Refutation | 120 (23.0%) | 39 (6.6%) | 17 (21.8%) |
| Doubt | 25 (4.8%) | 27 (4.5%) | 4 (5.1%) |
| Acceptance | 117 (22.5%) | 258 (43.4%) | 35 (44.9%) |
| Suggestion | 165 (31.7%) | 116 (19.5%) | 14 (17.9%) |
| Resistance | 47 (9.0%) | 20 (3.4%) | 2 (2.6%) |
| Intention to change behaviour | 24 (4.6%) | 103 (17.3%) | 1 (1.3%) |
| Taste | 23 (4.4%) | 32 (5.4%) | 5 (6.4%) |

*The total number of reactions linking with the show in terms of information about health/food production/marketing is lower than in Table 1 because not all reactions contain an evaluation of the presented information.

In the following section, we examine some relevant categories and use examples to gain a deeper understanding of the different reactions in these categories. The refutations both concerned the information itself (4) and the science behind it (5) and how facts were presented by the editors (6):

(4) Another myth confirmed in #hashtagshow: that a daily glass of red wine supposedly is healthy. (Twitter)

(5) Lots of talking about calories again. That's getting #oldschool when talking about food and more importantly about remaining slim. What about #glycaemicindex anyone? (Twitter)

(6) Who lets his teeth soak in coca cola for a month anyways?! #bullshit #hashtagshow #hashtagbroadcaster (Twitter)

To prove that the acidity of fizzy drinks is harmful for our teeth, the editors set up an experiment in which they soaked teeth, eggs (egg shells have a calcified structure, similar to teeth) and a rusty screw in several fluids, like orange juice and coca cola, for a month. After this month, the egg shells had disappeared and the teeth were blackened, which clearly conveyed that acid drinks are harmful for teeth. However, the audience member in (6) found the experiment too far-stretched.

The suggestions category contains explicit requests towards the editors (9); reactions in which audience members state that the information was incomplete and add new aspects (7-8); reactions which, without suggesting the information was incomplete, highlight another aspect of the topic discussed; and all further discussions among users following these suggestions (8):

(7) Yes ... if they withhold the truth about the sickening wheat in bread well then it's not worth watching this show! Not to mention the glycaemic index of bread being higher than that of refined sugar like that (Facebook)

(8) User 1: And ... it's a pity you haven't mentioned puffed rice cakes are unhealthy. They contain rat poison! A whole grain sandwich is way healthier.

User 2: puffed rice cakes contain arsenic, and there's also arsenic in rat poison. But there's NO rat poison in puffed rice cakes. Don't be fooled! (Facebook)

Finally, these suggestions sometimes reframe the items of the show, highlighting other aspects of food and touching upon the complexity of food choices:

(9) Please also pay attention to the unhealthy aspect of not eating ENOUGH. 2/6 Eating Disorder day. #hashtagshow (Twitter)

Another piece of evidence of audience actively taking up the role of the expert consumer is the reactions to report intentions to change behaviour (10.9%). Interestingly, information about food production (17.4%) most often provokes such reactions, while information about health and nutrition elicits fewer responses (4.6%). Further analysis of the data shows that most (95 of 103, or 92.2%) of these behaviour change reactions are elicited by the 'the way back' items about food production, which shows the trajectory of a food-stuff from the plate to the unprocessed product, played backwards. In four of the eight episodes, these items contained graphic images of animals being butchered. Another episode graphically showed how a chicken laid an egg. These images often elicited reactions of disgust, especially in the case of young or photogenic animals, like rabbits, as well as many audience members expressing they never ate these animals, intended to no longer do so, or encouraged others to no longer do so:

(10) I already didn't like it, but now never again for sure! (Facebook)

(11) Because of #hashtagshow I am seriously considering becoming a vegetarian @publicbroadcaster #fromhamburgertolamb #seriouslydisgusting (Twitter)

The audience members thus seemingly experience the information about food production as more shocking, and tend to construct its impact as bigger. Although these numbers do not provide us with any information on actual behaviour, they again illustrate the complexity of food choices, and, in this case, point to a dominance of emotional and psychological aspects of eating, over nutritional considerations.

