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Examining trust factors in online food risk information: The case of unpasteurized or ‘raw’ milk

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Experiencing trust factors in online food risk information: The case of unpasteurized or ‘raw’ milk

Abstract

The internet has become an increasingly important way of communicating with consumers about food risk information. However, relatively little is known about how consumers evaluate and come to trust the information they encounter online. Using the example of unpasteurized or raw milk this paper presents two studies exploring the trust factors associated with online information about the risks and benefits of raw milk consumption. In the first study, eye-tracking data was collected from 33 pasteurised milk consumers whilst they viewed six different milk related websites. A descriptive analysis of the eye-tracking data was conducted to explore viewing patterns. Reports revealed the importance of images as a way of capturing initial attention and foregrounding other features and highlighted the significance of introductory text within a homepage. In the second, qualitative study, 41 consumers, some of whom drank raw milk, viewed a selection of milk related websites before participating in either a group discussion or interview. Seventeen of the participants also took part in a follow up telephone interview 2 weeks later. The qualitative data supports the importance of good design whilst noting that balance, authorship agenda, the nature of evidence and personal relevance were also key factors affecting consumers trust judgements. The results of both studies provide support for a staged approach to online trust in which consumers engage in a more rapid, heuristic assessment of a site before moving on to a more in-depth evaluation of the information available. Findings are discussed in relation to the development of trustworthy online food safety resources.

Keywords: unpasteurized milk; trust; internet; food safety; online information; eye tracking.


Introduction

Consumers need to have access to reliable, trustworthy information in order to make informed decisions around food and food safety (Coulson, 2002). Family, friends and peers, food producers, government bodies, consumers' associations, scientists, medical doctors, dieticians and retailers are frequently used sources of information on food risks (Hu, Qi & Hua, 2007; Kornelis, De Jonge, Frewer, & Dagevos, 2007). These sources, however, are sometimes contradictory and vary in the extent to which they are trusted generally (Thiede, 2005), with food safety (Liu, Pieniak & Verbeke, 2014), and in relation certain food types (Jay-Russell, 2010). Furthermore, the credibility of the source can fluctuate in response to specific events, as was the case for the UK government following the BSE crisis (Smith, Young & Gibson, 1999).

The way in which people are accessing food safety information is changing and over the last few years the internet has become an increasingly important way of communicating with consumers about food risk information in the UK and the USA (Redmond & Griffith, 2006; Jacob, Mathiasen & Powell, 2010). In China, television and the internet are the most frequently used channels for food risk hazard information (Liu et al, 2014) and in the West we are also seeing the emergence of social media as a potential way of communicating information about food risk and benefit especially during times of food crisis (Kuttschreuter, Rutsaert, Hilverda, Regan, Barnett & Verbeke, 2014). The internet allows more direct communication between organisations and consumers but also gives voice to groups and individuals that might otherwise be unheard. As farmers, merchants, advocacy groups and individual consumers themselves are now presenting food safety information on the internet, the space becomes more crowded and more confusing for consumers choosing which sources
to trust. Information overload and low levels of trust in the internet are frequently cited by consumers within this context (Rutsaert et al., 2014).

How do consumers regard the internet as a channel of information about food risks and benefits and how do they decide whether to trust the information they find online? We already know that ordinary consumers are more likely to adopt a wider range of trust criteria than experts when assessing health information online in general. Whilst health experts suggest evaluation should be based on certain quality criteria such as completeness, authority of providers, currency of information and readability (Eysenbach, Powell, Kuss & Sa, 2002; Gilardi & Filbini, 2005), literature on consumer trust in online information highlights a range of trust indicators including aesthetics of the site (Cyr, Head & Larios, 2010; Riegelsberger, Sasse & McCarthy, 2005; Harris, Sillence & Briggs, 2009), perceived competence or benevolence of the site (Bhattacherjee, 2002; McKnight & Chervany, 2001), and the sense in which the website is tailored to the user’s specific needs (Briggs, Burford, De Angeli & Lynch, 2002).

In attempting to reconcile these differences in the literature, a key approach has been to propose several distinct stages in the development of consumer trust and engagement online. This so-called ‘staged model approach’ (Briggs et al., 2002), initially developed within an e-commerce setting, has been tested in several medical health information studies (Sillence, Briggs, Harris & Fishwick, 2007) and proved useful in explaining how consumers engage with and trust websites over time. The approach recognises that users are initially influenced by the design of the website and its structure. For example, the use of images can influence consumer trust in the site (Steinbrueck, Schaumberg, Duda & Krueger, 2002). This initial assessment of visual appeal is something that can occur very rapidly with researchers...
showing an exposure of just 50 milliseconds is enough for users to determine a positive or negative first impression (Lingaard, Fernandes, Dudek & Brown, 2006). Once an initial trust impression has formed on the basis of this first heuristic or ‘rule of thumb’ stage, users move to a more systematic evaluation of the website’s content and considers, inter alia, authorship, currency and personal relevance (Sillence et al, 2007). This strategy is consistent with dual process models, such as those developed in the persuasion literature (e.g. Chaiken, 1980), recognising the role of user motivation and opportunity in selecting an appropriate strategy for processing online information.

Alongside trust, the role of threat or risk perception is pivotal. Research exploring the staged model of trust has recognised the role of risk perception on individual responses to health information online (Sillence et al, 2007). Researchers noted attitude towards risk, as well as individual understanding of risk information, affects people’s trust in different health information sources (Harris, Sillence & Briggs, 2011). At a general level, risk perception is likely to be affected by a mixture of culture, individual differences and beliefs (Bontempo, Bottom & Weber, 1997). People are not neutral processors of health-risk information preferring information that is congenial and comforting rather than threatening and unwelcome (Good & Abraham, 2007). People also have strong initial preferences and expectations for the sorts of information they are seeking (Joinson & Banyard, 2002) and these may influence which sites they trust.

The case of raw or unpasteurized milk

For the purposes of this project, we focused on information about the risks and benefits of raw milk consumption. Milk remains for many people an important part of their diet. The majority of consumed milk is pasteurized to remove the threat of bacterial infection through
pathogens such as Listeria and Escherichia coli O157 (American Academy of Paediatrics, 2014). Despite pasteurization, milk borne disease outbreaks still occur (LeJeune & Rajala-Schultz, 2009) and this may in part relate to increased interest in raw or unpasteurized milk products as part of a return to more locally sourced, traditional foodstuffs (Claeys et al, 2013). Advocates promote the nutritional, taste and health benefits despite little empirical evidence to support such claims (American Academy of Paediatrics, 2014). People choosing to consume raw milk, particularly those living in rural locations, often cite their own positive, illness free experiences and see raw milk consumption as part of maintaining a rural identity (Enticott, 2003). Pasteurised milk consumers present a more varied consumer group comprising both those staunchly opposed to drinking raw milk on the grounds of its perceived risks alongside those drinking pasteurised milk out of convenience with little if any awareness of raw milk products or the raw milk debate. Once again, individual differences in response to risk information and food safety orientation are likely to be important here as consumers encounter food risk communication online. We can assume the way in which individuals reflect upon their own set of circumstances in relation to what they read will influence their perceptions of this information and the extent to which they find it trustworthy.

