

Effective Food Safety Risk Communication



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Overview

- Risk communication in the risk analysis process
 - The importance of risk perceptions
 - Developing targeted communication
 - Crisis communication
 - Conclusions
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- Examples will be drawn from a case studies, Influenza, to illustrate principals of risk communication in relation to food safety and public health.



Risk Communication in the Risk Analysis Process



Risk assessment is the process that is used to quantitatively or qualitatively estimate and characterize risk.

Risk management is the weighing and selecting of options and implementing controls as appropriate to assure an appropriate level of protection.

Risk communication is the exchange of information and opinions concerning risk and risk-related factors among risk assessors, risk managers, consumers and other interested parties.

Differences between expert and citizen perceptions of risk

- **Experts**

- Rely on technical risk assessments
- Use scientific argumentation which does not take account of socio-economic impacts
- In theory, balance risk against benefits (but it is not always clear how socio-economic benefits, or even technical benefits, are assessed).



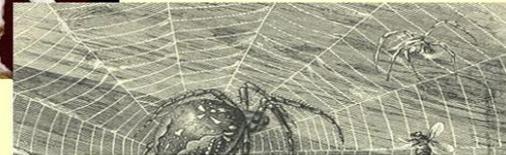
- **Public**

- *f f* Use their risk perceptions to make judgements about risk
- *f f* Require risk communication to take account of their concerns as well as technical risk estimates
- *f* Emotional (or affective) responses are important



Frewer et al, 2066, Critical reviews in food science and nutrition. doi.org/10.1080/10408398.2013.801337

Food risks and food security



THE COST OF SEAFOOD FRAUD

Example Price Differences for Commonly Swapped Species (8 oz filets)

AT THE GROCERY STORE	IN A RESTAURANT
<p>IF YOU MEAN TO BUY:</p> <p>GROUPE \$7.00</p>	<p>IF YOU MEAN TO BUY:</p> <p>GROUPE \$27.00</p>
<p>BUT YOU GET:</p> <p>TILAPIA \$2.99</p>	<p>BUT YOU GET:</p> <p>TILAPIA \$15.00</p>
<p>YOU LOSE: \$4.01</p>	<p>YOU LOSE: \$12.00</p>

mad cow disease



HEALTHY



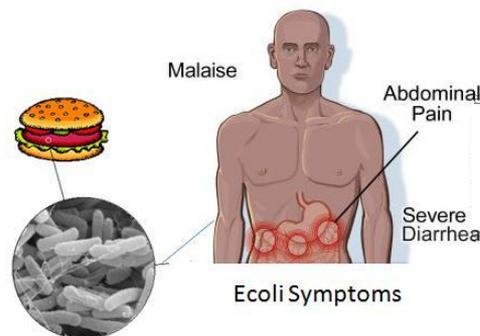
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Frewer, L. J., Fischer, A. R. H., Brennan, M., Bánáti, D., Lion, R., Meertens, R. M., ... & Vereijken, C. M. J. L. (2016). Risk/benefit communication about food—a systematic review of the literature. *Critical reviews in food science and nutrition*, 56(10), 1728-1745.

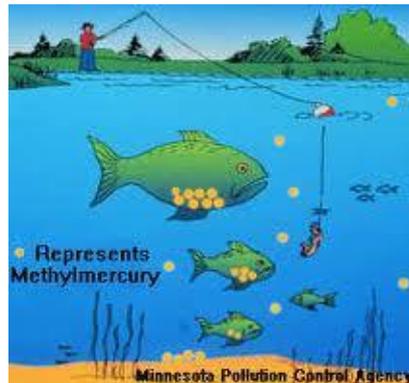
Acute Risks

- Acute risks (in particular when presented in a crisis context) may be difficult to predict in terms of
 - what type of hazard will occur?
 - when?
 - who will be affected?
- Recommendations will therefore need to focus on the ***process of communication***
 - Generic guidelines to communication following potential incident).



