# Understanding Public Perception of Risk: Report of an Environment Agency Workshop

**Project Record**
**P5-040/PR**

# UNDERSTANDING PUBLIC PERCEPTION OF RISK: REPORT OF AN ENVIRONMENT AGENCY WORKSHOP

R&D Project Record: P5-040/PR1

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Internal:       Released to Regions
External:       Released to Public Domain

**Statement of Use**
This Project Record contains copies of the presentational material used at the Environment Agency workshop on understanding public perception of risk. To read an interpretation of the presentational slides, please read the corresponding R&D Technical Report P5-040/TR1. This Project Record will only be used for reference and is a record of what was presented at the workshop. It will be of primary use to the delegates who attended the event.

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**Environment Agency's Project Manager**

The Environment Agency's Project Manager was Samantha Fishwick, Chemicals Policy

## Project Record Summary

This Project Record relates to R&D Technical Report (P5-040/TR1) which is a summary of a workshop held for senior Environment Agency staff in April 2001. The workshop aimed to raise awareness about current understanding of how the public perceive risk and the implications for risk communication in recognition of the need to develop a risk communication strategy as part of a wider Agency communications strategy. Staff (35) from Environmental Protection; Environmental Strategy; Corporate Affairs; Regional Public Relations; the National Centres for Risk Analysis and Options Appraisal, Groundwater and Contaminated Land, Ecotoxicology and Hazardous Substances, and the National Flood Warning Centre attended. The workshop was run by Professor Judith Petts and Dr Jacqueline Homan of the University of Birmingham and Professor Glynis Breakwell and Dr Julie Barnett of the University of Surrey.

Specific aims of the workshop were to:

- Examine the key findings from the risk perception literature which explain how and why people respond to risk issues

- Consider the issue of trust and its impact on the public's receipt and interpretation of Agency risk communication compared to other sources of information

- Examine how people make sense of risk issues from a range of media (drawing particularly on most recent research on the social amplification of risk)

- Consider the critical points in the life-cycle of a risk issue which significantly change the perceptions of risk (also drawing particularly on most recent research on the social amplification of risk)

- Question how the Agency can analyse media and public responses to a risk/hazard to predict future impacts

- Consider how the Agency can be more proactive in effectively managing its reputation through communication

- Debate how the Agency should apply all of this understanding in allocating resources for effective decision making

This Project Record provides copies of the overheads that were used for the presentations given with regard to recent developments in the risk perception and communication field. Four presentations were given and the summary text of these can be found in the accompanying R&D Technical Report in Sections 4, 5, 6 and 7.

The themes of the presentations are:

- **How and why do people perceive things to be risky?**

- **Trust and the importance of locality**

- **The impact of the social amplification of risk on risk communication**

- **Social amplification of risk – the media and the public**

# How and why do people perceive things to be risky?

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How and Why Do People Perceive Things to be Risky

Professor Glynis Breakwell

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Hazard Attributes Affecting Risk Perception (1)

- Involuntary exposure
- Lack of personal control over outcome
- Uncertainty about probability or consequences of exposure
- Lack of personal experience with the hazard (fear of the unknown)
- Difficulty in imagining risk exposure
- Effects of exposure delayed in time

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Hazard Attributes Affecting Risk Perception (2)

- Genetic effects of exposure (future generations)
- Infrequent but catastrophic accidents (kill size)
- Benefits not highly visible
- Benefits go to others (inequity)
- Human rather than natural causes

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FIGURE ILLUSTRATING A RANGE OF HAZARDS- FROM
SMOKING TO GENETIC ENGINEERING- AND HOW THEY ARE
TYPICALLY PERCEIVED BASED ON DEGREE OF FAMILIARITY,
DEGREE OF FEAR



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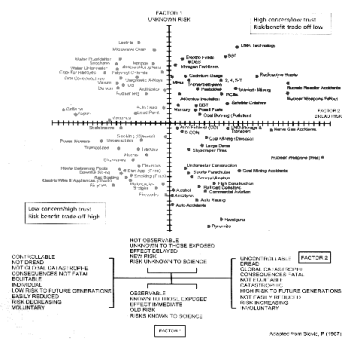
Judgement Under Uncertainty

Representativeness

Availability

Adjustment & Anchoring

Schemas & Mental Models

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Individual Differences

Sensation seeking

Neuroticism, extraversion and psychoticism

Impulsivity

Venturesomeness

Experience of risk

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Value expectancy models

Attributional biases - unrealistic optimism

Self-efficacy

Anticipated regret

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The Significance of Identification with Place

Identification with place influences perception
of environmental hazards:
• e.g. cleanliness of beaches
• e.g. cyclones
• e.g. earthquakes

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The Significance of Wider Beliefs
and Cultural Values