Food safety experts, clinicians and nutrition experts are in a position to provide reliable information about risks and the health claims associated with raw milk. Whilst these professionals undoubtedly face challenges in terms of trying to change risk perceptions and consumption habits of raw milk consumers, in particular, there is still value to be gained from understanding which sources of online information are seen as most trustworthy, which features are preferred and which types of messages are least likely to be derogated. Web sites and social media are becoming important resources for communicating information about
both safety and health benefit claims associated with raw milk (Jay-Russell, 2010). Whilst we know people’s information needs increase during a food crisis or scare (Frewer, Raats & Shepherd, 1994) the ongoing and evolving food safety issues surrounding raw milk pose a different kind of challenge for both communicators and consumers producing and accessing trusted online information. The online setting provides a somewhat unique repository for information about the risks and benefits of raw milk. We know that visual design is important in establishing a preliminary sense of trust in the site. Understanding what people notice and respond to immediately will provide an agenda for examining the structure and content of websites in further detail. In addition to the visual elements the web environment affords opportunities for trust markers above and beyond those offered by more traditional print media. Here we can take the time to gauge the effect of video, interactive elements and tailored information from a range of different sources on the trust perceptions of milk consumers, which may in turn affect their beliefs and behaviours regarding its consumption.

**The current studies**

This paper explores consumers’ perceptions of trust and risk in relation to online information about milk and raw milk products. We used a multi-study, multi-method approach to explore this topic. Study 1 aimed to identify features of the websites’ design and structure that capture participants’ initial attention as we know that rapid judgments are made about websites regarding their perceived trustworthiness based on their appearance and design. Study 2 examines these features in more detail to understand the value participants place on these elements and the role they play in the development of trust and perception of risk in the websites when more in-depth processing of the information is taking place i.e. to understand what that captured attention means in terms of more evaluative trust judgements. Follow-up data is also collected (study 2) to explore the lasting impact of website features on consumers
and whether consumption beliefs or behaviours have changed. Together, the studies provide an overview of trusted sources of milk food safety information as well as highlighting areas of mistrust. It is a timely piece of research given the growing concern of raw milk consumption, and presents the first application of a staged model of trust in a food risk communication area.

Study 1

Participants and recruitment:

Upon ethical approval for the research from the University Ethics Committee, 33 adult pasteurised milk consumers (see table 1) based in the UK were recruited via newsletter, posters, emails and word of mouth. In an attempt to sample individual differences across consumers, Berg’s (2004) food safety orientation typology was used to measure participants’ potential variations towards food safety information. Berg proposed 4 consumer types: 1) non-reflexive trust (the naïve consumer); 2) reflexive trust (the sensible consumer); 3) reflexive distrust (the sceptical consumer); and 4) repressed distrust (the denying consumer). Twenty-four participants could be categorised using this typology (see table 1). All participants were compensated £20 for their time in this study.

Table 1: Sample characteristics for study 1 (N=33)

<table>
<thead>
<tr>
<th>Milk consumer type</th>
<th>Pasteurized milk consumers = 33</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gender</td>
<td>Male = 13</td>
</tr>
<tr>
<td></td>
<td>Female = 20</td>
</tr>
<tr>
<td>Age</td>
<td>M=30.12 (range=18-60)</td>
</tr>
</tbody>
</table>
| Berg consumer type* | Sensible = 17  
|                    | Skeptical = 5  
|                    | Naïve = 1  
|                    | Denying = 1  
|                    | Unclassified = 9  

| Internet use | Years | M=12.49  
|             | Days per week | M=6.39  
|             | Hours per week | M=19.10  

| Internet proficiency | Beginner | 2  
|                      | Intermediate | 9  
|                      | Advanced | 22  

*The Berg (2004) typology is operationalised by placing those who answer ‘Very’ and ‘Rather large degree’ in the categories reflexive and trusting. Those who answer average are not classified into these clear 4 categories.

**Design and procedure:**

Eye-tracking data were collected to provide objective data on user attention and engagement allowing exploration of the features that capture participants’ initial attention. An eye tracker (Tobii x1 Light) fixed to a laptop with a 17-inch display was used to record the eye movements as participants viewed six pre-determined websites (3 largely pro-pasteurization and 3 pro-raw milk - see Table 2). The pre-determined websites were selected on the basis of factors previous research suggests may influence online trust (e.g. design, source, visual imagery, social presence (Briggs et al, 2002). The choice of sites was also influenced by an earlier pilot study examining participants free search results on the topic and were chosen to cover a range of opinions on the topic. Whilst the design of each homepage differed, there were several common features, for example, images, videos, introductory text, website name,
and navigation areas (i.e. the menu or tabs). These homepage features are labelled as Areas of Interest (AOI) for the purposes of eye tracking analysis.

Participants attended a one-hour testing session at a UK university. After giving their informed consent, participants spent 5 minutes looking at each website whilst having their eye movements tracked using the eye tracker. After viewing each website, participants completed a logbook where they could indicate, by means of circling either a negative, neutral, or positive face icon, their first impression of the site’s homepage. They were also asked to write some qualitative comments to support this impression. Next, participants were asked to rate the extent to which they trusted the site. Trust was measured using a shortened 3-item version of Harris et al (2011) measure of online trust: “I trusted the site”; “I felt I could trust the information on the site”; and “I felt I could trust the person putting information on the site”, on a five point scale from strongly disagree (1) to strongly agree (5). The scale showed very high internal reliability with a Cronbach’s alpha of .951.

