New Perspectives on
Risk Communication

Uncertainty in a Complex Society
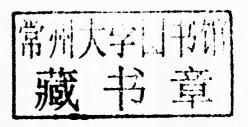
Edited by
Åsa Boholm

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New Perspectives on Risk Communication

That risk communication ranks high on the policymaking agenda is beyond discussion today. The field is a point of intersection of social communication, practical management and policy making. It covers such diverse activities as to inform and educate the public about risk, and risk management in order to influence attitudes and behaviour, to act in situations of emergency or crises, to aid in decision-making and to assist in conflict resolution. Communication has grown into a major concern in current risk governance based on network co-ordinated management of public affairs conducted by authorities and companies and is recognized as a key component in the government of risk. This is especially salient in policy fields relating to environmental planning and resource management, urban planning, chemical and food regulation, or infrastructure planning, development and maintenance. This book explores risk communication research with a focus on new theoretical perspectives, research findings, and applied goals. It reflects on a broad range of innovative theoretical perspectives, methodological approaches and empirical areas.

This book was previously published as a special issue of the *Journal of Risk Research*.

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Introduction

Risk communication is a point of intersection of social communication, practical management and policy-making. It covers such diverse activities as to inform and educate the public about risk, and risk management in order to influence attitudes and behaviour, to act in situations of emergency or crises, to aid in decision-making and to assist in conflict resolution. Communication has grown into a major concern in current risk governance based on network co-ordinated management of public affairs conducted by authorities and companies (Swyngedouw 2005) and is recognized as a key component in the government of risk (Hood, Rothstein, and Baldwin 2004). This is especially salient in policy fields relating to environmental planning and resource management, urban planning, chemical and food regulation, or infrastructure planning, development and maintenance. Polarization between the perceptions of lay publics on the one hand, and regulators, scientific experts and project proponents on the other has been a key issue in risk communication research (Petts and Brooks 2006). The field involves several distinctions, including that between expert and laymen, between those affected by decision and those who make the decisions, between conflict and co-operation, between facts and values, and between inclusion and exclusion in decision processes (for a recent overview of the field see Palencher and Heath 2007).

When the risk communication field was new, in the late 1960s and early 1970s, inspiration came from psychological research on how people assess risk information (Fischhoff 1995). It was shown that people when they make judgements about risk do not compute statistical information. They rely on heuristics – short cuts of information processing that simplify information – which often makes some risks more salient than others (Slovic 2000). The early rationale for risk communication research derived from the identified divide between the scientific way to assess risk (based on calculations of probability and estimated 'loss') and the lay people approach which tended to over- or underestimate risk. Hence risk communication initially adopted a pedagogical mission to teach the public about real risk so that they can act 'rationally' and make informed choices about what risks to take or not to take (see Leiss 1996, for an overview).

Over the last 15 to 20 years this technocratic approach has been gradually abandoned and today it is widely recognized that public values and preferences must be included in risk assessment and management (Renn 1998). Focus has moved to an emphasis on deliberation and dialogue processes, often with a normative element. Risk communication researchers have argued that communicators and audience must listen to each other and learn from one another (Petts 2001). Emphasis has shifted from education, framed as the monitoring of behaviour and attitude change induced from technocratic expertise, to consensus building and conflict resolution.

A dominant paradigm in risk communication has been a technical sender-receiver model stating that a message travels from a sender via some kind of channel

or medium to a receiver. A condition for communication is that a message can be packaged into a signal according to a code and that both sender and receiver use the same coding device for packaging and unpacking messages. Communication failure occurs when the message at the receiver's end differs significantly from the message dispatched from the sender either due to distortion from 'noise' during transmission or due to discrepant coding and decoding. The Shannon and Weaver (1949) model originally focused on communication in a technical sense, including machines, but the model has also been widely applied to social communication in human interaction. The social amplification of risk framework which has been influential in risk communication research (see Pidgeon, Kasperson, and Slovic 2003) can be seen as a development of the Shannon-Weaver model. The distortion of risk messages is attributed to 'noise' in the channelling of a risk signal by means of various socially induced attenuations or amplifications of the signal (for example by the media, industry, interest groups, academics, or stakeholders).

