Health, Risk & Society

ISSN: 1369-8575 (Print) 1469-8331 (Online) Journal homepage: http://www.tandfonline.com/loi/chrs20

Critical trust: understanding lay perceptions of health and safety risk regulation

John Walls Dr , Nick Pidgeon , Andrew Weyman & Tom Horlick-Jones

To cite this article: John Walls Dr , Nick Pidgeon , Andrew Weyman & Tom Horlick-Jones (2004) Critical trust: understanding lay perceptions of health and safety risk regulation, Health, Risk & Society, 6:2, 133-150, DOI: 10.1080/1369857042000219788

To link to this article: http://dx.doi.org/10.1080/1369857042000219788

Published online: 14 Oct 2010.

HEALTH, RISK & SOCIETY, VOL. 6, NO. 2, JUNE 2004

Taylor & Francis
healthsciences

Critical trust: understanding lay perceptions of health and safety risk regulation

JOHN WALLS[a], NICK PIDGEON[a], ANDREW WEYMAN[b] & TOM HORLICK-JONES[c]

Abstract *The binary opposition of trusting or not trusting is inadequate to understand the often ambiguous and contradictory ideas people possess about risk regulators, particularly when knowledge and experience of such institutions is limited. The paper reports qualitative and quantitative data from a major study of public perceptions (*n = *30 focus groups) of UK risk regulators. We compare the complex and widely different 'trust profiles' of two regulatory organisations which are institutionally related (the Health and Safety Executive and the Railways Inspectorate) but very separate in the minds of our participants. The paper develops the notion of critical trust to interrogate the various ways in which people make sense of such organisations, as well as discussing the modes of reasoning that people deploy. The paper argues that views of participants are the outcome of a reconciliation of diverse perceptions concerning the role of the organisation, structural factors and the nature of the regulated risk.*

Key words: risk perception, critical trust, Health and Safety regulation

Introduction

Official concern about public perceptions of risk regulatory bodies has increased in Britain over the last decade, particularly in relation to the profile that these organisations present with respect to their 'target populations', or to the lay public at large. These developments appear to be motivated by a belief that 'low trust' impacts negatively upon public uptake of risk communication material (e.g. Cabinet Office Strategy Unit 2002; ILGRA 1998; Löfstedt and Horlick-Jones 1999). They also reflect a view that a 'crisis of governance' has followed major risk regulatory failures such as the BSE 'mad-cow' affair (House of Lords Science and Technology Committee 2000; Phillips *et al.* 2000). In empirical terms, however, there is only scant evidence about the detailed *patterns* of lay perceptions of specific agencies and departments of state. The data presented here are based upon a project designed to investigate trust in the Health and Safety Executive (HSE), the body responsible for regulation of workplace hazards in the UK, their impacts on workers and, where appropriate,

[a]Centre for Environmental Risk, School of Environmental Sciences, University of East Anglia, UK; [b]Ergonomics and Work Psychology, Health & Safety Laboratory, Sheffield, UK; [c]School of Social Sciences, University of Cardiff, Wales.
Address correspondence to: Dr John Walls, Centre for Environmental Risk, School of Environmental Sciences, University of East Anglia, Norwich NR4 7TJ, UK. E-mail: j.walls@uea.ac.uk

ISSN 1369–8575 print/ISSN 1469-8331 online
DOI: 10.1080/1369857042000219788

the general public.[1] The HSE has, in turn, a set of specialist sub-divisions (the Nuclear Installations Inspectorate, Her Majesty's Railways Inspectorate) who are responsible for specific industrial sectors. As part of the process of tapping into public perceptions of the HSE, we were interested in assessing public perception of, and trust in the HSE as a risk regulator, in comparison with other institutions of government and the HSE divisions whose remit included forms of risk regulation (for a full description of the research see Pidgeon *et al.* 2003). In the present paper we develop a comparative analysis, drawing upon the data derived from a series of 30 focus groups, in order to interrogate the reasoning strategies deployed by participants when discussing trust in both the HSE and the Railways Inspectorate.

Theoretical background

The role of trust in mediating risk perception has been acknowledged for a number of years now. One view is that trust plays a critical role in driving risk perceptions and responses. In particular: that distrust heightens lay public concerns and responses to risk messages; contributes to the unacceptability of proposals for activities perceived as risky; stimulates social and political actions to reduce or avoid risks; leads to questioning of the work and decisions of risk regulators and authorities; and promotes the selective use of information sources (Cvetkovich and Löfstedt 1999; Flynn *et al.* 1992; Kasperson *et al.* 1992; Petts 1998; Pidgeon *et al.* 1992; Slovic 1993; Wynne 1980).[2]

The empirical evidence seems to suggest that trust in organisations carrying out risk management, as well as some sources of risk-related information, is frequently limited, and that this is particularly true of 'government' and 'business'. Part of the problem has been said to relate to the apparent insensitivity, or unwillingness, of government officials and experts to address the public's anxieties and concerns (Hance *et al.* 1987). However, until very recently very few studies appear to make any distinction between the legislator and the institutions/agencies of state who might hold the principal roles in risk management. In one of the few studies to do so, using a questionnaire study relating to radiation hazards, Hunt *et al.* (1999) found that a specific state institution, the Department of Health, attained significantly higher levels of public trust in comparison to 'Government Scientists', 'Local Authorities', or 'Government Ministers'. Similarly, in a survey of public attitudes conducted during the height of the 2001 UK foot and mouth outbreak, Poortinga *et al.* (2004) found that the Ministry of Agriculture were accorded significantly higher average trust ratings than 'Government Ministers' or 'The European Union'. They also report that the Food Standards Agency (a relatively new UK regulatory body set up in the wake of the BSE crisis) was awarded similar levels of (high) trust to Consumer and Environmental Groups. Petts (1998), using qualitative interviews, concludes that different agencies elicit different expectations about 'trustworthy' activities, and accordingly require different 'trust enhancing' strategies. However her fieldwork was conducted with stakeholders with a specific interest in waste management rather than the 'public' *per se*. What this all suggests is that there may well be differences in the cultural profiles of various government risk regulators as distinctive arms of government, and the current research seeks to extend the available research base in this respect.

1. In addition to the current research, HSE has been particularly proactive in the UK in sponsoring a number of recent studies investigating public risk perceptions and risk communication, as well as contributing to the growing international interest in the role of public trust in risk regulation (Breakwell and Barnett 2003; Chilton *et al.* 2002; Cox *et al.* 2003; Petts *et al.* 2001; Pidgeon 1992; Pidgeon *et al.* 2003; TRUSTNET 2002; Walker *et al.* 1998).

2. Trust is also conceived of as a means of coping with ignorance and/or uncertainty about the potential future actions of others (Gambetta 2000).