The "grid/group" approach and worldviews

The role of social belief systems

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## "Grid/Group" Approach

| | High Rule Control | Low Rule Control |
|---|---|---|
| **High Group Control** | Hierarchists: accept risks as long as an authority says to do so | Egalitarians/Sectarians: accentuate risks of societal change |
| **Low Group Control** | Fatalists: do not seek risk but accept it if it arises | Individualists: seek risk |

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## Social Beliefs



Competence → ICI (0.54)

ICI → Risk (-0.95)

Competence → Risk (0.48)

Competence → Concern (-0.34)

Green Values → Concern (0.44)

Concern → Risk (0.39)
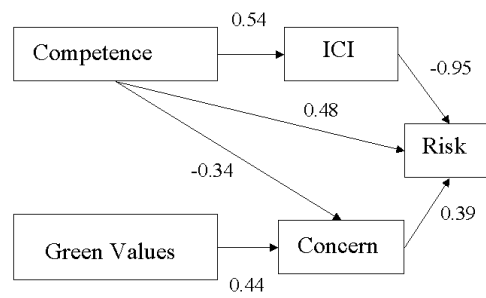
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## Stability and Instability

Risk estimates do change

Resilience and barriers to change

Capacity to assimilate risk information

Capacity to ignore risk information -Fear effects on information processing

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## Implications for Risk Communication

Individual

Sub-group

Societal

# Trust and the importance of locality

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## Trust and the Importance of Context/Locality

Professor Judith Petts

The University of Birmingham

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## Defining Trust

- Competency             Knowledge; expertise
- Consistency            Predictability of arguments
                         and behaviour
- Commitment             To obligations and responsibilities
- Independence           Lack of bias
- Openness               Transparency
- Empathy                Empathy; caring; dedication; acting in '
                         my interests'

(Renn & Levine, 1991; Kasperson et al, 1992)

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## Characteristics of the Dimensions

- Shifts focus to institutional issues
- Groups and individuals perceive the dimensions differently in different situations
- Competence is rarely the most significant dimension
- Independence very important - lack of bias
- Empathy very important in contentious situations

## Waste Information Providers
## & Perceived Objectivity

High

•Independent Experts

•Advisory Groups

TRUST

•Individual Officers

•Local Authority

•Industry

•Regulator

Low

PERCEIVED OBJECTIVITY                    High

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# Trust More Important than Risk

- General agreement  - people's perceptions of
  risk are influenced/shaped more by social
  relations and perceived trustworthiness of the
  risk managers than by the physical risks or
  potential harm

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# Trust has Implications for...

- Perceptions of risk
- Who people require information from
- How people respond to information and its
  providers
- How fair people perceive a decision to be
- What control people demand over risky
  activities

# How do different people score?

- Many surveys which have attempted to identify who people trust in particular circumstances
- Doctors and academics score more highly - but high profile failings can undermine this as can allegiances
- Action groups - not trusted more highly than others
- Govt departments can score highly in certain circumstances- politicians rarely
- But stated level of trust may fail to match actual behaviour

# Decline in Trust in Scientific Expertise

- Reliance on scientific credentials is unlikely to work - experts no longer gain instant trust
- Too many examples of experts getting it wrong
- No known ways of generating instant trust
- Actions speak louder than words - institutional 'body language'

# Is Lack of Trust a Problem?

- Some argue that distrust is healthy in modern society - it is what keeps regulators and industry on their toes
- Rebuilding trust is very difficult - takes time
- Important therefore not to lose it!
- But trust will not be regained simply by better communication - have to move to participation

# The Importance of Context

- Research into specific issues - e.g. incinerator siting; contaminated land; major hazard plant - all stress the importance of local context in terms of perceptions
- Where people live, how they live their lives and what they experience are important in forming perceptions of risk
- Generic communication can be undermined by context
- What information is right in one location may not be appropriate in another

# Social Context

- Shared experience of neighbourhood
- Personal experience - e.g. of ill-health
- Sense of local quality of life
- Local identity - industrial, rural, etc
- Stigma
- Perceptions of local risk - may not follow local administrative or risk assessment boundaries

# Context of the Issue

- Nature of the decision to be made
- Whether decision has been made without public consultation
- Previous accidents, events, etc relating to same issue
- Experience of the institution locally
- Other unrelated issues which seem to have similar characteristics

# Example of Incineration

- There are common perceptions of risk - i.e. relating to health from emissions, traffic, loss of amenity, potential accidents and failure to control
- These will vary in strength according to experience from existing plant; exposure to sources of information; local health, traffic etc issues; trust in operator & regulator locally; openness of the decision process

# The impact of the social amplification of risk on risk communication

*Social Amplification of Risk: The Media and the Public*
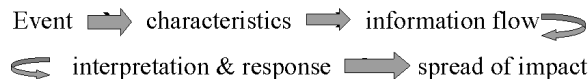University of Birmingham,
Surrey University, Loughborough University

