Risk perception, communication and management: Lessons for policy makers

Ragnar Lofstedt PhD

Professor & Director

King's Centre for Risk Management,

King's College London

In this talk today:

* I discuss the origins of risk communication
* How risks are communicated today
* Provide an example: acrylamide
* Lessons for policy makers

Risk and risk communication:

Risk is “the possibility that human actions or events lead to consequences that have an impact on what humans value”

Risk communication is “any purposeful exchange of information about health or environmental risks between interested parties”.

Risk communication has its roots in the field of risk perception

Researchers (specifically Fischhoff, Renn, Slovic and White) uncovered a series of variables that influence how the public perceive risks:

Voluntary-involuntary
Natural-technological
Control-non control
High probability and low consequence risk vis-à-vis low probability and high consequence risk (dread)
Familiar-non familiar

Variables continued:

Reproductive organs-non reproductive organs

Children-no children

Trust-no trust

Fair-not fair

The uncovering of these variables led to interest in how one can best communicate risks

Governments and industry alike took the view that we now know how the public perceive risks

Therefore lets develop communication strategies with our understanding of how people perceive risks

Risk communication strategies that have been implemented

Top down (first attempt at risk communication)

One way presentation of scientific facts

Dialogue (widely used today)

Two way form of persuasive communication

Bottom-up (occurs from time to time)

Stakeholder interaction in a social context

Regulatory failure: the Swedish acrylamide alarm

Background (1)

The Swedish acrylamide case

Acrylamide: is a monomer commonly used to make polyacrylamide plastics. Also a:

- Neurotoxin
- Carcinogen in rats not proven on humans

1997 --Hallandsas scandal

Cows poisoned by acrylamide (a sealant) leaching out from a rail tunnel project. Tunnel workers exposed to high levels of acrylamide. Acrylamide became associated with poison and a potential carcinogenic in publics' minds

Background (2)

- 1997 : Tornqvist (SU researcher) found in her study on exposed tunnel workers :
    - High level of acrylamide in their blood but also
    - Higher than background levels of acrylamide in
    - control group

- Tornqvist postulated that this was associated with cooked food.

Background (3)

- Tornqvist tested hypothesis feeding one group of mice:
  - Fried rat food
  - Not-fried rat food
- Found acrylamide levels in mice eating cooked food 10 times higher
- Results published under title: “Acrylamide: A cooking carcinogen?” (Tareke et al 2000)

Background (4)

- In 2001 Tornqvist measured acrylamide levels in fried carbohydrates
- Found more than 1000 times higher levels of acrylamide than raw or boiled potatoes.
- Showed results to SLV fall 2001.

Background (5)

- SLV took the information seriously and sought to verify results.
- February 2002 verification complete-SLV wanted to go public.
- Tornqvist wanted to wait till the article was published.
- April 2002 Tornqvist gets article results accepted.
- Leaks start to appear:
  - SLV have informed colleagues regarding findings
  - Lab involved publishes a 2 page spread in their external customer journal

Background (6)

Press invitation sent out April 23rd:

"Researchers at Stockholm University have found a substance that can cause cancer and which is formed during cooking a wide range of food stuffs. The National Food Administration have in a pilot study found the substance in many staple foods. The levels (of the substance) are high and new research findings will have international importance with regard to risk valuation, food production and consumption."

Background (7)

Immediate press reaction within the hour

- Researchers called up
- Media searches were conducted
- Editor of *Journal of Agricultural and Food Chemistry* contacted

Information officers and researches decided, as planned not to go public before the press conference

-> information vacuum

Background (8)

Press conference April 24th:

- 150 journalists show up
- Live coverage by Swedish television
- Biggest press conference since assassination of Olof Palme in 1986

Background (9)

Dr Busk (Director for Research at SLV) is quoted saying:

"I have been in this field for 30 years and I have never seen anything like this before. The discovery that acrylamide is formed during the preparation of food, and at high levels, is new knowledge. It may now be possible to explain some of the cases of cancer caused by food." (Mason 2002)

Yet SLV refuses to withdraw any products with high levels of acrylamide and states more research is needed.

Background (10)

Public want to know what food they should eat and what not to eat

Q & A sessions are set up by media for anxious individuals to have their questions answered

Background (11)

25th - 26th April critic of press conference levels off

- **Prime Minister Goran Persson** takes the view:

  " I try to avoid potato chips not because they are dangerous but because it is very fatty." and "I have no reason to be critical of how the agency acted."

- **WHO** calls in an expert consultation

Background (12)

Media coverage led to high public awareness

Table 1. Swedish public awareness to the acrylamide scare

	3 weeks	4 weeks
Aware of the term acrylamide (unaided)	86%	92%
Aided awareness	95%	96%

Background (13)

The alarm also had significant impact on the associations between certain food stuffs and acrylamide

Table 2. Public awareness of association between certain food stuffs and acrylamide

• Spontaneously claim potato chips contain acrylamide	76	82
• Spontaneously claim French fries contain acrylamide	63	63
• Spontaneously claim fried potatoes contain acrylamide	47	43

Background (14)

However, the high awareness did not lead to changes in eating habits

Table 3. Will you change your eating habits based on what you have heard?

I will not change my eating habits	69
I will eat less of these products	27
Other	4

Recommendations (1)

1

Always know whom one is communicating to

2

Once the receiver audience has been identified one must craft the message to be communicated in an appropriate fashion.

3

Do not amplify risk/events that are by their very nature attenuated.

Recommendations (2)

4

Do not involve too many scientific bodies in crafting communication messages.

5

Related to above one has to be clear what bodies have what roles:

Who should be the lead actor in the communication, SLV or SU?

Recommendations (3)

6

Avoid communicating uncertainties as much as possible.

7

Avoid all forms of company "brand" communication when one is unsure of the findings.

8

Avoid making enemies with the media.

Recommendations (4)

9

Understand the importance of trust when communicating to stakeholders and the public.

10

Do not conduct media briefings, press conferences etc., if one has little experience in doing this.

11

In ideal circumstances pretest press invitation and rehearse press conference.

12

Avoid risk communication vacuums where ever possible.

Issues raised from this example (1)

How should the regulators/policy makers have handled the acrylamide scare?

- Amplifying a risk that to its very nature should be attenuated leads to greater public distrust

Should regulators/policy makers communicate uncertainty?

- Too much uncertainty can cause public confusion
- Should scientists communicate uncertainty behind closed doors?
- Is this realistic?

Issues raised from this example (1)

- How should regulators/policy makers respond to risk-risk tradeoffs?

- Regulators communication on acrylamide led people to consider giving up eating bread-what are the health effects of that?

- How should the regulators/policy makers have handled the media?

- How should regulators/policy makers ensure a balanced approach to regulation?

Conclusions (1)

- There is a clear need for assessors, regulators and communicators to operate as a team in managing emerging food issues;

- Never amplify risks that are in their very nature attenuated. Amplifying such risks will lead to public confusion, and in many cases public and media backlash;

Conclusions (2)

- In any communication message focus on the aspects that are certain and avoid those that are uncertain. Communicating uncertainty, particularly when it is not necessary, affects the outcome of how the message being communicated will be interpreted by the receiver

- Finally, risk and science communication is never easy. There is no such thing as a "one size fits all" solution to any communication problem.