Finally, the reactions expressing resistance (5.9%) indicate the audience members' critical attitude towards nutritional information, as resistance is higher for nutrition/health (9%) than for food production (3.4%) and marketing (2.6%). This category contains reactions which, explicitly or through more implicit means like irony, state the information provided by the show unnecessarily complicates food choices, that resist the health frame in case of nutritional and health information, or that express a concern that everything we eat nowadays is somehow problematic.

(12) No I didn't know. Is there something you still can eat without it containing all kinds of bad stuff? (Facebook)

(13) This show actually proves we eat crap every day. Do we really benefit from knowing that? (Facebook)

(14) What is the goal of #hashtagshow, to keep us all from eating? (Twitter)

These reactions all express a concern with the increasing considerations concerning food choices and the growing body of contradictory information. Example (13) even implies that ignorance might be better than being knowledgeable, implying that information is overwhelming rather than helpful, and does not always lead to more informed and better choices. These reactions thus construct the stream of information as disempowering, rather than empowering, and resist being constructed as expert consumers.

Some resistance reactions are humorous, some audience members proudly posited they were enjoying unhealthy food:

(15) [Watch the show] calmly? With two bags of crisps and a bottle of coke alright! #ifthatainthealthy #hashtagshow #watchit (Twitter)

Although the show aimed to positively influence food choices and health behaviour, these reactions construct watching the show as a leisure activity, meant to relax and have fun, which includes eating snacks. The higher percentage of resistance for health information thus indicates that audience members find that nutritional and health considerations are more restrictive and invasive than food production and marketing considerations.

Discussion and conclusion

In this article, we have conducted a content analysis to examine social media reactions to an infotainment show about food, to investigate the impact of presenting health-related information in an entertaining format (RQ1) and of the trend of the audience being/becoming a producing expert consumer (RQ2). To conclude, we want to highlight three trends in our data that we believe to contribute to a better understanding of the audience uptake of health-related media content.

First, with respect to RQ1, our data contradict journalism literature assuming that uptake and attitudes are negatively affected by infotainment (Nguyen, 2012; Norris, 2000; Prior, 2003). Instead, we found that entertainment and formal aspects are not extensively discussed in the Twitter and Facebook reactions and thus likely do not tremendously distract the audience. About half of the reactions concern actual factual, informational elements of the show (nutrition/health, food production and marketing). Although we cannot generalize our findings with respect to social media reactions to the show's whole audience, our data nonetheless support literature stating that infotainment does not impede uptake (e.g. Mujica and Bachmann, 2016). However, further comparative and experimental research is needed to determine whether uptake is better or worse in purely informational formats than in infotainment formats. Second, our data confirm that audience members experience food choices as complex and that they actively discuss this; they respond to all three main angles presented by the editors, being health, production and marketing, and also bring in other considerations such as ethics, taste and psychological issues like eating disorders.

Third and most importantly, our data indeed reflect that the audience are producers and expert consumers in relation to health (RQ2). Nutritional information incites a lot of refutation, debate and suggestions, and little willingness to change behaviour, which sharply contrasts with the trends in the food production reactions. We believe the explanation for this trend is threefold. First, it can be partly attributed to the differences in how nutrition and health versus food production information are presented to the audience. In many food production items, the information is 'shown' rather than claimed or (re)told as biomedical or nutritional findings. For instance, the weekly 'the way back' item with the backwards editing of the trajectory of a particular foodstuff was always filmed in factories, which provided the audience with visual proof, most likely leaving less room for debate on the truthfulness of the information. For nutritional and health information, providing such (visual or other) proof is harder; this information was usually recounted by an expert, like a dietician or scientist. Research on trust in science shows that the abstract institution or concept of science is more trusted than individual scientists and academics (Tiemeijer and De Jonge, 2013). The individual on-screen expert is therefore more likely to be resisted than the factory footage. This difference in transmission of the message thus might impact uptake. Second, the information on the show is just one of the many sources, including many user-generated ones, to which expert consumer has access to collect, filter and then personally constitute what is adequate knowledge. The audience also acts as expert consumers and as producers when making suggestions and actively adding new insights and co-constructing nutritional and health knowledge. Third, information on healthy food choices is much debated in the public sphere and among scientists (Aschemann-Witzel and Grunert, 2015), which is not the case for most food production information.