## Social Amplification of Risk:
## The Media and the Public

Judith Petts, University of Birmingham

Tom Horlick Jones, University of Surrey

Graham Murdock, Loughborough University

Diana Hargreaves, University of Surrey;

Shelley McLachlan, Loughborough University

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## Social Amplification of Risk (SARF)

- Metaphor - linking psychological, cultural & social approaches to risk perceptions

- Based on communications theory

- Seeking to understand why some hazards become a focus of concern & others not

Event ➡ characteristics ➡ information flow ⤵

⬅ interpretation & response ➡ spread of impact

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## Basis of Hypothesis - SARF's Weaknesses

Media Role

- Simplistic in identifying media as a significant risk amplifier
- Media viewed as a homogeneous, decontextualised transmitter
- Focus on written media - neglects images
- Focus on media as an information system - neglects entertainment
- Presents public as passive absorbers of media
- UK media very different to US - daily newspapers nationally available; public sector broadcasting - BBC

## Research Components

- Media survey for 6 months to track how risk issues are presented - based on 21 risk-related headline words (safety; dangers; cancer; accident etc)
- Case study survey of media reporting of 6 risk issues - GM food; the Millennium Bug; air quality and health; radon; rail accidents; + Ladbroke Grove crash
- Focus groups - 18 (145 people) - what do people worry about; where do they get information; perceptions of relative merit of different sources
- TV groups - 9 (36 people) - to explore how people respond to TV reporting (news; documentaries; chat shows) of risk issues - Ladbroke Grove and GM food
- Interviews - 17 people - to explore how individuals use newspapers and how they respond to reporting in papers which they read regularly
- Interviews with press officers in government departments/agencies

## Defining "the media"

- Study tried to respond to the heterogeneous and highly stratified nature of the UK media - compare the BBC with Channel 5, the Times with the Sun
- Focus on newspapers and TV news, current affairs and documentaries
- Newspapers - 10 daily and 9 Sunday papers. Broadsheet (Times, Telegraph, Guardian, Financial Times, Independent); mid-market (Daily Mail, Daily Express); tabloid (Sun, Mirror, Star)
- TV - main terrestrial evening news broadcasts plus current affairs programmes such as Horizon, Panorama, Dispatches
- Missing elements - radio; popular magazines; drama; soaps etc

## Focus Groups "Worries"

1   Personal
2   Money
3   Crime/crime prevention; Transport
5   Society (distribution of wealth; racism; morals, etc)
6   Young people/children
7   Environment/pollution; Work
9   Policy
10  Education
11  Consumer issues; food; media

# 'Worries'

• Personal and social

• Varies by gender

• Varies with culture

• None of case study risk issues made the top ten apart from air pollution. Radon and train crashes not mentioned at all

# Making Sense of Risk Issues

• People interrogate personal and direct experience, typically using narrative and 'lay logic'

• People actively search for explanations of different but related phenomena which they observe (GM food and BSE; air pollution, asthma & traffic)

• For some risk issues mediated information important - e.g. Millennium Bug for others not important - e.g. air pollution

• People rely on their inherent trust in sources of information

# Risk Signatures

• Different issues possess different signatures

• No simple relationship between scientific accounts and lay accounts

• Air pollution - grounded in experience - credible and threatening

• GM food - possible threat but no consensus over competing expert views

• Neither Millennium Bug nor train crashes truly credible to people as tangible threats

| Risks | Effects | Concerns | Secrecy | Moral Issues |
|-------|---------|----------|---------|--------------|
| Air pollution | Health & Amenity | Families | Cover-up | Few |
| GM Foods | Unspecified but emotive | Families | Cover-up | Concern |
| Millennium Bug | Possible food shortages & loss of services | Little concern | Hyped by media & companies | None |
| Train accidents | Threat of death & injury | Little concern | Corporate secrecy | None |
| Radon | Unknown | None | Why weren't we told | Who's responsible? |

## Media Reporting

• Media shifting to address people as consumers

• Popularist orientation of certain sections of press

• Importance of local news

• Dearth of news presented by specialists

• Tendency to personalisation

• Frequent assignment of responsibility to risk managers

• Powerful use of visual images

• Preference for reporting of issues already familiar and anchoring of them in deep-seated fears and anxieties

## Who is Quoted?

• BBC significantly more likely to quote politicians and members of government than any other television

• The Sun significantly more likely to be quoting members of the public than any other paper

• Government & scientists more likely to be quoted in The Telegraph

• NGOs more likely to be quoted in the Guardian

# Who is Interviewed?

- BBC , Channel 5, local news - significantly more likely to interview members of the public
- BBC more likely to interview politicians & members of government than other news
- Channel 5 more likely to interview NGOs

