Food-Risk Benefit Communication: A Systematic Review

Dr Mary Brennan
Senior Lecturer in Food Marketing
Food and Society Group,
Centre for Rural Economy
School of Agriculture, Food & Rural Development,
Newcastle University, UK
Mary.Brennan@ncl.ac.uk
Telephone +191 222 6730
ILSI Europe Expert Group on Risk Communication

- Professor Lynn Frewer
- Dr Arnout Fischer
- Dr Gene Rowe
- Professor Michael Siegrist
- Professor Wim Verbeke
- Dr Rene Lion
- Dr Carel Vereijken
- Dr Ree Meertens
- Dr Mary Brennan
Overview of Presentation

1. Background to the Systematic Review
2. Overview of Methodology
3. Key results
4. Implications for future Food Risk-Benefit Communication
Background to ILSI Europe Systematic Review on Food Risk-Benefit Communication

- Review of consumer risk perceptions of novel food technologies published in Jan 2011
- ILSI Europe Consumer Science Task Force requested that the Expert Group undertake review of food risk-benefit communication
- Review agreed and commenced in June 2011.
- Due for completion and submission in Dec 2012.
What is systematic review?

- An explicit, rigorous and transparent methodology for identifying, selecting and coding papers (Greenhalgh et al, 2004).
- Aims to support evidence based policy making and practice through the identification of the best available evidence for a particular research question (Chamlers, 2003; Oakley, 2002).
- Should be a transparent, replicable and unbiased method for collating available evidence (Briner & Denyer, 2011).
The Process of Systematic Reviewing

1. Identifying the review question
2. Locating & selecting relevant studies
3. Critically appraising the selected studies
4. Analysing and synthesizing the findings from the selected studies
5. Reporting and disseminating the review findings

Briner & Denyer (2011)
1. To what extent have different theoretical frameworks been applied to food risk-benefit communication?

2. What impact, if any, have food risk-benefit communications had on the related food risk/benefit perceptions and behaviours of the public?
Final Search String

- (food* or agri* or agro*)
- (risk*)

and

- (public or consumer* or citizen or lay or individual)
- (attitude* or percept* or accept* or opinion* or view*)

and

- (communicat* or dialogue)
- (Peer reveiwed & english)
Locating and Selecting Studies

- Search performed on 5th September 2011 using Scopus.
- **368** unique references returned
- Rapid evaluation of all abstracts completed independently by two members of the review team using an agreed set of exclusion/inclusion criteria
- **205** references taken forward to next phase of coding.
- Full text of **199/205** obtained.
Locating and Selecting Studies

- Empirical data check performed on all 199 studies.
- Only studies that contained relevant empirical primary data on risk-benefit communication were retained.
- 86 papers retained after empirical check and taken forward for full coding.
Full Coding Scheme: Key Categories

1. Paper ID
2. Methods used
3. Theoretical Approach Adopted
4. Issue being communicated about (food/technology)
5. Focus of Communication – risk only, benefit only, risk-benefit
6. Media Channel
7. Aim of the communication (i.e. behavioural change)
8. Main conclusions
9. Recommendations for future food risk-benefit communication policy and practice

57 papers were determined to contain data relevant to the full coding scheme. The results presented are based on this set of 57 papers.
Key Results
1. Date of Publication and data collection

[Graph showing data collection and paper publication per year]
Key Results
2. Geographical Spread of Research

Location

The most popular journal was Risk Analysis with 18 (~32%) papers.
Key Results
3. Type of Research Methods used

Methods Used

- Survey
- Qualitative
- Experimental Design
- Other
- Not specified
Key Results
4. Sample Population

Population Investigated

- General Public
- Targeted
- Combination
- Other
- Not specified
Key Results
6. Key Food Risks investigated

12 reported comparative analyses of various combinations of these food risks

Where specific foods were mentioned, the majority related to Fish (11), beef (3), chicken/poultry (4) or fruit/veg (5)
Key Results
7. Theoretical Approach

Theoretical Approach

Only 20 papers used a recognised theoretical approach

Theoretical frameworks applied included: Dual processing model (3); framing/heuristics (2); Mental Models/Psychometric approach (3); Rational Actor (2); Social Judgement (2); Risk Information Seeking Processing Model (2)
Aim of Communication