Chronic risks

- More information regarding the impact of the risk, and who is affected, is available,
- **Tailor messages according to**
 - consumer/citizen **perceptions** of the **risks and benefits**
 - the **needs** of those most affected by the risk
 - **Focus on current behaviours and/or habits.**



Instrumental and accidental introduction of food risks

- **Instrumental introduction** can be considered in terms of whether it resulted in unintended consequences
 - communication about mitigation measures and related research activities
 - communication about uncertainties and what is being done to reduce these **in real time**



Deliberate contamination and fraud

- Information about ***enforcement and identification*** will be of interest to consumers
- In the case of potential hazards associated with both risks and benefits
 - consumers may lose something from not consuming a particular food, or switching to alternatives



Technology adoption

How does risk perception influence societal acceptance of novel and potentially beneficial emerging technologies?



Novel applications GM animals and improved food security



Lactoferrin production
(Herman the Bull)



Aquabounty Salmon



The goat that produces spider silk in its milk (used for fabrics)

Results of meta-analysis – consumer attitudes to GM Foods

- ***Plant-related or “general” applications*** were more **acceptable** than *animal-related* applications.
- **Pharmaceutical production** more acceptable than **food applications**
- Risk perceptions (associated with both plants and animals) were greater in **Europe** than **North America** and **Asia**.
- Benefit perceptions were greater in **North America** and **Asia** than **Europe**.
- Moral concerns higher in **North America** and **Asia** compared to **Europe**
- ***Risk and benefit perceptions*** increased with time **everywhere**
- Potential to continue to ***map changes*** in perceptions and attitude of data added to the data base



Frewer, L. J., van der Lans, I. A., Fischer, A. R., Reinders, M. J., Menozzi, D., Zhang, X., & Zimmermann, K. L. (2013). Public perceptions of agri-food applications of genetic modification—a systematic review and meta-analysis. *Trends in Food Science & Technology*, 30(2), 142-152.

The Importance of Trust

- People who distrust risk messages are unlikely to believe or act upon the information.
 - This can have severe health, environmental, agri-food, trade, and economic implications.



Frewer, L. J., Howard, C., Hedderley, D., & Shepherd, R. (1996). What determines trust in information about food- related risks? Underlying psychological constructs. *Risk analysis*, 16(4), 473-486.

Why is trust important?

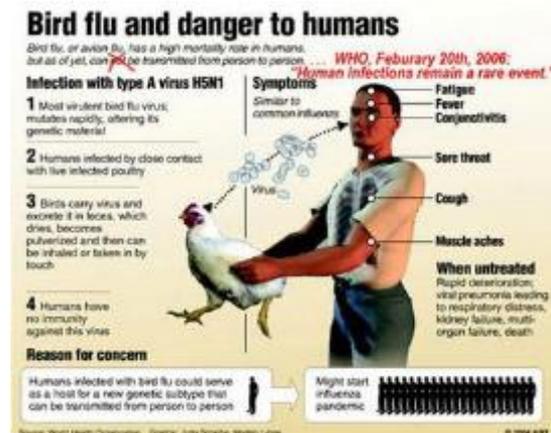
- Acts as a heuristic to help people decide whether information is trustworthy or not..