A number of authors having highlighted the potential salience of specific variables that might influence trust: perceived openness; competence; objectivity; fairness; consistency; independence and care/altruism (e.g. Johnson 1999; Petts 1998; Renn and Levine 1991). These variables, by necessity, relate not only to immediate impressions of individuals, institutions and their communication media, but also to understandings of their past performance (see e.g. the discussion of institutional 'recreancy' by Freudenburg 2003). Earle and Cvetkovich (1995) also make the important observation that where information is sparse about actual performance or a risk issue it may be similarity of social values which is used as a basis for trust judgements. The salient value similarity (SVS) approach of Earle and Cvetkovich has been applied successfully in a number of empirical studies (e.g., Earle and Cvetkovich 1997, 1999; Siegrist *et al.* 2000; Siegrist *et al.* 2001). Beyond these variables lie more subtle, but potentially no less important, nuanced understandings of the actions of organisations, these equating to what some authors have referred to as 'corporate body language' (Otway and Wynne 1989).[3]

In the current research, we wished to move away from a theoretical framing of trust as a simple 'commodity', or attribute that attaches to an organisation or individual, toward a situation whereby trust is provisionally conceptualised as multi-faceted, potentially dynamic, and dependent upon a range of contextual variables. Such a perspective transcends a monolithic view of trust, which tends to portray social agents as essentially passive agents, towards one which opens up the possibility of developing an understanding of trust that recognises people's capacity for active sense-making (Horlick-Jones *et al.* 2003; Irwin *et al.* 1999; Simmons and Walker, 2003).

A dynamic perspective also points to the possibility of understanding how the trustworthiness of organisations depends upon factors other than their structural characteristics. Rather, we need to be able to explain how institutions may actively engage in work to enhance their perceived trustworthiness. It follows from the theorisation of the role of 'access points' that institutional 'facework' (Giddens 1991; Goffman 1967; Molotch and Boden 1994) may be achieved via direct *or* mediated experiences, and that perceiving agents must make sense of a range of possibly contradictory evidence for a judgement of trustworthiness or otherwise to be made.

This picture is further complicated by recent research by Petts and colleagues which suggests that risk issues themselves possess distinct capacities to engender specific patterns of lay understandings (Horlick-Jones 2002, 2003; Petts *et al.* 2001). The researchers label these patterns 'risk signatures', expressed in terms of a number of factors including: the specificity of adverse effects; concern about potential effects on others, particularly family; concern about perceived secrecy or cover-ups by risk management institutions; together with distrust in these institutions because of perceived vested interests, and whether the issue presented moral questions and considerations.[4] Many such judgements about institutions are likely to be constructed in an absence of ready or clear information and knowledge about the regulators concerned, or where people are uncertain as to the regulator's precise role. Recent findings (admittedly limited) highlight the relative *invisibility* of many government agencies and departments and the consequent scope for a wide range of understandings of their roles and responsibilities amongst the public. For example, respondents in the Hunt *et al.* (1999) survey expressed similar (low) levels of awareness of both the National Radiological Protection Board

3. However, O'Neill has suggested that many verbalised statements of mistrust actually reflect a climate of suspicion (O'Neill 2002). O'Neill suggests that there is scant evidence that the so called crisis of trust is a response to greater untrustworthiness on the part of public officials; rather a new mood of suspicion prevails, partly fed by the media.

4. The exact nature in the governance of risk will depend upon sector, issue and departmental intervention (Leroy and van Tatenhove 2000).

and the 'British Radiation Safety Agency', the latter being a purely fictitious institution. Simultaneously, respondents expressed moderate levels of trust in both organisations. The authors speculate that in these cases ratings were most likely made upon the basis of inferences about what the names signify, rather than any definite knowledge of the organisations themselves.

In general terms it might be expected that the public visibility of risk regulating agencies is routinely low, simply because the majority of their activity involves interaction with businesses and other institutions rather than members of the public *per se*. On the other hand, the potential for them to emerge from relative obscurity and enter the public consciousness is aptly demonstrated in times of crisis, as was the case with the former British Ministry of Agriculture Fisheries and Food in dealing with the BSE and foot and mouth crises. Few studies have focused explicitly upon how people reason and make judgements in the absence of firm knowledge about a risk regulator, how they come to interpretations and opinions about institutions when self-acknowledged experience of them is slight, what fills in the gaps and what influence this has on stated trust? The present study was designed to address some of these issues.

Turning to the agency of specific interest here, the Health and Safety Executive, previous research had suggested that trust in the HSE is issue dependent; being highest where the organisation is perceived to hold appropriate technical expertise and believed to be prepared to act in the public interest (Walker *et al.* 1998). Second, differences exist between groups within society depending upon such things as direct personal experience with HSE activities (i.e. in the workplace) or upon socio-economic status. Walker *et al.* (1998) report that trust in major accident controls and regulation may be lowest amongst the exposed public groups who feel disempowered with regard to the risk and its consequences. The research also seemed to suggest that independence from government and industry was a critical factor, alongside a feeling that even though the structures for effective regulation might be in place adequate funding may often be absent. When links between regulators and government were made explicit in group discussions, people began to express concern about the exact nature of that relationship (Walker *et al.* 1998).

The current research was thus conceived as an investigation of some of these key conceptual issues, by tapping into lay perceptions and reasonings about the HSE as a risk regulator, particularly the often ambiguous and seemingly contradictory sentiments expressed by research participants, and in a way that is sensitive to the level and qualities of the understandings participants actually hold.

Methodology

Approach

The study uses a mixed-methods (but primarily qualitative) design, adopting focus groups as the main method of data collection. In common with a number of recent studies (Grove-White *et al.*, 1997; Horlick-Jones *et al.* 2003; Petts *et al.* 2001; Walker *et al.* 1998) a qualitative approach was utilised as a means to elicit and observe talk about risk and trust issues. Focus groups involve informal, facilitated, discussion. They were initially developed in commercial market research, but are now regarded as an important component of the methodological tool kit used by social science researchers. (Barbour and Kitzinger 1999; Bloor 2001; Morgan 1993). The principal advantage of this approach is that it provides a rich and detailed insight into how participants frame, understand and debate the issues of interest *as seen in participants' own terms* (through a grounded qualitative interpretation based upon the analysis of transcript data). At the same time it

provides a basis for the development of more quantified, questionnaire, approaches to eliciting trust judgements.

Sampling and Protocol

The research team facilitated 30 focus groups ($n = 201$ participants) over the period September 2000 – June 2001. Each group comprised 6 – 8 members of the voting age public, and the full sample contained a spread of all ages, gender and social class. Groups were typically stratified into those containing members of social classes ABC and those members of social classes CDE.[5] Groups were conducted in six main areas of the Great Britain; East Anglia (Norwich), the North East Midlands (Chesterfield, Rotherham), West Midlands (Birmingham), South East (Reading), Scotland (Edinburgh) and Wales (Builth Wells, Cardiff, Monmouth).

The full focus group protocol is reported in detail in Pidgeon *et al.* (2003). Very broadly the talk moved through a number of topics, starting with general safety and health concerns. Immediately after these initial discussions participants filled in a trust rating questionnaire for a number of institutions and discussed their responses. Then discussion of health and safety issues at work and responsibility for its regulation was prompted. Participants were asked to reflect and discuss the ranking scores they awarded the institutions on the questionnaire. The groups concluded with more detailed discussion about the HSE, its organisational structure and remit. The focus groups were tape recorded, fully transcribed and then subject to thematic analysis, while the data from the trust rating questionnaire is reproduced below in Table 1.