# Imagery, Framing & Anchoring

- Majority of risk stories on television and in newspapers is accompanied by at least one image
- Tabloids - focus on victims
- Stories often connected with past familiar issues - hence BSE & GM Foods
- Extensive use of linguistic tags (Frankenstein Foods), play on words - e.g. vegetation, and idealised images - e.g. the English rural idol

## Lay Public and the Media - 1

- Media can only amplify or attenuate if resonate with existing public mood
- Not dealing with a message system but a symbolic system
- Visual communication important
- The public are not passive recipients - they are 'media savvy'
- Plural media consumers
- Responses to media refined through everyday experience
- Media more important where no direct or personal experience

## Lay Public and the Media - 2

• Media consumption fragmented, snatched therefore pictures and images are important

• Lower socio-economic groups suspicious of 'the suits'

• Preferences for particular presenters

• Believe that television more regulated than the newspapers

• Not passive absorbers but collectors 'to make up their own minds'

## Best Practice Risk Communication - 1

• Design-based and user-centred

• Ongoing mapping & monitoring of public concerns

• Appreciation of multiple audiences

• Proactive use of the popularist tools of the media

• Proactive use of symbols and images

• Use of language of the reader/viewer

• Strategies for working with local media

## Best Practice Risk Communication - 2

• Work with key presenters

• Training of communicators to understand diversity of the media - a single press release for everyone is useless

• Engage in programme formats which allow for lay testimonies

• Show science in action

• Media-specific communications plans

# Social amplification of risk – the media and the public

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The Impact of the Social Amplification of Risk on
Risk Communication

Professor Glynis Breakwell
Dr Julie Barnett

Professor Ray Kemp
Dr Ragnar Lofstedt
Christina Glaser

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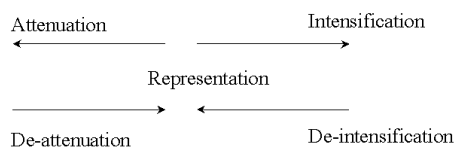Project components (1)

Five case studies
- BSE
- AIDS
- the 'Pill scare'
- siting of an NGL facility
- MOX at Sellafield

Developed the layering method to describe and
evaluate risk amplification patterns

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Amplification processes

Attenuation                        Intensification
←——————        ——————→

Representation
——————→    ←——————

De-attenuation                        De-intensification

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### Project components (2)

**Decision making in the media**

Media often considered to
➡ equate hazard with risk
➡ sensationalise
➡ cause inappropriate public concern

Important to understand how decisions are made about reporting 'risk stories'

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### Method: Decision making in the media

In-depth one to one interviews with journalists and editors*

Sample:

| | |
|---|---|
| 5 (2) | National daily newspapers - both broadsheet and tabloid |
| 3 (1) | National weekly newspapers/journals |
| 1 | Regional newspapers |
| 4 (4) | Specialist magazines (normally monthlies) |
| 2 | BBC radio - national and regional |
| 2 (1) | Commercial radio |
| 4 (2) | National/international television - BBC, ITV, SKY |
| 3 (1) | Freelance |

*Figures in brackets show number of interviewees that were editors

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### Risk is not a category of story but 'scare stories' are

Risk stories no different to other stories

Characteristics of 'scare stories'

Why do the media run scare stories?

Can organisations avoid being the subject of a 'scare story'?

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### The significance of 'infotainment'

What is infotainment?

Circumstances under which effort to provide infotainment declines

Influencing the media focus on infotainment

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### The importance of individual journalists and editors

Latitude of decision making

Importance of 'hazard templates'

Value of anticipating template use

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### The significance of interactions between media

Importance of scoops vs. bandwagon effect

Scope for heightening intensification or encouraging attenuation

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Absence of investigative journalism and information hunger

Alternatives to investigative journalism

Perceptions of Government public relations activities

Filling the vacuum

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Differences between elements of the media

Creating visual information

Speed to air

Value systems

National vs. local

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The role of pressure groups

Shaping coverage of risk issues

Source of information for the media

Agenda setting

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## Uncertainty and controversy

Perceived motives for communicating uncertainty

Uncertainty linked to cover up

Uncertainty + controversy = newsworthiness

Improving performance in controversies

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## Unexpected tales

The media are diverse but coherent

They have insight into roles and relationships

Information vacuums will be filled

Knowing individuals is valuable

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## Best practice risk communication (1)

➡Avoid accidental creation of a scare story

➡Be prepared to participate in controversies

➡Manage information provision appropriately

➡Be aware of the templates and hazard links that public and media use

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## Best practice risk communication (2)

➡Learn from pressure groups

➡Fill media vacuum with expert, relevant and speedy information

➡Deal with uncertainty appropriately