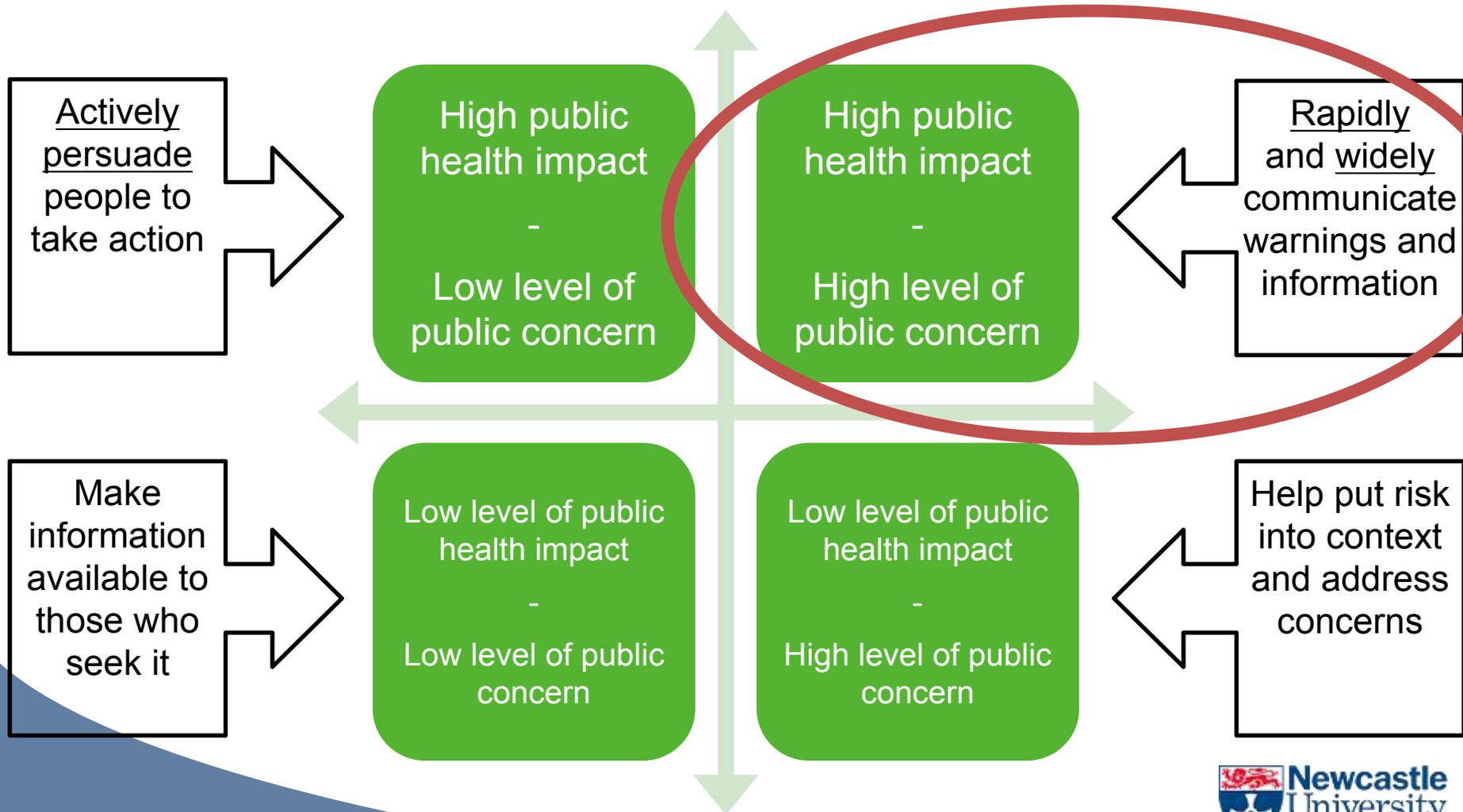
Case study: The characteristics of Avian Influenza which are relevant to risk communication

- Some Avian Influenza viruses, e.g. A(H5N1) and A(H7N9), have caused serious infections in people
- Outbreaks of Avian Influenza in poultry raise global public health concerns due to their:
 - effect on poultry populations
 - potential to cause serious disease in people
 - pandemic potential

Source: http://www.who.int/mediacentre/factsheets/avian_influenza/en/

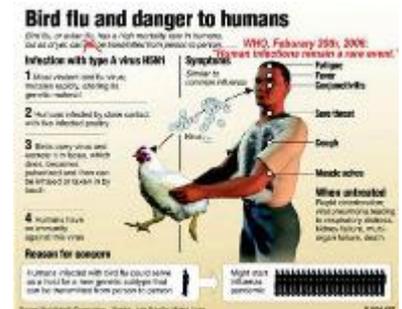


Communicator's Responsibilities for Public Health Risk Communication



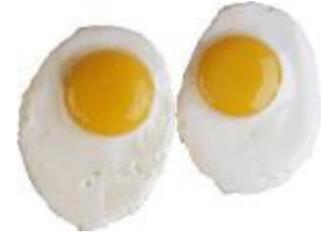
Risk Perception

- An **involuntary risk** over which people have no control is more threatening than one people choose to take
 - **Avian Influenza is perceived as an “involuntary” risk**
 - **Increases fear (emotional responses) and risk perceptions**
- Potentially **catastrophic** risks concern people most
 - **Avian Influenza is a potentially catastrophic risk with global consequences**
 - **Increases fear and risk perception**
- **Unnatural** (technological) risks are more threatening than natural ones
 - **Avian influenza is a “natural “ risk**
 - **Reduces internal health “locus of control”**
 - **People do not take preventative measures**