Qualitative data analysis

The main analysis we report here—that of the corpus of qualitative data from the 30 groups—entailed a grounded theory approach (Glaser and Strauss 1967; Pidgeon and Henwood, 2004). In particular, constant comparison was undertaken between and within transcripts (and linking related categories together in code networks where appropriate) to reveal patterns and categories of reasoning displayed in the conversations between participants. Negative cases were also actively sought to contradict emergent assumptions. In this way, a structured

Table 1. *Average trust ratings*

Organisation	Mean	SD
Health and Safety Executive	2.50	0.78
Environmental groups e.g. Greenpeace	2.30	0.91
Consumer groups e.g. Consumers Association	2.27	0.77
Food Standards Agency	2.27	0.74
Local Environmental Health Officers	2.27	0.70
Department of Health	2.23	0.79
Environment Agency	2.13	0.63
National Farmers Union	2.00	0.73
Ministry of Agriculture Fisheries & Food	1.99	0.72
Local council	1.82	0.61
Confederation of British Industry	1.80	0.60
Railways Inspectorate	1.74	0.70
Government ministers	1.68	0.59

Scale values: 1—Trust very little; 2—Trust to some extent; 3—Trust a great deal; 4—Trust almost entirely.

5. As an incentive to attend, a payment of £20 was made to each participant.

account of the complexities inherent in the data is systematically built up. In grounded theory the process of abstraction from raw data to higher order conceptual categories is disciplined, but not determined by the requirement that categories and codes should throughout 'fit' (or provide a recognisable description of: see Turner 1981) the data they refer to.

Results

Previous research which had examined public perceptions of major accident hazards suggested that public trust in the HSE was fundamentally positive, in that it was perceived to be independent of the legislature and seen to be acting in the public interest, although some concerns were expressed about whether or not it received adequate level of funding to be effective (Walker *et al.* 1998). The research data reported here broadly supports and deepens such findings. However, it also suggests that people may possess critical sentiments about an agency's effectiveness whilst still awarding it a relatively high trust ranking. Such thinking we analyse in terms of the concept of 'critical trust'.

Tentative knowledge and limited awareness

While most participants were able to demonstrate an awareness of the HSE, as we had expected knowledge of the HSE's role and remit was for many slight. Few participants reported having had direct experience of or contact with the organisation, although many were able to demonstrate an awareness derived from secondary sources; i.e. the media, social and/or familial networks.

> M4: *I'm not that familiar, I am familiar that they exist, but as to actually what they do I don't know* (Norwich ABC)

> F10: *are they a government organisation? I mean is it under Parliament or something'? They draw the lines, examine what's gone wrong if there is a very serious problem or accident perhaps, you know that's what I'd expect them to do but I wouldn't say I know* (Norwich ABC)

> F85: *The Health and Safety Executive, it's not a spin off from a trade union is it?*

> M109: *No*

> F85: *It's just the word Executive gives that impression . . . do they do the COSHH stuff?* (Monmouth ABC)

In the main, expressed knowledge of the HSE was limited to *functional* aspects of activity in the workplace, with inspection verbalised as the most recognised role for the HSE across all of the focus groups. Overall, the dominant set of beliefs, or 'mental model', was anchored in the three interrelated operational aspects of *inspection, investigation* and *enforcement* referenced in particular (although not exclusively) to an industrial safety context.

> M106: *My knowledge of them is not good, I am aware that they are responsible for rules and regulations in public buildings and places like that. And work places, whatever, I have never had any dealings or any directly or indirectly with the work that they do* (Reading ABC)

> M87: *Well in places where I have worked they have come in and sorted something, or when I have seen them on the news talking to somebody they have just kind of, usually because it is accidents* (Cardiff CDE)

We can best characterize knowledge of the HSE, amongst our participants at least, as tentative.

The HSE's trust profile: altruism

As described above, participants in the focus groups were asked to complete a simple questionnaire which asked them to rate their trust in a range of agencies and interest groups, the results of which can be seen below in Table 1. As we had expected, and mirroring the findings of Poortinga *et al*. (2004), 'Government Ministers' average trust rating was very low on the scale of 1 (very little trust) through to 4 (trust almost entirely) while 'Consumer' and 'Environmental' Organisations relatively high. Compared to these the Health and Safety Executive gained the highest average trust rating (see also Irwin *et al*. 1996).

The qualitative data indicated that the expressed levels of trust in the HSE were related primarily to perceptions that the agency is motivated to act in the *public interest*. In particular, the agency is perceived as performing a fundamentally *altruistic* role (in raising awareness of safety issues, in activities demonstrating care for ordinary people in the workplace, and as a fundamental orientation relatively free from other pressures), a public profile which appears not dissimilar to that of the UK National Health Service. These perceptions of performing in an altruistic way were evident in 26 out of 30 of the focus groups and constituted the most frequently verbalised perception of the HSE. For example:

> F11: *They are not just looking after themselves, they are looking to protect you* (Chesterfield ABC)

> M17: *Well they definitely raise the awareness for everyone* (Chesterfield CDE)

Allied with this were a range of inferences made directly from the agency's name.

> M3: *Well because they should be, their name suggests that they should be there looking after our interests and should have the public's welfare at heart, whether they actually do or not, I'm not a hundred percent sure and I doubt if anybody is really sure* (Norwich ABC)

In the extracts below we can *also* see how trust, in the context of tentative knowledge, can be an outcome of a presumption and 'hope' in effective regulatory action for institutions perceived to act in the public interest, rather than a firm basis in knowledge and/or experience:[6]

> F26: *I trust them a great deal because hopefully wherever you are working such as with machinery you would hope that somebody like that would pass it. And I have worked in places where people have had fingers chopped off, and it has been down to malfunctioned machinery.*

> Moderator: *Whereabouts was that?*

> F26: *Just across there in the chicken factory, and I would hope that people like that would put safety first* (Rotherham CDE)

Moreover the absence of bad news about the agency can also positively impact trust:

6. Gambetta has suggested that when we are *forced* to rely on someone else, it is more a matter of hope than trust—at least in the first instance, when we have no evidence either way, this is linked to the process of wishful thinking and the need to reduce cognitive dissonance (Gambetta 2000).

M101: *I would like to put entirely because I have never heard of anything go wrong* (Monmouth ABC)

Participants also drew on a perception of improvement in specific industries over the years, to suggest the agency has engendered a welcome change in safety practises as we see below:

M106: *I have put a great deal down, I think in the building area they have done an awful lot of good works, there were some rotten practices going on and still do, but nothing like that. I mean hard hats are virtually everywhere now you see them on sites, and that wouldn't have happened in the long truth of it*

Moderator: *Did you work in that?*

M106: *No I just see it going on around me all the time, and I work in a hospital where they are forever building things*

M105: *The other nice thing about them is they quite often you see them taking people to court* (Reading ABC)

As a whole the data also indicate a sense of significant positive *affect*, attached to both the agency and its perceived role in the workplace, as exemplified by references to 'good works' or 'nice thing about them', a point to which we return in the discussion section.