To conclude, it seems that the audience, which actively takes the role of expert consumers and producers, is one that is not easy to cater to in terms of health-related media content. Considering the low number of audience members reporting plans to change behaviour and the low acceptance numbers, the show's health-related media content may contribute to the audience knowledge on and perceptions of health and nutrition only to a limited extent. More importantly, it confirms the importance of the question whether it is always a desirable goal to have a heterarchical system in which individual laypeople see themselves as experts, if this means they are critical of, and tend to reject the well-supported health information provided in the show by biomedical experts, and leading to the produsage of alternative claims. This is potentially disempowering rather than empowering, as voiced by some audience members in resistance reactions. These audience members resist being constructed as expert consumers by indicating they find the information overwhelming, which, they feel, makes food choices impossible rather than better and more informed. As produsage is not likely to come to an end, it is important for journalists and biomedical stakeholders to keep the changing audience in mind when thinking about disseminating health information and creating health-related media content.

Finally, our study has some limitations. First, we conceptualized audience reactions in terms of social media reactions explicitly linking up with the show's social media feeds. This is justified by the study's focus on the producing audience, but means that our findings cannot be generalized to the show's whole audience. Second, considering the high number of reactions referring to behaviour change, it would be interesting to further investigate to what extent health-related media content actually impacts on audience's

health behaviour. Third, some reactions were excluded from the analysis because they were impossible to code (because they only contained non-canonical emojis and no text, or because they were written in foreign languages none of the authors understood). Fourth, further comparative research is needed to understand to which extent the observed audience's online responses are specific to the show under scrutiny, and whether other shows incite similar online reactions or not.

Acknowledgements

The authors thank the Health, Media and Society colleagues and the reviewers for the feedback.

Declaration of conflicting interests

The author(s) declared no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

Funding

The author(s) disclosed receipt of the following financial support for the research, authorship, and/or publication of this article: This article is part of a research project financed by the Research Council of Ghent University (01G01414).

References

- Andreassen HK and Trondsen M (2010) The empowered patient and the sociologist. *Social Theory & Health* 8(3): 280–287.
- Aschemann-Witzel J and Grunert KG (2015) Influence of ‘soft’ versus ‘scientific’ health information framing and contradictory information on consumers’ health inferences and attitudes towards a food supplement. *Food Quality and Preference* 42: 90–99.
- Atanasova D and Koteyko N (2017) Obesity frames and counter-frames in British and German online newspapers. *Health: An Interdisciplinary Journal for the Social Study of Health, Illness and Medicine* 21(6): 650–669.
- Boyce T (2007) *Health, Risk and News: The MMR Vaccine and the Media*. New York: Peter Lang.
- Brodie M, Hamel EC, Altman DE, et al. (2003) Health news and the American public, 1996–2002. *Journal of Health Politics, Policy and Law* 28(5): 927–950.
- Bruns A (2008) *Blogs, Wikipedia, Second Life, and Beyond: From Production to Producership*. New York: Peter Lang.
- Creese A (2008) Linguistic ethnography. In: King KA and Hornberger H (eds) *Encyclopedia of Language and Education*. 2nd edn. New York: Springer Science + Business Media LLC, pp. 229–241.
- De Backer CJS and Hudders L (2016) Look who’s cooking: Investigating the relationship between watching educational and edutainment TV cooking shows, eating habits and everyday cooking practices among men and women in Belgium. *Appetite* 96: 494–501.
- Declercq J (forthcoming) Balancing journalists’ and scientists’ professional practices: Producing an infotainment show about food and nutrition in the age of healthism and soft news. *Journal of Applied Linguistics and Professional Practices*.
- Deliens T, Clarys P, De Bourdeaudhuij I, et al. (2014) Determinants of eating behaviour in university students. *BMC Public Health* 14: 53.
- Deprez A and Van Leuven S (2017) About pseudo quarrels and trustworthiness : A multi-method study of health journalism, sourcing practices and Twitter. *Journalism Studies: Online first*. DOI: 10.1080/1461670X.2016.1266910