Table 2: Milk websites selected for the present research studies

<table>
<thead>
<tr>
<th>Website name</th>
<th>Website address</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Pro-pastuerisation milk websites</strong></td>
<td></td>
</tr>
<tr>
<td>Real Raw Milk Facts[^1,^2]</td>
<td><a href="http://www.realrawmilkfacts.com/">http://www.realrawmilkfacts.com/</a></td>
</tr>
<tr>
<td>Centre For Disease Control (CDC)[^1,^2]</td>
<td><a href="http://www.cdc.gov/foodsafety/rawmilk/raw-milk-index.html">http://www.cdc.gov/foodsafety/rawmilk/raw-milk-index.html</a></td>
</tr>
<tr>
<td><strong>Pro-unpastuerized milk websites</strong></td>
<td></td>
</tr>
</tbody>
</table>
Analysis:

In accordance with the eye tracking analysis software different design features of interest on each website homepage were marked as AOIs. Mean scores and ranges were calculated for each AOI in terms of: a) time to first fixation, to give a sense of the features that capture initial attention; b) total fixation duration, to give a sense of engagement with a feature; and c) percentage of participants fixating on each AOI to give a sense of the consistency of attention amongst participants. The eye-tracking software uses fixation filters to group gaze data into meaningful fixations on a particular area. A number of different algorithms for fixation definition have been proposed by researchers and practitioners (see for example, Nyström & Holmqvist, 2010) and in the present study fixation was assessed using the default Tobii fixation filter. Provided the equipment is set up according to the manual then eye tracking is accurate to within 0.5 degrees. Overall, average trust scores for each website were calculated, and frequency counts of negative, neutral and positive first impressions. Qualitative comments to support these impressions were thematically coded.

Results

Eye tracking

Recent eye-tracking studies have examined design properties of websites in relation to trust outcomes and speed of task completion (Cyr et al 2010; Roth, Tuch, Mekler, Bargas-Avila & Opwis, 2013). Utilizing time spent on different AOIs to provide clues as to the attentional
properties of the website, table 3 presents eye tracking data for the six websites viewed in this study. Although the websites contain many similar features, their actual design and layout varies greatly, making absolute comparisons impossible. Despite this, the results reveal a number of interesting findings with respect to the way in which the websites captured and held participants’ attention.
Table 3: Eye tracking data for the Areas of Interest (AOIs) for the different websites (N=33)

<table>
<thead>
<tr>
<th>Area of Interest</th>
<th>Dairy farming today</th>
<th>CDC</th>
<th>Hook and Son</th>
<th>Raw milk institute</th>
<th>Real raw milk facts</th>
<th>Raw milk facts</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Mean time to first fixation in secs (range)</td>
<td>19.48 (3.07-54.21)</td>
<td>7.12 (1.43-32.27)</td>
<td>7.05 (0.33-28.04)</td>
<td>60.09 (15.5-180.58)</td>
<td>13.38 (0-36.27)</td>
</tr>
<tr>
<td></td>
<td>Mean total fixation duration in secs (range)</td>
<td>14.66 (4.18-72.41)</td>
<td>18.37 (0.63-36.77)</td>
<td>12.82 (0.27-61.56)</td>
<td>10.75 (2.14-33.91)</td>
<td>20.32 (0.82-46.37)</td>
</tr>
<tr>
<td></td>
<td>Percentage fixated</td>
<td>100%</td>
<td>100%</td>
<td>100%</td>
<td>100%</td>
<td>100%</td>
</tr>
<tr>
<td>Introductory text</td>
<td>Image (static (S) or rolling (R))</td>
<td>R</td>
<td>S</td>
<td>R</td>
<td>S</td>
<td>S</td>
</tr>
<tr>
<td></td>
<td>Mean time to first fixation in secs (range)</td>
<td>6.55 (0-37.98)</td>
<td>76.00 (33.38-129.9)</td>
<td>6.61 (0-61-25.2)</td>
<td>6.34 (0-72.96)</td>
<td>4.35 (0-17.55)</td>
</tr>
<tr>
<td></td>
<td>Mean total fixation duration in secs (range)</td>
<td>14.20 (2.15-53.45)</td>
<td>0.92 (0.23-3.2)</td>
<td>10.63 (0.4-97.19)</td>
<td>0.57 (0.17-1.25)</td>
<td>0.74 (0.07-2.77)</td>
</tr>
<tr>
<td></td>
<td>Percentage fixated</td>
<td>100%</td>
<td>36%</td>
<td>92%</td>
<td>45%</td>
<td>71%</td>
</tr>
<tr>
<td>Navigation features (left (L) or top (T))</td>
<td>Mean time to first fixation in secs (range)</td>
<td>11.04 (0-42.88)</td>
<td>17.20 (0.36-49.73)</td>
<td>19.54 (0-63.61)</td>
<td>65.19 (7.81-167.58)</td>
<td>29.38 (1.27-239.64)</td>
</tr>
<tr>
<td></td>
<td>Mean total fixation duration in secs (range)</td>
<td>4.13 (0-9.17)</td>
<td>5.1 (0.09-13.44)</td>
<td>5.71 (0.35-18.25)</td>
<td>3.34 (0.23-14.44)</td>
<td>1.81 (0.18-8.53)</td>
</tr>
<tr>
<td></td>
<td>Percentage fixated</td>
<td>100%</td>
<td>89%</td>
<td>96%</td>
<td>84%</td>
<td>86%</td>
</tr>
<tr>
<td>Name</td>
<td>Mean time to first fixation in secs (range)</td>
<td>11.43 (0.32-116.31)</td>
<td>8.58 (0-109.68)</td>
<td>40.22 (0.74-267.48)</td>
<td>38.42 (1.03-192.88)</td>
<td>6.4 (0-43.79)</td>
</tr>
<tr>
<td></td>
<td>Mean total fixation duration in secs (range)</td>
<td>1.46 (0.23-4.21)</td>
<td>1.18 (0.18-4.15)</td>
<td>1.16 (0.19-3.57)</td>
<td>2.93 (0.27-13.19)</td>
<td>1.1 (0.21-3.09)</td>
</tr>
<tr>
<td></td>
<td>Percentage fixated</td>
<td>88%</td>
<td>79%</td>
<td>72%</td>
<td>97%</td>
<td>82%</td>
</tr>
<tr>
<td>Video (have to click to play) (duration)</td>
<td>Mean time to first fixation in secs (range)</td>
<td>5 minutes 58 s</td>
<td>12 minutes 13 s</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Mean total fixation duration in secs (range)</td>
<td>16.91 (0-0.58.88)</td>
<td>20.28 (0-50.17)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Percentage fixated</td>
<td>5 minutes 58 s</td>
<td>12 minutes 13 s</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Real life stories</td>
<td>Mean time to first fixation in secs (range)</td>
<td>23.51 (1.4-114.78)</td>
<td>9.67 (0.05-74.86)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Mean total fixation duration in secs (range)</td>
<td>3.89 (0.25-15.07)</td>
<td>6.27 (0.72-13.12)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Percentage fixated</td>
<td>86%</td>
<td>96%</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Percentage fixation data indicates the importance of introductory text in the sense that almost all participants engaged with the written text even if it is not the main feature of the homepage (either in physical size terms or in informational content). It also reveals that images are viewed more if placed above the fold (the portions of a webpage that are visible without scrolling down the screen) rather than below. Time to first fixation data tells us something about the features of the website that first capture the participants’ attention. Table 3 indicates the importance of images in this respect. In four websites the image was the first feature to be viewed, whereas the website name was second in half the websites. Participants were quicker to fixate on ‘real life stories’ in the Real Raw Milk Facts site, possibly because of a thumbnail photograph of the individual ‘sharing’ their story.