Legitimacy of workplace risk regulation

The positive perception of the agency appeared to draw also upon seemingly broader cultural sentiments within the focus groups that state regulation of workplace health and safety could be regarded as a good thing. In particular, it was viewed as a necessary bulwark to constrain the potentially negative consequences of an unregulated market; the absence of state regulation of health and safety being seen as something that would increase the risks to both employees and the public.

M34: *Well at the end of the day the Health and Safety Executive has got to be a good thing, because I mean God Almighty knows what we might be faced with working with if they weren't there* (Rotherham CDE)

On the other hand, linkages between the HSE and the character of the elected Government were rarely made spontaneously by respondents. From this it might be concluded that issues of regulatory independence and autonomy have, at least to date, constituted a non-issue in respect to public perceptions of the HSE, this qualifying the finding from previous work which suggested that 'independence' was the driving factor in public reactions to the agency (Walker *et al.* 1998). The exact relationship between the HSE and the legislature had not been thought through in the context of participants' everyday life.

The reconciliation and negotiation of critical sentiments

While overall perceptions of the HSE were mainly positive, and primarily related to its perceived altruistic role, concerns transparently did not relate to the competence of staff, but to levels of resources made available to the organisation and the effects this may have for successful regulation.

In addition, an expressed concern, principally by those from manual/industrial backgrounds, related to the HSE's approach to workplace inspection. Principally, the belief that inspection visits tend to be prearranged with company owners/managers. This was viewed as a significant weakness, and a less desirable approach than unannounced visits. Those with experience of manual work often called for more frequent workplace inspections by the HSE. Concerns expressed regarding levels of regulation, and associated 'burden on businesses' were in the main restricted to the self-employed and owners/managers of small businesses. However, a desire for the regulation of large scale enterprises and big businesses was almost universally expressed.

Participants who verbalised these opinions did reconcile these critical sentiments with the overwhelmingly positive perceptions outlined above, suggesting that stated trust can be the outcome of an active reconciliation of potentially contradictory sentiments and ideas about a risk regulator. Participants' sense of such critical sentiments were not sufficient to overwhelm the positive impressions of the HSE based on its perceived altruistic role, but functioned to counteract a naïve trust. Moreover, these critical comments almost never became the central focus of group discussions about the HSE but were often the result of individual experience or ad hoc situated reasoning. Trust emerges in these accounts as multidimensional, as a product of a reconciliation of ideas and knowledges and impressions, so that the perceived limited effectiveness of the HSE can coexist with a high degree of relative trust, where it appears that it is based on an organisation's perceived intention to act in the public interest as effectively as possible, tempered by a pragmatic and 'common sense' observation about the role 'government' plays, for instance:

> M12: . . . *I trust a great deal, because they are aware of what they are doing you know and they are respected, I feel that within the limits that they are given, they have created their own competence as far as we can tell. But I mean they are all subject to whims and fashions of government*
>
> Moderator: *So they are there to protect the health and safety of people?*
>
> M12: *Yes the profits and things like that totally are of no interest to them. Their thing is just health and safety isn't it, as the name implies. And having seen it work like I say in the mining industry, studying legislation and that sort of thing. As far as I can tell, they dot every I and cross every T really* (Chesterfield CDE)

We can see in the comments made by participant [M12] above that whilst awarding the HSE a trust ranking of a 'great deal' he also recognizes possible limits to effectiveness through government interference. Within CDE groups in particular, the HSE was perceived as the only 'official' bulwark against untrammelled market forces in an era (in the UK at least) of relatively low trade union membership. As we saw in the quote above, participants tended to deploy the heuristic discourse of 'safety vs. profit', in concert with inferences about the name, to form judgments about the agency (e.g. that it must be acting in the public interest), also creating an additional positive affect for the organisation. This discourse can be counter posed against the relatively high level of stated distrust in corporations, who only claim to be concerned with employee health and safety in the workplace.

Participants were prone to negotiate and reconcile ideas and sentiments that are in tension with each other, as we see below, in awarding the HSE relatively high trust:

> M28: *I think people do have trust in them, but I do think that it puts people off a bit, like you said they have one or two funny little regulations in there* (Rotherham CDE)

As we noted above participants in a number of the groups also recognised that organisational effectiveness can be compromised by inadequate funding arrangements which do not lie with the organisation itself:

> F62: *Well they supposedly go round in my case all the different halls or function rooms and check them out for that. But I mean they tell you, you need this and that but they never seem to materialise. It is always the lack of public funds* (Edinburgh CDE)

However this perceived lack of funding was in the main linked directly to government not the HSE:

> M2: *Well there's always underfunding which is a good way to control* M3: *Yes, that's partly what I was talking about political influence possible on the HSE with allocation of resources, you know it's a form of control isn't it?* (Norwich ABC)

Furthermore, when discussing the link between the HSE and government, [M3] suggested that:

> M3: *Well, in so far as government departments are subject to political regulation, they're not free to be effective as they might be, shall we say* (Norwich ABC)

When discussing the HSE, the participants who expressed tentative knowledge (the vast majority) often made sense of the organisation by recourse to argumentative repertoires (Walker *et al*. 1998) as well as lay heuristics discussed above. For example, notice how [F77] in the extract below, uses the analogy of management authority relationships with workers ('taking orders') to think about the possible relationship between the HSE and government in the absence of firm knowledge:

> F77: *It is like when we have to take orders from management and they have got to take orders from the ministers so they are at the top, that is what I would say looking at this. Whatever they say comes down to us, it comes from up there really I would imagine, the majority of it* (Cardiff ABC)

This data reinforces previous work that suggests there is always a 'common sense' doubt in people's minds about any agency or department of state, with some suggesting that mistrust is thus a logical response (Barber 1983), particularly in situations characterised by uncertainty or ignorance. However, in the accounts examined here there is no automatic or conscious desire to 'mistrust' risk regulators. Rather a recognition that trusting (for an organisation to be effective, or to act in the public interest) must be tempered with a pragmatic and common sense acceptance of government influence, or other explanations of inferred or experienced failures to fully meet fiduciary responsibilities. Trust in these accounts is not a zero sum game, it is not straightforwardly won or lost, but in group conversation the result of an active negotiation of a range of ideas and impressions. A pragmatic acceptance based on what common sense tells people about 'how things work' will be deployed to make sense of a range of issues, for example, the desire for a risk regulator not to be connected to political parties is advocated, but a pragmatic recognition that in practice this is difficult to achieve, particularly given the 'common sense' attitude that politicians attempt to control and manipulate events to their own partisan advantage.

It was recognised by some participants that external control over levels of funding for the HSE activities, direct pressure from industry, or even an implicit connection with political

structures within government could potentially serve to undermine a relationship that might be (on paper and in all good faith) seen as properly independent from the HSE's own perspective. However, such perceptions of the HSE were further complicated as a limited number of participants within the groups suggested that official organisations can 'go too far' in regulating risks, leading some to suggest that risk regulators exercise more 'common sense'. This seemed to express concerns that institutions can potentially make everyday tasks at home and work more difficult than they necessarily might be.