- Change Behaviour
- Change Behavioural Intentions
- Change in attitude/perception
Key Results
9. Dependent Variables Measured

Dependent Variables Measured

- Risk perception
- Attitudinal Constructs
- Behavioural Intentions
- Behaviour
- Combination
- Other (incl. Benefit perceptions and trust)
- Not specified
Papers much more specific in their communication of risk, compared to benefit information
Key Results
11. Form of Communication

Form of Communication

- One Way
- Interactive
- Not specified
Type of Media Channel

- Printed Material
- Internet
- Packaging (Labelling)
- Multiple
- Other
- Not specified
### Key Results

13. How Information was Varied?

<table>
<thead>
<tr>
<th>INFORMATION</th>
<th>N</th>
</tr>
</thead>
<tbody>
<tr>
<td>Type of risk</td>
<td>4</td>
</tr>
<tr>
<td>Framing</td>
<td>6</td>
</tr>
<tr>
<td>Source</td>
<td>6</td>
</tr>
<tr>
<td>Order of arguments</td>
<td>3</td>
</tr>
<tr>
<td>Quantity of information</td>
<td>3</td>
</tr>
<tr>
<td>Type of information</td>
<td>5</td>
</tr>
<tr>
<td>Information format</td>
<td>2</td>
</tr>
<tr>
<td><strong>Participant factors</strong></td>
<td></td>
</tr>
<tr>
<td>Sample demographics</td>
<td>2</td>
</tr>
<tr>
<td>Prior attitude</td>
<td>2</td>
</tr>
<tr>
<td>Motivation</td>
<td>1</td>
</tr>
</tbody>
</table>
# Key Recommendations

<table>
<thead>
<tr>
<th>Recommendation</th>
<th>N</th>
</tr>
</thead>
<tbody>
<tr>
<td>Use balanced and transparent risk (benefit) information</td>
<td>11</td>
</tr>
<tr>
<td>Base communications to a specific groups on their current behaviours/ habits</td>
<td>6</td>
</tr>
<tr>
<td>Target risk communication on relevant consumer group (e.g. vulnerable groups – those considered most ‘at risk’)</td>
<td>3</td>
</tr>
<tr>
<td>Be proactive in risk/benefit communications to the public</td>
<td>3</td>
</tr>
<tr>
<td>Train risk communicators to understand how expert and public perceive risks</td>
<td>3</td>
</tr>
<tr>
<td>Focus on trustworthiness of sources of risk/benefit communications</td>
<td>3</td>
</tr>
<tr>
<td>Communicate about actions being taken to control the risks discussed</td>
<td>2</td>
</tr>
<tr>
<td>Communicate actionable behaviour consumers can adopt to control risks</td>
<td>2</td>
</tr>
<tr>
<td>OTHER mentioned once</td>
<td>9</td>
</tr>
</tbody>
</table>
## Gaps for future Research

<table>
<thead>
<tr>
<th>Area</th>
<th>N</th>
</tr>
</thead>
<tbody>
<tr>
<td>Attention to individual differences in public</td>
<td>6</td>
</tr>
<tr>
<td>Trust in information sources</td>
<td>6</td>
</tr>
<tr>
<td>The impact of media channel</td>
<td>4</td>
</tr>
<tr>
<td>Longitudinal analysis across societal events</td>
<td>4</td>
</tr>
<tr>
<td>Long term effects on perceptions and behaviour</td>
<td>5</td>
</tr>
<tr>
<td>Behavioural impact assessment</td>
<td>2</td>
</tr>
<tr>
<td>Usefulness of information for recipient</td>
<td>5</td>
</tr>
<tr>
<td>Communication of uncertainty</td>
<td>4</td>
</tr>
<tr>
<td>Interactive study within complex (real life) contexts</td>
<td>4</td>
</tr>
<tr>
<td>Theoretical innovation</td>
<td>3</td>
</tr>
<tr>
<td>Other</td>
<td>9 (unique)</td>
</tr>
</tbody>
</table>