The total duration fixation data shows that although images were often the first feature attended to by participants, in the case of static images, they rarely sustained attention. Navigation features showed considerable variation in terms of fixation duration, reflecting the range of information contained within some menus and tabs. Four websites with left-side navigation tabs received more attention than those with navigation tabs across the page top.

**First impressions and trust:**

Figure 1 shows two websites received low trust scores: Raw Milk Facts and Raw Milk Institute. These sites also had the highest negative impressions count, twice as many negative first impressions as ‘trusted’ sites. Both sites were pro-raw milk. Negative first impressions were supported by qualitative comments concerning the “busy” or “cluttered layout”, the “amateur feel” of the site or presence of adverts. Similarly, positive first impressions included participants referring to ease of access to information, professional look and feel, and
appropriate use of photos and illustrations. Websites with these positive first impressions also received higher trust scores (e.g. Hook and Son).

Figure 1: First impression counts and trust scores for the six websites

![First impression counts and trust scores for the six websites](image)

*NB: Trust scores below 3 represent an ‘untrustworthy’ site

Summary of study 1:
Study 1 examined website features capturing users’ initial attention as well as first impressions and trust scores for the websites. It explored potential trust indicators used by participants to make rapid judgements to continue engaging with or reject and leave a site. The findings reinforce the importance of images in capturing users’ initial attention on a website’s homepage. Images are also potentially useful in highlighting or foregrounding other content features on the webpage, for example the ‘real life stories.’ The introductory text remains a significant feature of the homepage, important in terms of setting out the message, direction, and tone of the website. We also found that sites with low overall trust scores also
received a higher number of negative first impression ratings (and vice versa), which strengthens the link between users’ initial, rapid evaluation of a site and their trust evaluations as suggested in the staged model of trust. Now that these elements have been identified as important in capturing attention, study 2 will explore them in more depth, asking what value consumers place on different elements of food safety websites and exploring qualitatively how these elements feed into more in-depth evaluative trust judgements.

Study 2

Participants and recruitment:

After obtaining ethical approval for this research from both the relevant UK and USA University Ethics Committees, a new sample of 41 adult milk consumers took part in the study (see table 4). Twenty-four participants were resident in USA and 17 were resident in the UK. Participants varied in terms of employment, internet proficiency, milk consumption, and Berg’s (2004) consumer types. All used the internet at least once a week. Overall, there were 11 raw milk consumers and 30 pasteurised milk consumers. Of the latter, 16 were considered low risk (i.e. healthy adults) and 14 were considered high risk (e.g. pregnant women or older adults). These risk groups were chosen to ensure data was collected from the spectrum of milk consumers. Specifically, those already consuming raw milk and those who might be expected to feel particularly vulnerable in relation to certain food safety issues. Participants were recruited through advertisements in local media, newsletters, posters, email and word of mouth. All participants were compensated for their time (£20 UK sample; $40 USA sample).

Table 4: Summary of study 2 participants (N=41)

<table>
<thead>
<tr>
<th>UK sample</th>
<th>USA sample</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td>Milk consumer type</td>
<td>Pasteurized milk consumers = 15</td>
</tr>
<tr>
<td>--------------------</td>
<td>---------------------------------</td>
</tr>
<tr>
<td>Risk level</td>
<td>Low risk = 9 (healthy adults)</td>
</tr>
<tr>
<td>Gender</td>
<td>Male = 5</td>
</tr>
<tr>
<td>Age</td>
<td>M=48 (range= 24-85 years)</td>
</tr>
<tr>
<td>Berg consumer type</td>
<td>Sensible = 9</td>
</tr>
<tr>
<td></td>
<td>Naïve = 0</td>
</tr>
<tr>
<td></td>
<td>3 unclassified*</td>
</tr>
<tr>
<td>Employment</td>
<td>Full-time = 8</td>
</tr>
<tr>
<td></td>
<td>Retired = 6</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td>Internet use</td>
<td>Years</td>
</tr>
<tr>
<td></td>
<td>Days per week</td>
</tr>
<tr>
<td></td>
<td>Hours per week</td>
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<tr>
<td></td>
<td>Beginner</td>
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<td></td>
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<td>Advanced</td>
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**Design and procedure:**

This study adopted an innovative research methodology successfully used within the e-health context (see Sillence et al., 2007). Participants attended a three-hour discussion group (with other people from the same milk consumer group, e.g. older adults) held in an internet café-style setting within a university setting in either the UK or USA. It comprised of a room with several computer terminals and a large desk in which to hold group discussion. For practical purposes, the pregnant women took part in individual interviews as it proved too difficult for these participants to be able to confirm their attendance at a group testing session. The study was divided into three parts (see Table 5 for details). After providing written consent and a background questionnaire, participants moved sequentially through each study part. Firstly, a restricted range internet search (i.e. only specific websites could be viewed) including the 6 from study 1 and 2 additional sites to broaden the discussion. Websites were chosen in consultation with colleagues to ensure a range of opinions and perspectives on the topic and that they would be broadly applicable/of interest to both UK and USA participants. Four of the websites took a generally pro-pasteurisation position and the remaining four were generally pro-raw milk consumption (see Table 2 for websites). As in study 1, participants were asked to spend a brief amount of time (approx. 5 minutes) looking at each website (starting with the website home/landing page). They then completed a logbook entry for the site. The logbooks were intended to be used as an aide memoire to enrich the detail of the subsequent discussions. Participants worked at their own computer terminals and did not interact with each other during this web browsing task. They could search the sites in any order. The use of the restricted search task has been successfully employed in other studies.
(Sillence, Hardy, Harris & Briggs, 2013) allowing a range of websites to be explored whilst allowing the expression of individual preferences.
Table 5: Study 2 data collection procedure