Nonetheless, the overall reconciliation of these impressions and opinions for the HSE was on balance supportive of the organisation whilst acknowledging real world constraints on effectiveness, based on participants' experiences. For the vast majority of participants who expressed the concerns noted above they were not the principal drivers of their perception and attitudes toward the HSE, but functioned to qualify their (relatively high) stated trust.

Moreover, one could also suggest that for the vast majority of participants it would not have made common sense to argue against 'health and safety', even though a number of concerns are raised about excessive 'petty' regulations and criticisms from business people about burdensome regulations in a globalised economy. Issues to do with health and safety are seen to be non-party political and not subject to partisan changes.[7]

HM Railways Inspectorate

The Railways Inspectorate is a constituent division within the Health and Safety Executive itself, the main function of which is to regulate risks on the rail network. The research design allows us to explore whether the Railways Inspectorate share the (generally positive) trust profile of its constituent body. On the basis of the quantitative evidence illustrated above in Table 1 above, the Railways Inspectorate received a much lower average trust rating relative to the HSE itself. Indeed only Government Ministers gained a lower average trust rating the Railways Inspectorate. What then might explain this disparity?

One possible answer lies in the almost *complete invisibility* of the Railways Inspectorate in the minds of our participants (unlike with the HSE itself—where the investigation, inspection and enforcement model provides at least one template for constructing beliefs). Very few expressed any clear view of what the Railways Inspectorate was and what it did. However, invisibility *per se* is unlikely to be the sole reason for the low trust ratings. We have seen that through the active deployment of a number of reasoning strategies, many participants awarded the HSE itself the highest trust rating whilst denying direct knowledge of the organisation.

In order to begin to explain these findings we must first understand the wider social context within which such sentiments emerge. Concerns over rail safety have proliferated in the UK over the period 1995–2003, following a number of high profile rail accidents, including most recently those at Southall, Ladbroke Grove, Hatfield and Potters Bar. The numbers of resulting casualties have been tragic (the largest number of fatalities was 31 at Ladbroke Grove, West London in 1999 when two trains collided), but are still relatively small in comparison with, for example, road traffic accident deaths during the same period. What is clear is that the considerable media and political attention generated by these incidents has impacted upon discourses about rail safety—in a process which can be described as 'social amplification' (see Pidgeon *et al.* 2003)—and has prompted the establishment of a number of formal inquiries into their causation (e.g. Cullen 2000 2001).

7. This is reinforced by the fact that the focus groups concluded by asking participants what HSE should do more of, these were in order of preference; an increase in resources for HSE, more public announcements by HSE, proportionate increase in fines (based on wealth of a company), randomly yearly inspections and to retain its non-party political status.

The focus group discussions revealed a set of beliefs involving not only an apparent raft of high profile accidents on the rail network, but also a perceived poor quality of overall service and infrastructure coupled with adverse media coverage (see also Chilton *et al.* 2002; Petts *et al.* 2001). Overall, a negative perception of the UK rail system as a whole emerged, together with the various organisations that comprise it.[8] Perceptions of the regulator thus seemed to suffer by association with these myriad problems (mostly out of its direct control) affecting the industry it regulates. That is, the organisation was implicated by participants in the problems that were seen to plague the UK rail industry itself.

For example, when asked of the trust rating given to the Railways Inspectorate, some participants stated that:

> M100: *Yes I have very little [trust]*
>
> F79: *I have put the same because of the more recent problems they have had*
>
> M100: *I am thinking of them being a body overseeing Railtrack but it is not, that is not what that is? Right?* (Monmouth ABC)

Somewhat more caustically:

> F32: *They are stuck in a dark room somewhere aren't they?* (Birmingham CDE)

The almost complete invisibility of the Railways Inspectorate meant that participants could only reason and make inferences about the agency based on what they did know: that is, perceptions of the problems seen to beset the rail network, and Railways Inspectorate's presumed role within it. The result was a near universal negative assessment of the efficiency of the Railways Inspectorate, which was not based on knowledge of the remit or actual activities of the Railways Inspectorate but on a presumption that they must be associated in some way with current problems or, given the problems, a concomitant lack of 'Inspection' given its name. In addition to this, very few people out of the 201 taking part in our groups knew that the Railways Inspectorate was a division of the HSE.

As noted also in previous research (Petts *et al.* 2001), we found that people often expressed concerns over safety through analogy and anecdotes about personal experiences with other issues, such as overcrowding, delays to services and excessive cost of travel. Indeed, people often had more to say about such poor conditions on the rail network than issues surrounding safety *per se*. We would argue that it is against this context, of widespread negative personal experiences and beliefs about the railways in the UK, that trust in this particular regulator is being judged. Either because of perceived regulatory failure, or because of confusion with other organisations within the UK rail structure, such as Railtrack.[9] For example:

> M86: *Yes [trust] very little*
>
> F71: *I don't see that there has been any lessons not many lessons learnt from all the train crashes. They haven't inspired me with any confidence at all* (Cardiff CDE)

8. The privatisation of the UK railway industry in the mid-1990s saw extensive corporate fragmentation.

9. Railtrack was the privatised company set up in the mid-1990s to own and operate the UK railway system infrastructure (track, signalling etc.), and thus attracted much of the direct public criticism of the system. In 2002 they were once more brought under direct public control under the banner of Network Rail.

Furthermore:

> M89: *Well we have recently had all these train crashes*
>
> F76: *It is very haphazard*
>
> M89: *Well it should improve because of all these rail prices they do need confidence and that would go right through the system, and since they split it up, it has gone from bad to worse. It has got worse and everybody blaming each other, everybody having compensations for this and compensations for that, it is money for old rope. They are not concerned about safety at all*
>
> F76: *I think that that means very little trust* (Cardiff ABC)

Participants, particularly within the CDE groups, tended to use discussions about problems surrounding the recent privatisation of the UK rail network as a metonym to discuss issues such as 'fat cat' pay, again suggesting a 'safety vs. profit' discourse. People of course seek reasons and explanations for any perceived regulatory failure, and in order to do so they draw upon a diverse range of arguments and information culled from various sources. Interestingly, the few participants who did express relatively high knowledge of the Railways Inspectorate thought they did in fact try their best to be effective but were hampered by the few resources that central government makes available to them, precisely the same argument that was deployed by participants when discussing the effectiveness the HSE, although with widely different results.