Implications for Risk Communication



- **Risk communication needs to go beyond the risks identified in the risk assessment, and address people's perceptions and concerns**
 - Information may be discounted
 - If people are worried about eating cooked eggs and they are told they are irrational...
 - Perception that concerns are not considered in risk assessment and/or risk management may decrease confidence in risk analysis
 - The public perceive they are being ignored by decision-makers....

Public health risk communication should not be used to convince or persuade people to adopt the values of the communicator.

Risk perception and Avian Influenza

- Reports of highly pathogenic Avian Influenza epidemics in poultry, such as A(H5N1), can *seriously impact local and global economies and international trade.*
 - *Socioeconomic as well as health impacts*
 - *Socio-economic and human health implications need to be addressed in risk communication*
- The majority of human cases of A(H5N1) and A(H7N9) infection have been associated with direct or indirect contact with infected live or dead poultry
 - *Controlling the disease in animals is the first step in decreasing risks to humans*
 - *Risk communication needs to focus on changing behaviour through the supply chain*
 - *Primary producers, including domestic producers*
 - *Consumers e.g. in live animal markets*

Optimistic bias “My behaviour will not make a difference”

Target communication to needs of different groups (e.g. language, achievable behaviours) while ensuring consistency in message contents across groups

Timeliness

- Rapid communication:
 - Can prevent or reduce the risks of significant harm to public health.
 - Builds and maintains trust (credibility and care) if it appropriately informs the public

It is important, if possible, to include information what people can do to **reduce their risk.**

Empower people to avoid the risk where possible.

Examples of core messages. Preventing Avian Influenza

- There is no evidence that Avian Influenza can be transmitted to humans ***through properly prepared poultry or eggs***
 - ***Provide culturally appropriate information on how to do this***
- A few A(H5N1) human cases have been linked to consumption of dishes made of ***raw, contaminated poultry blood***
 - ***Avoid these dishes***
- ***Slaughter, defeathering, handling carcasses of infected poultry, and preparing poultry for consumption***, especially in household settings are risky
 - ***Provide information on alternative behaviours***



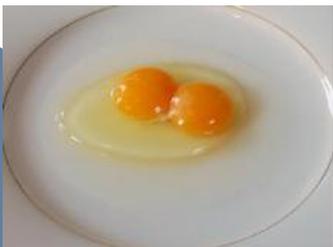
Examples of core messages

- **Risk Assessment**

- There is no evidence that the disease can be spread to people through properly cooked poultry meat and eggs

- **Consequences for communication**

- Protect livelihoods and potentially maintaining healthy nutrition
- Research is needed to establish whether people perceive risks from eating cooked meats and eggs
- If people perceive there is a risk from eating cooked poultry it is important to address this
- Targeted communication
 - how to prepare foods safely, taking account of culinary traditions



Case study: 2003 Netherlands Avian Influenza outbreak

- A 57-year-old veterinarian who visited a poultry farm affected by the (H7N7) strain died on 17 April of acute respiratory distress syndrome
- 89 Additional cases in farmworkers reported (H7N7) with mild symptoms
- Different messages from Ministry of Health (no risk/ “risk attenuation”) and the then Ministry of Agriculture (take precautions)
 - People attend message they prefer (“confirmation bias”)
 - Messages in Dutch language
 - Migrant workers affected **who didn’t speak Dutch**



Conclusions

- Effective risk communication and food safety
- Takes people's risk perceptions into account
 - *May need to research these to identify what they are*
 - Target messages to the needs of stakeholders
 - *Message content AND communication media*
 - Emergency preparedness and communication plans need to be in place in advance of a crisis

Thank you for your attention!