<table>
<thead>
<tr>
<th>Part</th>
<th>What</th>
<th>Duration (approx.)</th>
<th>Data collected</th>
</tr>
</thead>
<tbody>
<tr>
<td>Part 1</td>
<td>Search within a restricted set of 8 websites:</td>
<td>40 mins</td>
<td>Logbook</td>
</tr>
<tr>
<td></td>
<td>Focus group</td>
<td>30 mins</td>
<td>Audio recording of discussion</td>
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<tr>
<td></td>
<td>Break</td>
<td>5 mins</td>
<td></td>
</tr>
<tr>
<td>Part 2</td>
<td>Selection of a single website:</td>
<td>20 mins</td>
<td>Logbook</td>
</tr>
<tr>
<td></td>
<td>1 of the 8 websites selected for further investigation</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Focus group</td>
<td>20 mins</td>
<td>Audio recording of discussion</td>
</tr>
<tr>
<td></td>
<td>Break</td>
<td>2 weeks</td>
<td></td>
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<tr>
<td>Part 3</td>
<td>Follow up interviews</td>
<td>20 mins</td>
<td>Audio recording of discussion</td>
</tr>
</tbody>
</table>

After viewing all eight sites individually, participants engaged in a guided group discussion (or individual interview for pregnant women) using themes developed from the literature around the staged model of trust and piloted before commencing the current study. The discussion themes followed: (a) first impressions; (b) trusted and mistrusted websites; and (c) future website engagement. Participants were then asked to select one website to explore again in more detail individually (Part 2) and discuss that site and their selection and evaluation factors as a group (or within the individual interview). Two weeks later, participants were contacted for a follow-up telephone interview (Part 3) to ascertain whether individuals had: i) discussed the information with friends, family, or peers; ii) engaged in further research of the topic; or iii) changed their attitudes and/or behaviour in relation to milk consumption. Time restrictions meant that unfortunately the researcher was unable to collect follow up data from the USA sample.
All discussions and interviews were recorded and transcribed verbatim. After inspecting the transcripts from the individual interviews it was decided to combine with the group transcripts for analysis as they did not differ substantially. Transcripts were scrutinized for extracts describing trust and mistrust and coded by (author1) using a hybrid of inductive and deductive thematic coding. Data was coded initially under two anticipated (deductive) themes - *first impressions* and *authorship* - drawn from the existing literature (e.g. Harris et al. 2009; Bhattacherjee, 2002), and under emergent (inductive) themes - *polarization and balance*, *nature of evidence* and *reader’s lens*. (Author2) read the transcripts and considered the codes. Constant comparison was used during the analysis to ensure accurate interpretation and that results represented all perspectives. Discrepancies between the coders were resolved through discussion and mutual agreement.

**Results**

Participants discussed several factors associated with sites they had chosen to explore in more depth. Perceived trust in the sites was an important feature of their selection and was apparent in relation to the four main themes in the data: i) polarization and balance; ii) the nature of evidence; iii) authorship agenda; and iv) reader’s lens. It was notable most themes indicated consensus across different demographic groups and countries. Contradictory views, where observed, are noted below.

**Theme 1. Polarization and balance**

This theme referred to the nature of the raw milk debate and the way in which different websites approached the information. Although awareness of raw milk as a topic varied both between and within the UK and the USA, the vast majority of participants were surprised by
the extreme positions held by proponents of the debate. People commented on the strength of conviction expressed within the websites and the common disregard for opposing viewpoints. One participant remarked that the way in which the websites favored one side or the other left her feeling as though she could not fully trust any of the sites. Ignoring one half of the debate left people with feelings of frustration. One woman explained:

“I didn’t like that none of them actually looked at both sides it was either one side or another. On each site I kept trying to say you know what about the other side because there is another side to both of those and they don’t take that into account and I feel like I’m treated stupid.” (P23, Pasteurized milk consumer, USA)

There was also a sense among UK participants that the debate was somewhat polarized across the two countries with the US taking a harder anti-raw milk stance. Despite the keenly felt schism between the two sides of the debate, a few people felt one side did a better job including the opposing points of view than the other. In some cases, this may have reflected the participant’s strongly held viewpoint and their struggle to find positive comments about websites not matching their own perspective. For others new to the topic, this appears to have been a more ‘genuine’ observation. For example:

“I prefer websites that have both sides of the argument and what I found was generally was that those that are pro drinking raw milk had both sides of the facts whereas those that were against drinking it only had their argument in that sense.”

(P7, Pasteurised milk consumer, UK)

All participants explained how they would prefer a balanced approach to the provision of information. Sites acknowledging both sides of the debate and attempting to win their
argument, rather than simply ignore information and comments at odds with their position,
were felt to be more trustworthy overall:

“I don’t think it matters who produces the information as long as it’s a little more
balanced so maybe ok raw milk is only good for 10% of the population its good for
some people but for most people its not but that would be a little better than its not
good for anybody at all period” (P37, Raw milk consumer, USA)

“I found the Hook and Sons one quite trustworthy because it wasn’t pretending it had
all the answers and it was trying to honestly openly deal with the questions without
saying pick one. There were grey areas and I found that trustworthy” (P1,
Pasteurised milk consumer, UK)

Although US participants seemed more familiar with the topic of raw milk, they still
expected a more balanced approach in information provision, especially from some well-
known sites (see ‘Authorship’). In many cases, participants commented on the fact that
narratives running through the debate seemed polarized also, with each site talking
exclusively from either a food safety or a nutrition and health perspective, rather than
presenting and discussing both sides of the debate.

**Theme 2. The nature of evidence**

Evidence was important to all participants; they felt sites should contain sufficient
information to allow people to make their own decisions or at least be able to understand the
debate more clearly. Here participants discussed the nature of sufficient evidence, of
research, facts and objectivity. Trustworthy sites contained references and supporting
evidence, sometimes linked to original or original documents. Less trusted sites failed to provide sufficient ‘evidence’ for their assertions:

“Where are your facts and what kind of studies have been done to prove your point... without any facts for me that doesn’t hold any weight.” (P36, Raw milk consumer, USA)

Evidence on websites was often numerical. Numbers were used to demonstrate risk levels and document disease outbreaks. Participants expressed a preference for detailed information regarding the risks and benefits of raw milk consumption and liked the idea of seeing the evidence or statistics behind the headlines. However, the way sites presented different sets of numerical information was not always straightforward or helpful. For some participants, numerical presentation of risk information or the interpretation of data sets was at times confusing and difficult to contextualise:

“I like to see the detail I really appreciated one of the websites that had footnotes to scientific studies instead of just saying studies have shown the magical phrase but I also struggled with the fact that I looked at different websites and saw different numbers and different facts and so well the numbers sound good but do they really mean anything?” (P25, Pasteurised milk consumer, USA)

“They say that in Alaska that four people have the Campanile(?) bacteria whatever it is since January 13th. Only 4, it does not sound like a lot.” (P11, Older adult, UK)
Discussions also highlighted a number of confusions and misunderstandings around terminology. Unfamiliar biological terms reduced participant confidence when talking about the data, with some feeling unsure about the differences between types of milk, confusing pasteurization with homogenisation or using terms interchangeably. Whilst some felt the fault was theirs, others were convinced some websites purposely introduced confusing or misleading terms to enhance their overall message, for example, by using the terms “raw” and “organic” somewhat interchangeably.