> Moderator: *What about the Railways Inspectorate?*
>
> M20: *I trust them, but just let's say what they have said has been varied*
>
> F19: *Have you got shares in them?*
>
> M20: *Well no but the Railway Inspectorate is just an independent body, they are not responsible for Railtrack or anything, that is why I believe in them. Sometimes their fears are ignored, but as a body I trust them*
>
> M19: *Well I think they are doing quite a professional job, with decreasing resources available. But they have never had any real powers did they. But the HSE has actually got very powerful they have got some very powerful powers, and I happen to know that. But quite frankly they are so understaffed and their wage bill is paid by the Treasury. But they are understaffed totally understaffed and have been for years etc. and they just can't cope* (Norwich ABC)

This apparent invisibility of the Railways Inspectorate (and other government departments and agencies), raises a number of interesting questions, with implications for future policy regarding their profile. While relative invisibility might be considered desirable by some, on the grounds that it serves to reduce the potential for negative impressions to be formed, this is clearly not the case with the Railways Inspectorate, in fact quite the opposite. Where perceptions and understandings of government agencies and departments are vague and ill-formed, it may well be that such impressions are in fact quite susceptible to contingencies of events, for example to crises like high profile rail crashes, or the influence of visible factors (dirty trains) acting as symbols for a perceived deeper malaise (safety issues). Our data suggest that such factors do impact upon trust and that people, when trying to understand regulatory

activity, can and do make a range of presumptions about the behaviour of institutions of which they may know relatively little. Such inferences about organisations are one means by which people navigate an inherently uncertain and complex world, and we should not forget too that it is through blaming that people try to hold others to account (Douglas 1992; Hood 2002).

Discussion: critical trust

This study has demonstrated that there exist remarkably wide differences in the levels and patterns of trust deployed by lay publics towards different government regulatory organisations. Our data have allowed us to compare in particular detail the 'trust profile' of the HSE with that of one of its constituent divisions, Her Majesty's Railways Inspectorate. Despite often displaying an absence of firm knowledge about *either* organisation, we found that participants (drawn from a very wide cross-section of the British public) were able to take a reasoned view on what they regarded as appropriate behaviour for each, often framed as whether they were seen to promote 'the public interest'. These processes of sense-making appear to draw upon socially-held interpretive resources, also reflecting broader political-cultural sentiments, concerning, for example, what is seen to be the proper role of risk regulators in society.

Our findings also suggest that solely quantitative studies which merely tap into public attitudes toward 'government' may erroneously collapse beliefs about, and trust in, elected politicians with rather different understandings about separate government agencies and departments. People employ a range of rationales when assessing government and its agencies, and we have seen how modes of reasoning and cultural sentiments, in the absence of firm knowledge of the institution itself, shape how people draw inferences about the institution.

In coming to a judgement on the trustworthiness of these institutions, people engaged in processes of interrogation of knowledge which utilised shared sense-making devices. Such devices included allusions to consequences, perceptions of the risk object, reasoning by analogy, and the use of heuristics. In this respect, we found rather similar processes of reasoning to those described elsewhere as 'argumentative repertoires' (Walker *et al.* 1998) and 'lay logics' (Petts *et al.* 2001). As we have seen, the precise outcome of these processes of reconciliation is specific to the institution in question, and is very different for the two organisations studied in detail here. Hence, arguments implying regulatory inefficiency by the HSE tended to be outweighed by a belief that it was acting 'in the public interest'. Conversely, the existence of high profile train crashes, and other evidence of poor service, created the perception that the corresponding regulatory function was *not* being carried out effectively in relation to railway safety. In this way, blame becomes distributed by association across all of the institutions involved in the rail system, and is, in some senses, a reasonable and logical response to what is perceived to be an over-complicated and confusing rail structure. Patterns of apportioning blame are, we feel, another important factor in determining the levels of stated trust in institutions (also Freudenburg 2003).

Participants do not deploy a formal logic in assessing whether or not they trust risk regulators. Rather, people use what information is necessary to 'get on' in the world, something that we may term 'practical knowledge'. Nor do people necessarily search for consistency in information: rather they negotiate and accept ambiguity. In the context of everyday life people frequently deploy heuristics to make sense of the world around them. Indeed, the data seem to suggest that stated trust/distrust in institutions is a negotiated combination of weakly formulated sentiments—with distinctive affective components—alongside direct or mediated knowledge. People will reason by analogy and use such lay heuristics in the absence of firm (or publicly validated) knowledge. It is worth noting here that the operation of affect is seen as an increasingly important part of the way in which lay

perceptions of risk issues are constructed (Finucane *et al.* 2000; Langford 2002; Slovic *et al.* 2002). Our current results are also congruent with other emerging evidence (Metlay 1999; Poortinga and Pidgeon 2003) that judgements of trust in institutions can similarly be characterised in terms of a constellation of meanings which have their own affective signification. They also suggest that further research needs to be done regarding the way institutions (rather than just risks) are perceived in affective terms, and how this relates both to an institution's own historical record of regulatory competence as well as to beliefs about the risk domain and institutions being regulated.

Turning to the nature of those beliefs, in a study of chemical industry hazards within Greater Manchester, Irwin *et al.* (1996) reported high levels of local scepticism in industry (as trustworthy sources of information) coupled with a pragmatic reliance upon the same source (as the only party who can do anything to reduce hazards). They also note that 'this critical evaluation does not solely apply to local industry—all other sources are likely to (and, indeed do undergo) similar scrutiny' (1996: p. 57). Our findings underline this claim. A certain level of scepticism, often discussed as common sense, pervaded much of the discourse in the current focus groups, leading us to propose the concept of *critical trust* as an organising principle. Critical trust lies on a continuum between outright scepticism (rejection) and uncritical emotional acceptance (Figure 1). Such a concept attempts to reconcile the actual reliance by the public on institutions whilst simultaneously possessing a critical attitude toward the effectiveness, 'motivations' or independence of the agency in question.

Verbalisations of trust or distrust are rarely made at the extremes, or discussed in a one dimensional manner. Rather, as we have seen people can negotiate an array of impressions and experiences to arrive at a temporary 'fix' for the context they find themselves in, and it is the eventual weight which people give to these factors that accounts for their statements about trust. In our analysis the concept of critical trust reflects the way in which participants reason and talk about risk regulators. Throughout the data there was little discussion of naïve or blind trust. Rather lay discourses tended to contain elements of critical reflection as part of a negotiated balance of scepticism and reliance, and in which a range of contextual variables impacted a participant's stated attitude. Our coding schema shows that discussion of limiting factors about the HSE were evident in 23 out of a total of 30 focus groups[10] whilst discussions of the HSE's altruistic role occurred in 26 out of the 30 groups. The outcome of the active negotiation of these opposing sentiments we have characterised as reflecting critical trust.

However it should be noted that the articulation of factors which were seen to limit effectiveness almost never provided individuals or the group itself with an overriding pivot with which to make sense of the HSE. Moreover there was rarely group consensus over the limiting factors (given the tentative knowledge of participants) unlike discussions on the perceived altruistic role of the HSE.

In the case of the HSE the balance between these two appears currently favourable, while with the Railways Inspectorate it appears unfavourable. Cook has suggested 'regulatory institutions are necessary to protect citizens from the worst effects of misplaced trust' (2001: p. xii). Perceptions of institutions which themselves act in the public interest may serve also to fulfil this role. The concept of critical trust also alerts us to the fact that the affective properties of beliefs about institutions are not in themselves unidimensional—but complex and embedded in discourse.