- Domingo D, Quandt T, Heinonen A, et al. (2008) Participatory journalism practices in the media and beyond: An international comparative study of initiatives in online newspapers. *Journalism Practice* 2(3): 326–342.
- Dumit J (2012) *Drugs for Life: How Pharmaceutical Companies Define Our Health*. New York: Routledge.
- Gray EM and Leahy D (2013) Cooking up healthy citizens: The pedagogy of cookbooks. *M/C Journal* 16(3). Available at: <http://web.a.ebscohost.com.ezproxy.lib.ucalgary.ca/ehost/detail/detail?vid=5&sid=1ee298ad-78be-4229-a33f-8e562b07a021%40sessionmgr4002&hid=4114&bdata=JnNpdGU9ZWhvc3QtbnG12ZQ%3D%3D#db=ufh&AN=91902763>
- Greenhalgh T (2009) Chronic illness: Beyond the expert patient. *British Medical Journal* 338: 629–631.
- Grilli R, Ramsay C and Minozzi S (2002) Mass media interventions: Effects on health services utilisation (review). *Cochrane Database of Systematic Reviews* 1: CD000389.
- Hallin DC and Briggs CL (2016) *Making Health Public: How News Coverage is Remaking Media, Medicine, and Contemporary Life*. New York: Routledge.
- Hartley J (1996) *Popular Reality: Journalism, Modernity, Popular Culture*. London: Arnold.
- Hauttekeete L (2005) De tabloidisering van kranten: mythe of feit? De ontwikkeling van een meetinstrument en een onderzoek naar de tabloidisering van Vlaamse kranten. Doctoral dissertation, Ghent University. Available at: <https://biblio.ugent.be/publication/469619>
- Henderson JA, Ward PR, Coveney JD, et al. (2009) ‘Health is the number one thing we go for’: Healthism, citizenship and food choice. In: *The Australian Sociological Association conference: The future of sociology*. Available at: <https://dspace2.flinders.edu.au/xmlui/bitstream/handle/2328/26028/Henderson%20Healthism.pdf?sequence=1>
- Hsieh H-F and Shannon SE (2005) Three approaches to qualitative content analysis. *Qualitative Health Research* 15(9): 1277–1288.
- Huber M, Knottnerus JA, Green L, et al. (2011) How should we define health? *British Medical Journal* 343: d4163.
- Huovila J and Saikkonen S (2016) Establishing credibility, constructing understanding: The epistemic struggle over healthy eating in the Finnish dietetic blogosphere. *Health* 20(4): 383–400.
- Jacobs G and Slembrouck S (2010) Notes on linguistic ethnography as a liminal activity. *Text & Talk* 30(2): 235–244.
- Keen A (2008) *The Cult of the Amateur*. London: Nicholas Brealey Publishing, Inc.
- Kim YM and Vishak J (2008) Just laugh! You don’t need to remember. *Journal of Communication* 58: 338–360.
- Lariscy RW, Reber BH and Paek H-J (2010) Examination of media channels and types as health information sources for adolescents: Comparisons for black/white, male/female, urban/rural. *Journal of Broadcasting & Electronic Media* 54(1): 102–120.
- Lipworth W, Kerridge I, Morrell B, et al. (2015) Views of health journalists, industry employees and news consumers about disclosure and regulation of industry-journalist relationships: An empirical ethical study. *Journal of Medical Ethics* 41: 252–257.
- Loosen W and Schmidt J (2017) Between proximity and distance: Including the audience in journalism (research). In: Franklin B and Eldridge S II (eds) *The Routledge Companion to Digital Journalism Studies*. London: Routledge. pp. 354–363.
- Lüders M (2008) Conceptualizing personal media. *New Media & Society* 10(5): 683–702.
- Matthews A, Herrett E, Gasparrini A, et al. (2016) Impact of statin related media coverage on use of statins: Interrupted time series analysis with UK primary care data. *British Medical Journal* 353: i3283.
- Mujica C and Bachmann I (2016) The impact of melodramatic news coverage on information recall and comprehension coverage on information recall. *Journalism Studies* 19: 334–352.