In risk communication studies Jürgen Habermas's (1985) normative theory of communicative rationality has been advocated as an alterative to the Shannon-Weaver model. Following Habermas, it has been argued that communication should be a dialogue between actors who are willing to listen to each other and who are open to change their minds and positions on a certain issue depending on how the deliberative process unfolds (see for example Renn 2004). By means of dialogue, pluralities of viewpoints, evaluations and prioritizations can be considered which promotes sensible decision-making on collective and often controversial matters imbued by risk and uncertainty. Trust between participants is a crucial condition for dialogue (Petts 2001). In reality however social communication does not adhere to this ideal. Human communication is part of social interaction and can be co-operative as well as conflictive depending on many things such as social conventions, expectations, social roles and identities, power relations, and interpretations of meanings (Allwood 1978).

That risk communication ranks high on the policy-making agenda is beyond discussion today. But what current developments can be discerned with regard to risk communication as a research field? What is the theoretical status and use of the sender-receiver model and the dialogue model for communication? Are there other theoretical trends, and in such case, what are they? In order to find answers to those questions a research conference with the title 'New perspectives on risk communication: uncertainty in a complex society' was arranged in Göteborg, Sweden in August–September 2006. The aim was to stimulate a broad inter-disciplinary discussion on risk communication as a research field with a focus on new theoretical perspectives, research findings, and applied goals.

The conference which was funded by the Swedish Research Council for Environment, Agricultural Sciences and Spatial Planning, the Swedish Emergency Management Agency, the Swedish Research Council, the School of Public Administration, Gothenburg University, and the Centre for Public Sector Research, Gothenburg University, attracted 90 participants from 14 countries representing 58 institutional affiliations. In all, 60 academic papers were presented. This special issue of the *Journal of Risk Research* includes a selection of these papers together with a viewpoint paper on risk communication with commentaries. This volume reflects the broad range of theoretical perspectives, methodological and

empirical foci that risk communication can incorporate and which makes it such a challenging and exciting field.

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Risk communication: world creation through collective learning under complex contingent conditions

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Risk communication, in the full sense of the word, is a discursive event in which speakers advance claims in the face of other responding participants before a general public. The presence of the public leads the participants to evaluate what happens in moral terms, with the result that their claims obtain an unavoidable normative quality and the discursive event takes the form of a public controversy which puts pressure on the participants to coordinate their disagreements. Proceeding from the assumption of socially distributed and shared cognition, the core argument of this paper is that risk communication, in the final analysis, is a cooperative learning process in and through which a communication community constructively arrives at a diagnostic interpretation of its common situation, the challenge it faces, and possible ways of dealing with it. Since such learning is possible only under conditions of relatively high complexity and contingency, however, its characteristic non-linear dynamic development makes uncertainty both many-sided and unavoidable. Often, however, such a collective achievement is put beyond reach, not simply because of complexity, contingency and uncertainty, but rather because the agents or groups involved follow one or other of a number of strategies which effectively block learning. Were the social sciences to contribute to the enhancement of risk communication (e.g., by facilitating value- and will-formation in the face of concrete problems), they should study the multi-levelled process of risk communication in the different communicative-discursive contexts within which it takes place with a view to clarifying the learning processes and potentials they harbour. Crucial here are the normative standards appealed to and the degree of legitimacy they allow. Not merely the management of uncertainty depends on this, but also the very world brought into being through risk communication.

Introduction

By 'risk communication', to begin with, I understand a broad societal phenomenon which is of a historically specific nature. It made its appearance in the late twentieth century risk society as part of the public discourse about risk and responsibility. And, in the meantime, it has become the characteristic feature, the signature as it were, of early twenty-first-century society. Historically, therefore, it is comparable to the 'poverty communication' of the nineteenth century and the 'violence communication' of the early modern period (Strydom 1999a, 1999b, 2000, 2002). This means that risk communication is a multi-levelled process that includes all communication, all the different streams or strands of communication, about the

central issue of our time: the issue of risk which has increased communication in the past number of decades to such an unprecedented degree.