Some of the websites also contained testimonial accounts of raw milk consumption. These accounts typically documented negative outcomes and were often presented as short videos in which people related their experiences of consuming raw milk. These stories were vivid, powerful and easy to recall and almost all participants commented on them regardless of preference:

“See I like it when there are real life stories. I think I tend to like believe it more.” I trusted it [the website] because it made me cry I had a lump in my throat.” (P5, Pasteurized milk consumer, UK)

A number of people were cautious of video material with one participant remarking it was an easy medium through which to sensationalize a topic. The majority found them credible and genuine on a case-by-case basis, but both USA and UK participants noted that such experiential evidence did not really impact upon the debate in any meaningful manner:

“I trusted what the people who have had those experiences argue. It really gives you an insight to how serious it was for those people but it doesn’t give you an insight to
how common it is for that to happen and the likelihood of that compared with other sources of E coli.” (P15, Pregnant milk consumer, UK)

For raw milk consumers the small number of negative testimonials on the websites contrasted with their own experiential evidence. One participant explained:

“So you’ve got three videos on your website of people that drank raw milk and got sick I’ve had thirty forty people in my driving group over the last five years who’ve been drinking raw milk for five years and haven’t gotten so what’s the balance what’s the weight of your three people against my forty?” (P34, Raw milk consumer, USA)

Theme 3. Authorship agenda

Participants paid attention to the authorship or ownership of each website and many expressed certain expectations regarding the quality, tone, and balance of well-known sites. They acknowledged all sites would have an agenda regarding raw milk. Some of these agendas were predictable and accepted in terms of content and direction of information (i.e. pro-raw milk or pro-pasteurized milk). For a site or organization that was familiar however, participants were disappointed if it failed to live up to certain expectations regarding tone and quality of writing. This was noticeable for government sites in particular:

“I was really surprised at how... I thought the CDC site came across as being really alarmist and really condescending I mean I think that was the one that opened up with in quotes back to nature in a very sneering tone as if anyone who is concerned about that sort of thing is obviously an idiot.” (P20, Pasteurised milk consumer, USA)
Older participants appeared to exhibit a stronger sense of trust in their respective government institutions and felt more confident of the government’s agenda in relation to raw milk:

“I think I would rather trust the government (site) and not go for it (consuming raw milk)... I mean they should be impartial. What would they gain? They’re looking after the health of the country aren’t they? I dunno.” (P8, Older milk consumer, UK)

With unfamiliar or less well-known sites, participants spent more time querying the organizations’ motivations and agenda with respect to raw milk. They scrutinized the name and logo of the site and commented on unprofessional design features. Interestingly, a few participants recognised that the visual appeal of a site may not always be a marker of its trustworthiness but indicated that it was difficult to ignore. Overall, older participants made fewer comments regarding the design of the websites. That said, the presence of adverts was viewed with scepticism by some giving reason to question the motivation of the site and its credibility. Establishing the authorship credentials for the websites was a key priority for several participants when encountering unfamiliar sites. Knowing who owned the site also helped people to gauge its agenda and thus evaluate whether the website was likely to have consumer interests at heart, and, ultimately, whether or not it was trustworthy:

“That was like real raw milk facts.com but I did go to ‘who are the people behind the website’ and then you can like trust the people and look at the names and associations and see where they are from and then I can just like read more.” (P24, Pasteurised milk consumer, USA).

**Theme 4. Reader’s lens**
The websites were of course all viewed through each participant’s own world lens. To these ends people brought with them different levels of knowledge, experience of the topic, personal preferences and biases. This ‘reader’s lens’ affected behavior as participants searched and selected websites. For example, some chose not to engage with some video testimonials because of their existing viewpoint regarding unpasteurized milk. When one participant asked for her thoughts on the testimonial videos on the website she replied that she hadn’t clicked on any of them because they were pro raw milk and she did not like that. Some participants acknowledged their own existing biases with regard to some of the websites and admitted that this colored their perceptions of the information they contained. For participants already holding strong views on the topic of raw milk they appeared highly motivated to seek information that supported their viewpoint as one participant reflected:

“I trust them because they are talking about things that I believe already. So it’s kind of reinforcing what I already think. And I think you tend to trust someone more if they’ve got the same opinions as you.” (P16, Raw milk consumer)

The extent to which people trusted and engaged with the material reflected the personal relevance the information had for them. Participants were more likely to engage with sites that provided a good match for their circumstances. One USA participant used the interactive features on one site to locate her home state in order to read relevant legislative issues. UK participants, on the whole, noted the origin of the websites more keenly than the US sample and demonstrated a preference for UK-based or UK-centric material:

“I just thought I preferred the Hook and Son one rather than any of the others. It was based in England as well so I thought ‘this will be more about something that is
Participants in both countries reflected on information they read in relation to their own circumstances. One participant remarked he felt unable to connect with peer accounts targeted at parents, not being one himself. In other instances, participants weighed up what they had discovered about the risks and benefits of raw milk consumption and compared that to their current health status:

“None of the purported health benefits are anything I say absolutely I am concerned about you know like I’m lactose intolerant or I have allergies or whatever so none of those benefits particularly speak to me so in the balance of things I’m like not going to drink raw milk the risks are too high.” (P20, Pasteurised milk consumer, USA)

Finally, some people expressed a desire to hear from a voice similar to theirs. One American participant, for example, regularly consumed low pasteurized milk and felt her position was not represented on the websites. Participants preferred sites that resonated with them at some level. For the older group, the notion of raw milk altogether was viewed as being for someone else, either someone younger, with more disposable income or someone with an interest in organic, natural products. Accordingly, many of the older UK consumers felt unable to identify with the online information, in part because of a perceived US bias, but also felt the information was aimed at a younger, wealthier audience. Older participants also appeared aware of particular health risks associated with their age.