As a final comment, this study has underlined the importance, noted by Hunt *et al.* (1999) of the naming or 'branding' of institutions where self-reported knowledge levels are relatively low. Invisibility is—by our account—a two-edged sword. In the case of 'Health and Safety

10. Included within the NVvivo code for 'Critical trust' are the following critical/limiting factors: Petty regulation; Too reactive/Prior Notice; Under funded. For a more thorough discussion see Pidgeon *et al.* (2003).

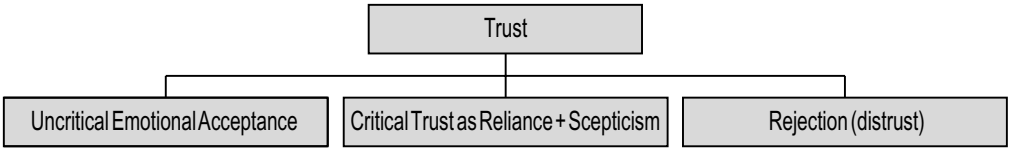

Figure 1. *Continuum of trust.*

Executive', relative invisibility might be considered desirable, on the grounds that it serves to reduce the potential for negative associations to be formed and impact upon their existing trust profile. However, the invisibility in the case of 'Railways Inspectorate' may serve to obscure actions which have the potential to *enhance* trust, if positive achievements by HMRI go unnoticed, or are associated with another agency. What is clear is that such beliefs may be 'more susceptible to contingency', be this in the form of a regulatory crises, such as rail crashes, BSE, media hyperbole or more commonly a combination of factors. Future research work needs to assess whether, and how, stated trust in some institutions becomes more firmly established in public discourse than others.

Acknowledgements

The research upon which this paper is based was supported by a grant No. Contract Ref: 4071/R64.062 from the UK Health and Safety Executive. However, the opinions expressed are those of the authors alone and do not necessarily represent the views of the project's sponsors. We are happy to acknowledge the enthusiastic support of Dr Jean Le Guen and Dr Laurence Golob of the HSE during the course of the research. Support during the period of writing has also been provided by the Leverhulme Trust as part of the *Understanding Risk* programme.

References

BARBER, B. (1983) *The Logic and Limits of Trust*. New Brunswick, Rutgers University Press.

BARBOUR, R.R.S. and KITZINGER, J. (Eds) (1999) *Developing Focus Group Research: Politics, Theory and Practice*. (London, Sage).

BLOOR, M. (2001) *Focus Groups in Social Research*. (London, Sage).

BREAKWELL, G. and BARNETT, J. (2003) Social amplification of risk and the layering method in: N.F. PIDGEON, R.E. KASPERSON and P. SLOVIC (Eds) *The Social Amplification of Risk*, pp. 80–101 (Cambridge, Cambridge University Press).

CABINET OFFICE STRATEGY UNIT (2002) *Risk: Improving Government's Capability to Handle Risk and Uncertainty*. (London, HMSO).

CHILTON, S., COVEY, J., HOPKINS, L., JONES-LEE, M., LOOMES, G., PIDGEON, N.F. and SPENCER, A. (2002) Public perceptions of risk and preference-based values of safety, *Journal of Risk and Uncertainty*, 25, pp. 211–232.

COOK, K. (2001) Trust in Society, in: COOK, K (Ed) *Trust in Society*, pp. xi–xxviii (New York, Russell Sage Foundation).

COX, P., NIEWÖHNER, J., PIDGEON, N.F., GERRARD, S., FISCHHOFF, B. and RILEY, D. (2003) The use of mental models in chemical risk protection: developing a generic workplace methodology, *Risk Analysis*, 23, pp. 311–324.

CVETKOVICH, G.T. and LÖFSTEDT, R. (Eds) (1999) *Social Trust and the Management of Risk*. (London, Earthscan).

CULLEN (2000) *The Ladbroke Grove Rail Inquiry: Part 1*. (Norwich, HMSO).

CULLEN (2001) *The Ladbroke Grove Rail Inquiry: Part 2*. (Norwich, HMSO).

DOUGLAS, M. (1992) *Risk and Blame*. (London, Routledge).

EARLE, T.C. and CVETKOVICH, G.T. (1995) *Social Trust: Towards a Cosmopolitan Society*. (London, Praeger).

EARLE, T.C. and CVETKOVICH, G.T. (1997) Culture, cosmopolitanism, and risk management, *Risk Analysis*, 17, pp. 55–65.

EARLE, T.C. and CVETKOVICH, G.T. (1999) Social trust and culture in risk management, in: G.T. CVETKOVICH & R.E. LÖFSTEDT (Eds) *Social Trust and the Management of Risk*, pp 9–21 (London, Earthscan).

FINUCANE, M.L., ALHAKAMI, A.S., SLOVIC, P. and JOHNSON, S.M. (2000) The affect heuristic in the judgement of risks and benefits, *Journal of Behavioral Decision Making*, 13, pp. 1–17.

FLYNN, J., BURNS, W., MERTZ, C.K. and SLOVIC, P. (1992) Trust as a determinant of opposition to a high-level radioactive waste repository: analysis of a structural model, *Risk Analysis*, 12, pp. 417–430.

FREUDENBURG, W.R. (2003) Institutional failure and the organizational amplification of risks, in: N.F. PIDGEON, R.E. KASPERSON and P. SLOVIC (Eds) *The Social Amplification of Risk*, pp. 102–121 (Cambridge, Cambridge University Press).

GAMBETTA, D. (2000) Can We Trust Trust?, in: GAMBETTA, DIEGO (Ed.) *Trust: Making and Breaking Cooperative Relations*, electronic edition, Department of Sociology, University of Oxford, pp. 213–237, chapter 13, < http://www.sociology.ox.ac.uk/papers/ gambetta213–237.pdf >.

GIDDENS, A. (1991) *Modernity and Self Identity*, (Cambridge, Polity Press).

GLASER, B.G. and STRAUSS, A.L. (1967) *The Discovery of Grounded Theory*, (Chicago, Aldine).

GOFFMAN, E. (1967) *Interaction Ritual*, (New York, Pantheon).

GROVE-WHITE, R., MACNAGHTEN, P., MAYER, S. and WYNNE, B. (1997) *Uncertain World: Genetically Modified Organisms, Food and Public Attitudes in Britain*, (Lancaster University, CSEC).

HANCE, B., CHESS, C. and SANDMAN, P. (1987) *Improving Dialogue with Communities: A Risk Communication Manual for Government*, (Trenton, NJ, New Jersey Department of Environmental Protection).

HOOD, C. (2002) The Risk Game and the Blame Game, *Government and Opposition*, 37, pp. 15–37.

HORLICK-JONES, T. (2002) Arguments as interpretive and rhetorical devices in risk accounts—Colloquium on Explaining risk in health and social care, forming part of *Sociolinguistics Symposium* 14, Gent, Belgium, 5th April.

HORLICK-JONES, T. (2003) Managing risk and contingency: interaction and accounting behaviour, *Health, Risk & Society*, 5, pp. 221–228.