- Nguyen A (2012) The effect of soft news on public attachment to the new. *Journalism Studies* 13(5–6): 706–717.
- Niva M (2007) ‘All foods affect health’: Understandings of functional foods and healthy eating among health-oriented Finns. *Appetite* 48: 384–393.
- Norris P (2000) *A Virtuous Circle: Political Communications in Postindustrial Societies*. Cambridge: Cambridge University Press.
- O’Neill D and Harcup T (2009) News values and selectivity. In: Wahl-Jorgensen K and Hanitzsch T (eds) *The Handbook of Journalism Studies*. New York; London: Routledge, pp. 161–174.
- Phillipov M (2013) Mastering obesity: Masterchef Australia and the resistance to public health nutrition. *Media, Culture & Society* 35(4): 506–515.
- Prior M (2003) Any good news in soft news? The impact of soft news preference on political knowledge. *Political Communication* 20(2): 149–171.
- Rampton B (2007) Neo-Hymesian linguistic ethnography in the United Kingdom. *Journal of Sociolinguistics* 11(5): 584–607.
- Saini V, Garcia-Armesto S, Klemperer D, et al. (2017) Drivers of poor medical care. *The Lancet* 390: 178–190.
- Schmidt J-H (2014) Twitter and the rise of personal publics. In: Weller K, Bruns A, Burgess J, et al. (eds) *Twitter and Society*. New York: Peter Lang, pp. 3–14.
- Seale C (2002) *Media & Health*. London: SAGE.
- Smedt TD and Daelemans W (2012) Pattern for Python. *Journal of Machine Learning Research* 13: 2063–2067.
- Sukhan T (2012) Bootcamp, brides, and BMI: Biopedagogical narratives of health and belonging on Canadian size-transformation television. *Television & New Media* 14(3): 194–210.
- Tiemeijer W and De Jonge J (2013) *Hoeveel vertrouwen hebben Nederlanders in wetenschap?* Den Haag. Available at: <https://www.rathenau.nl/nl/publicatie/hoeveel-vertrouwen-hebben-nederlanders-wetenschap>
- Van Slooten E, Friedman DB and Tanner A (2013) Are we getting the health information we need from the mass media? An assessment of consumers’ perceptions of health and medical news. *Journal of Consumer Health on the Internet* 17(1): 35–53.
- Wahl-Jorgensen K and Hanitzsch T (2009) Introduction: On why and how we should do journalism studies. In: Wahl-Jorgensen K and Hanitzsch T (eds) *The Handbook of Journalism Studies*. New York; London: Routledge, pp. 3–16.
- Weishaar H, Dorfman L, Freudenberg N, et al. (2016) Why media representations of corporations matter for public health policy: A scoping review. *BMC Public Health* 16: 899.

Author biographies

Jana Declercq is a PhD researcher at linguistics department of Ghent University (Belgium), working on an interdisciplinary research project on health news. Drawing from a linguistic ethnographic perspective, she focuses on how health news is produced and which discourses relevant stakeholders in health settings produce.

Stéphan Tulkens is a PhD researcher at the institute for Computational Linguistics and Psycholinguistics (CLiPS) at the University of Antwerp (Belgium). He works on models of language processing in bilinguals, focusing specifically on word reading and the phonological and semantic ambiguity bilinguals face during reading.

Sarah Van Leuven is an assistant professor at the department of Communication Sciences at Ghent University. She has published work on a broad range of topics including sourcing practices of journalists, international news coverage, the changing news ecology and innovation in journalistic practices and news organizations.