Follow-up interviews
Since the testing session, most UK participants reported that the websites they had viewed. For those that had not consumed raw milk before, they noted that the topic was new for other people as well and had not encountered anyone else who consumed raw milk during their discussions. Two weeks after viewing the websites nearly all the participants recalled aspects of the ‘real life stories’ they had read or seen on the websites, even if the details of the particular illnesses had been forgotten:

“The thing that sticks out most in my mind is the videos of the crying mothers and their children an inch from death” (P16, Raw milk consumer, UK)

Only two website names were recalled - Raw Milk Facts and the Campaign For Real Milk - although other people described the sites that they remembered in some detail despite not recalling the site name. Participants’ recollections were clustered around the vivid testimonials, the so-called ‘scare stories’, and the sense of a highly polarised debate. Several participants upon reflection felt that the American sites emphasized people and family elements of milk production, whilst UK sites had emphasized animal welfare.

A small number of participants had either revisited some of the sites from the session (e.g. Dairy Farming Today) in order to watch the videos, or had conducted their own new searches. These searches were typically concerned with locating local milk producers. Whilst the sessions raised awareness of the topic, there was a sense, certainly amongst the older participants, that they were unlikely to try raw milk because of the food safety concerns. For others, convenience and cost were seen as the main prohibitive factors. For the two raw milk consumers, viewing the sites during the session provoked a lot of thought and discussion with friends and colleagues. One participant explained that the websites had highlighted the vulnerability of specific groups to the risks of raw milk consumption, although his own habits
remained unaffected. Overall, all participants reported that they had taken a keener interest in their milk over the preceding two weeks and had read the labels on supermarket milk more carefully. One participant had located a local farmers’ market to visit, but apart from the raw milk consumers, no-one had purchased raw milk during that period.

Discussion

The purpose of this study was to examine how consumers evaluate and then come to trust food safety websites, using milk consumption and the raw milk debate as our case study. In keeping with a more developmental or staged approach to trust we focussed on two different forms of evaluation. Firstly, a rapid evaluation or screening of sites in which we observed the website features that captured users’ initial attention. Secondly, a more in depth evaluative stage in which users, having already rejected certain sites, select trusted sites to engage with further. Having identified in study 1 the features that captured users’ initial attention, we were then able in study 2 to explore the value participants placed on these different elements and to understand the role of different features in the development of rapid and more in-depth evaluative trust judgements. Here, we combine the features that feed into initial trust judgements and the ways in which these features are subjected to further processing to understand how they influence more considered assessments of trustworthiness.

Study 1 provided an indication of the design factors that capture consumers’ initial attention and contribute to first impressions of the website. Here the key finding is the importance of images and photographs drawing consumers’ attention through careful placement, above the fold, on the homepage. Rolling images also captured initial attention with those websites receiving more positive first impression counts than other sites. The relationship between images and trust, although well studied, is far from straightforward (Steinbrueck et al., 2002; Riegelsberger et al., 2005) with factors such as placement, quality, authenticity and relevance
all considered important. In our study, consumers expressed a preference for images that were directly relevant to the content, documenting, for example, scenes from the dairy producer’s actual farm as opposed to stock images of people, places and animals. Image placement was also important and used strategically to foreground other features. For example, the real life story features received more attention when coupled with an image rather than simply presented as plain text. Overall, positive impressions did appear to relate to higher trust scores supporting the assertion of Lingaard et al. (2006) that web designers only have a very short window of opportunity to present a good, trustworthy impression of their website.

In study 2 participants were asked to search through a restricted set of sites before selecting a single site to engage with further. During the first stage of this task we noted that participants relied upon visual indicators of trust, making rapid evaluations often based on the visual look and feel of the sites. Study 2 confirmed that the design elements of a website are important in terms of making a quick decision about whether or not to engage further with the site (Sillence et al, 2007). Ease of navigation, layout and professional tone of the site all affected the extent to which consumers rejected the websites. In noting the importance of these factors, participants acknowledged that design was important in their overall perceptions even if they felt they ought to be concentrating on other more sophisticated markers of trust, such as authorship, reputation or the presence of references. In keeping with research by Liao and Fu (2014), we also noted older participant’s credibility judgements were on the whole less affected by the design features of the websites.

Participants then selected sites to engage with further and evaluate in more depth during this more evaluative second stage. Four key themes were noted: i) balance and polarisation; ii) the
nature of evidence; iii) authorship agenda; and iv) reader’s lens. Firstly, a key trust marker for participants was presentation of a balanced argument. Many UK participants were relatively unfamiliar with the raw milk debate, and as such, sought a broad and balanced set of online resources to allow them to make sense of the issues for themselves. Although participants were exposed to sites generally supportive of one position or another, the extent to which they presented opposing viewpoints varied and this was something our consumers noted. All participants found overtly biased information less trustworthy and preferred websites to acknowledge alternative viewpoints before outlining a strong(er) case for their own position. In this sense, websites had to actively win the argument rather than simply ignore or belittle opposing viewpoints. Whilst food safety information typically focusses on either the associated risks or benefits, usually the risks, consumers need access to both to make trade-offs about food choices (Frewer et al., 1994).

In general, whilst consumers often express a preference for unbiased discussion about both risks and benefits of food consumption (van Dijk, van Kleef, Owen & Frewer, 2010), participants in our study holding strong positive initial attitudes towards raw milk consumption preferred and trusted information that supported their initial position (Swann & Read, 1981) and often derogated risk-based information. Experimental work by Van Dijk, Fischer, De Jonge, Rowe and Frewer (2012) showed that communicating a balance of positive and negative information about food safety differentially affected people with either positive or negative initial attitudes. Consumers’ positive attitudes became less positive after viewing the information and negative attitudes marginally less negative. Together with the results from our current studies, this highlights the importance of existing attitudes when evaluating risk and benefit information and the influence of a less controlled, more
naturalistic environment in which participants are exposed to varying levels of ‘balance’ within food safety websites.