HORLICK-JONES, T., SIME, J. and PIDGEON, N.F. (2003) The social dynamics of risk perception: implications for risk communication research and practice, in: N.F. PIDGEON, R.E. KASPERSON and P. SLOVIC (Eds) *The Social Amplification of Risk*, pp. 262–285 (Cambridge, Cambridge University Press).

HOUSE OF LORDS COMMITTEE ON SCIENCE AND TECHNOLOGY (2000) *3rd Report on Science and Society*. HL Paper 38, February: Westminster.

HUNT, S., FREWER, L.J. and SHEPHERD, R. (1999) Public trust in sources of information about radiation risks in the UK, *Journal of Risk Research*, 2, pp. 167–180.

ILGRA (1998) *Risk Assessment and Risk Management: Improving Policy and Practice within Government Departments*, Second Report prepared by the Interdepartmental Liaison Group on Risk Assessment, Health and Safety Executive, London.

IRWIN, A., DALE, A. & SMITH, D. (1996) Science and Hell's kitchen: the local understanding of hazard issues, in: A. IRWIN and B. WYNNE (Eds) *Misunderstanding Science? The Public Reconstruction of Science and Technology*, pp. 47–64 (Cambridge, Cambridge University Press).

IRWIN, A., SIMMONS, P. and WALKER, G. (1999) Faulty environments and risk reasoning: the local understanding of industrial hazards, *Environment and Planning*, A31, pp. 1311–1326.

JOHNSON, B.B. (1999) Exploring dimensionality in the origins of hazard related trust, *Journal of Risk Research*, 2, pp. 325–354.

KASPERSON, R.E., GOLDING, D. and TULER, S. (1992) Social distrust as a factor in siting hazardous facilities and communicating risks, *Journal of Social Issues*, 48(4), pp. 161–187.

LANGFORD, I.H. (2002) An existential approach to risk perception, *Risk Analysis*, 22, pp. 101–120.

LEROY, P. and VAN TATENHOVE, J.V. (2000) Political modernization theory and environmental politics, in: G. SPAARGAREN *et al.* (Eds) *Environment and Global Modernity*, (London, Sage).

LÖFSTEDT, R.E. and HORLICK-JONES, T. (1999) Environmental regulation in the UK: politics, institutional change and public trust, in: G.T. CVETKOVICH and R.E. LÖFSTEDT (Eds) *Social Trust and the Management of Risk*, pp. 73–88 (London, Earthscan).

METLAY, D. (1999) Institutional trust and confidence: a journey into a conceptual quagmire, in: G.T. CVETKOVICH and R.E. LÖFSTEDT (Eds) *Social Trust and the Management of Risk* pp. 100–116 (London, Earthscan).

MOLOTCH, H.L. and BODEN, D. (1994) The Compulsion of Proximity, in: D. BODEN and R. FRIEDLAND (Eds) *Now Here: Space, Time and Modernity* (Berkeley CA, University of California Press).

MORGAN, D.L. (1993) *Focus Groups* (London, Sage).

O'NEILL, O. (2002) *A Question of Trust* (Cambridge, Cambridge University Press).

OTWAY, H. and WYNNE, B. (1989) Risk Communication: paradigm and paradox, *Risk Analysis*, 9, pp. 141–145.

PETTS, J. (1998) Trust and waste management information: expectation versus observation, *Journal of Risk Research*, 1, pp. 307–320.

PETTS, J., HORLICK-JONES, T. and MURDOCK, G. (2001) *Social Amplification of Risk: The Media and the Public* (Sudbury, HSE Books).

PHILLIPS, LORD, BRIDGEMAN, J. and FERGUSON-SMITH, M. (2000) *The Report of the Inquiry into BSE and Variant CJD in the UK* (London, The Stationery Office (www.bseinquiry.gov.uk)).

PIDGEON, N.F. and HENWOOD, K.L. (2004) Grounded theory, in: A. BRYMAN and M.L. HARDY (Eds) *Handbook of Data Analysis* (London, Sage).

PIDGEON, N.F., HOOD, C., JONES, D., TURNER, B. and GIBSON, R. (1992) Risk perception Ch 5 of *Risk: Analysis, Perception and Management – Report of a Royal Society Study Group*, pp. 89–134 (London, The Royal Society).

PIDGEON, N.F., KASPERSON, R.E. and SLOVIC, P. (2003) *The Social Amplification of Risk* (Cambridge, Cambridge University Press).

PIDGEON, N.F., WALLS, J., WEYMAN, A. and HORLICK-JONES, T. (2003) *Perceptions of and Trust in the Health and Safety Executive as a Risk Regulator*, (Research Report No 100, HSE Books).

POORTINGA, W., BICKERSTAFF, K., LANGFORD, I., NIEWÖHNER, J. and PIDGEON, N.F. (2004) The British 2001 foot and mouth crisis: A comparative study of public risk perceptions, trust and beliefs about government policy in two communities, *Journal of Risk Research*, 7, pp. 73–90.

POORTINGA, W. and PIDGEON, N.F. (2003) Exploring the dimensionality of trust in risk regulation submitted to *Risk Analysis*, 23, pp. 961–972.

RENN, O. and LEVINE, D. (1991) Credibility and trust in risk communication, in: R.E. KASPERSON and P.J.M. STALLEN (Eds) *Communicating Risks To The Public*, pp. 157–218 (Dordrecht, Kluwer Academic Press).

SIEGRIST, M., CVETKOVICH, G.T. and GUTSCHER, H. (2001) Shared values, social trust, and the perception of geographic cancer clusters, *Risk Analysis*, 21, pp. 1047–1053.

SIEGRIST, M., CVETKOVICH, G.T. and ROTH, C. (2000) Salient value similarity, social trust, and risk/benefit perception, *Risk Analysis*, 20, 353–362.

SIMMONS, P. and WALKER, G. (2003) Technological risk and sense of place: industrial encroachment on place values, in: Å. BOHÖLM and R. LÖFSTEDT (in press) *Contesting Local Environments* (London, Earthscan).

SLOVIC, P. (1993) Perceived risk, trust and democracy, *Risk Analysis*, 13, pp. 675–682.

SLOVIC, P., FINUCANE, M., PETERS, E. and MACGREGOR, D.G. (2002) The affect heuristic, in: T. GILOVICH, D. GRIFFIN and D. KAHNEMAN (Eds) *Heuristics and Biases: The Psychology of Intuitive Judgement*, pp. 397–420 (Cambridge, Cambridge University Press).

TRUSTNET (2002) A report of TRUSTNET on risk governance—lessons learned, *Journal of Risk Research*, 5, pp. 83–96.

TURNER, B.A. (1981) Some practical aspects of qualitative data analysis: one way of organising the cognitive processes associated with the generation of grounded theory, *Quality and Quantity*, 15, pp. 225–247.

WALKER, G., SIMMONS, P., IRWIN, A. and WYNNE, B. (1998) *Public Perception of Risks Associated with Major Accident Hazards* (London, HSE Books).

WYNNE, B. (1980) Technology, risk and participation: on the social treatment of uncertainty, in: J. CONRAD (Ed), *Society, Technology and Risk Assessment*, pp. 87–103 (New York, Academic Press).