Participants found sites presenting information in a clear and accessible manner more trustworthy. They wanted to understand the debate for themselves and consequently preferred information easily digestible and meaningful. All consumers discussed the importance of referenced, well-supported material, and in a debate centred on risk/benefit analysis it was perhaps unsurprising that many participants referred to the presence of sufficient detail and understandable numerical evidence. Interpreting these kinds of data was not without difficulty for some and the nature of the topic itself meant some relied on ‘safety rules of thumb’ (Green, Draper & Dowler, 2003) in relation to food preferences, using terms such as “organic” to indicate preferences and distinguish between good and bad foods. Our participants noted that websites on both sides of the debate made reference to science-based evidence and terminology to enhance credibility. This meant consumers were faced with unfamiliar microbiological or medical jargon on the pro-pasteurization sites, with raw milk producer websites frequently referring to the technical processes employed to ensure necessary levels of hygiene. The use of real life stories and video testimonials provided participants with vivid accounts of the risk and benefits associated with raw milk consumption. Regardless of preference, nearly all the participants found this material difficult to ignore and for some the videos acted as key credibility indicators for the website. It is worth noting that personal accounts of health and illness are becoming increasingly common on a variety of websites and have been shown to affect knowledge and understanding of the topic, social support and behavioural outcomes (Ziebland & Wyke, 2012). Both our studies suggest these personal account elements captured consumers’ attention and for some watching the ‘real life story’ videos in particular was a powerful and vivid experience. It may
be that watching this kind of material enhances the personal perception of risk or heightens emotional responses on the part of parents for their children (Shaw, 2004), although this depends on how personally relevant participants find the material. It could be useful for website designers to consider the potential impact on behaviour of including such ‘real life accounts’ on food safety sites over and above presentation of consequence-based statistics (Morgan, Cole, Struttmann & Piercy, 2002).

Participants assessed the source of the online information looking to identify the author’s agenda or underlying motivation. ‘Social trust’ or trust in a source’s motivations is particularly important when domain knowledge is low and people are asked to assess the risks and benefits of a specific topic (Siegrist & Cvetkovich, 2000). To those ends, we saw many consumers, in particular the older adults, relying on their perception of protection motivation underpinning government sources of information. Participants were keen, at least initially, to trust the clear markers of authority and authenticity on websites owned by government bodies or those representing food producers. These findings, however, may also reflect the absence of any recent crisis point in relation to raw milk, as during such times it is not unusual to see a reduction in trust associated with government and food production sources of information (Coveney, Mamerow, Taylor, Henderson, Myer & Ward, 2012). For raw milk consumers in particular, the assessment of similarity between the sources’ values intentions and goals and their own was important in relation to developing a sense of trust. All participants noted the site’s credentials or evidence of competence and many were quick to identify underlying interests or sponsors. In keeping with other research findings, consumers remained wary of vested interest and commercial models of funding and it is noticeable that sites containing adverts receive lower trust scores (Sillence et al., 2007).
Finally, a trusted site provides a good match for consumers in terms of personal and social relevance. For all participants, risk and benefit information on websites was more readily accepted and trusted if it resonated with them at some level. This meant for our UK sample, UK sites were preferred to US sites but the tone or the way in which material was presented also influenced the extent to which people trusted the material and engaged with it further. Using stories of children, for example, to highlight the risks associated with raw milk created a sense of connection with parents viewing the websites and made the information difficult to ignore. Similar findings have been noted in a number of health domains emphasising the importance of finding a good match between the consumer and the website ‘voice’ in terms of age, gender or experience (Sillence et al., 2013). This reinforces the notion that food safety messages should be relevant to the target audience (Jacob et al., 2010) bearing in mind that more informed consumers usually exhibit less dramatic responses to food safety issues than less informed consumers (Jin & Han, 2014).

For consumers in our study, we saw older participants more readily accepting of pro-pasteurization websites’ message on the risks posed by raw milk despite a number remembering drinking raw milk as children. Pregnant women were also aware of the dangers of raw milk as part of their heightened awareness of food safety issues during pregnancy. For a number of low risk pasteurised milk consumers, the information on the websites was interesting and did not necessarily put people off the idea of trying raw milk if it were to become more easily available. Perhaps unsurprisingly, the raw milk drinkers did not feel they were likely to change their behaviour with regard to raw milk nor did those pasteurised milk consumers with strongly held prior attitudes towards the risks of raw milk. For consumers with a-priori beliefs, websites that took a less authoritarian, more balanced and tempered approach were viewed more receptively or at least not dismissed immediately. Novel ways of
presenting information were also welcomed by those, typically raw milk consumers, who had read a great deal about the topic already. This suggests information producers will need to think more carefully about targeting their messages appropriately rather than trying to appeal directly to all consumers, or at least recognise that information efforts must be appropriate for specific populations as people with some topic knowledge will have different informational requirements (Jay-Russell, 2010). Websites are well placed to offer this kind of tailored information. Interactive features allow consumers to tailor information to their own situation ensuring they access information in a way that is meaningful for them and making it less easy to dismiss it as irrelevant. Being able to find information online that resonates with one’s own experience is a potentially helpful first step in getting a message noticed, even if actual behaviour change may be harder to achieve.

Overall, the findings highlight two salient points. Firstly, it was interesting to note the way this particular food risk was perceived by participants. Some pasteurised milk consumers were already aware of the risks and were unlikely to consider drinking raw milk but for others, we noted, that online information had generated discussion and sparked a potential interest in this food product. In our previous work, we have seen people who have yet to make up their mind on a potentially risky issue are heavily affected by variations in the presentation of online material (Sillence, Briggs, Fishwick & Harris, 2004). Secondly, we see how the online setting affects the nature of trust in this context. Design and visual appeal are important ways of capturing users’ attention and provide a very early indication of the trustworthiness of the website. Subsequently, we noted the way in which familiar trust indicators are reimagined through this medium so that visual indicators of personal and social relevance become important. Interactive maps, for example, allow navigation to details
relevant to people’s location and participants identify visually with photos, videos, and real life stories of other groups, such as parents.

Although this study has provided some support for a staged approach to the development of trust in online information, the limited timeline of data collection prevents us from saying anything too definite about the development of longer-term trusting relationships with these websites. A two-week follow up period may be insufficient to witness any significant changes in either attitudes or behaviours. It would be interesting to note how the trust markers noted here differ from those enacted during a genuine point of crisis in relation to raw milk. Another limitation is the underrepresentation of raw milk drinkers and male participants in the studies. Whilst females, as typically primary food preparers (Meysenburg, Albrecht, Litchfield & Ritter-Gooder, 2014) may be more concerned with food safety issues, collecting data from a wider range of people would be advantageous. Finally, it is worth considering the generalizability of these findings across other consumer groups. Although no substantial differences between consumer types in relation to Berg’s typology, a larger sample size may have revealed more subtle cultural effects that have been noted elsewhere (Berg, 2004).

Nevertheless, the trust factors found here are consistent with those found in our other studies looking at a range of health topics.

Conclusion

This paper highlights several influential factors for consumer trust in food safety websites. For food safety professionals, it is important to first acknowledge the relationship between design and the development of initial trust when attempting to present information about the risks and benefits of raw milk recognising that some credible websites may be rejected simply on the basis of poor visual appeal. Messages perceived as more trustworthy are those presenting a balance of risks and benefits, information via a range of clearly accessible, vivid
evidence formats, which express both the authorship credentials of the site and the personal and social relevance of the material to the reader.

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