An adequate understanding of risk communication is possible, therefore, only in the context of the risk society and, more specifically, the public discourse about risk and responsibility. What such contextualization allows one to do, is to appreciate the complexity of the conditions under which risk communication takes place and, hence, also the multi-levelled or differentiated nature of risk communication itself. The unfolding of this discourse during the second half of the twentieth century revealed the different streams or strands which go into the makeup of risk communication together with their respective vehicles (Strydom 2002). Whereas risk communication at the outset took the form of closed elite communication about the level of acceptable safety, it later progressively broadened into a form of public communication about the societal production and constitution of risk. In the 1950s, experts in the nuclear industry and regulators were both senders and receivers of risk communication. By the 1970s, however, social movement organizations have entered the ranks of risk communicators and started to address ordinary members of society. Since then, a significant proportion of the citizenry has become sufficiently concerned and involved to provide the spawning ground of both ideas and organizations feeding into risk communication.

It is remarkable that whereas the discursive logic generated by risk communication for decades sharply divided those affected, even leading to destructive conflict, it has given rise in the course of time to discursive means for the potential coordination of divergent orientations and actions. This suggests that risk communication, in the final analysis, is a cooperative learning process in and through which a communication community arrives at a constructive diagnostic interpretation of its common situation, the challenge it faces, and possible ways of dealing with it, thus creating a form of life for its members.

The social scientific study of risk communication, then, must take into account a number of things: the historically coloured societal conditions of complexity under which it emerged and takes place; the multi-levelled or differentiated nature of risk communication and the specific character of each of the forms it takes; and, finally, the relations among these different dimensions and the direction taken by their interrelation. To comply with this requirement, I devote this paper to a brief treatment of three topics: first, the complex conditions of risk communication as a multi-levelled process dealt with in terms of the discursive constitution and organization of contemporary society; secondly, considering the different forms of risk communication from the perspective of the learning processes they harbour such that it becomes possible to determine typical configurations of relations between them and the potential such relations unlock; and, finally, reflections on the status and role of normative claims and criteria in the coordination of the different levels of risk communication.

Complexity conditions of risk communication

The complexity of the conditions under which risk communication takes place in contemporary society, including the uncertainty accompanying it, is best clarified by considering the mode of constitution of society and the contribution communication makes to it.

Internal differentiation of the multi-levelled process of risk communication

Risk communication is a central component of the communicative-discursive process whereby society – in this case, the 'risk society' (Beck 1992) – is constituted and organized. This process of constitution is characterized by a non-linear social dynamic. The latter rests on the generation of variety by different sources and the selective combination of these contributions into a not fully anticipated or expected outcome. This non-linearity draws our attention to the multi-levelled and internally differentiated nature of risk communication, since the latter is a principal generative source of variety. It is also here that we find an important part of the explanation of the high degree of contingency and uncertainty surrounding risk communication.

Although it may be referring to one and the same object (i.e., a risk reality), risk communication draws on a 'culture of contradictions' (Eder 1993, 194) and is carried and promoted by socially or institutionally distinct agents. For example, state and corporate institutions, on the one hand, and associations, NGOs and social movements, on the other, while attending to a mutually recognized risk, embody different risk perception and risk communication cultures.[1] They thus entertain different communicative and informative intentions in accordance with their distinct modes of engagement with the world.[2] This provides a basis for introducing a fundamental distinction between institutional and civic risk communication. Related to these different forms of communication, and reinforcing them, are furthermore corresponding resonance structures[3] to which they are oriented and which make possible both responses to such communications and the forging of connections between them. These structures stretch from institutional resonance to extra-institutional or civil society resonance, both of which implicate cultural resonance. Later, more attention will be given to resonance, at which stage it will be necessary to refer also to public resonance.

From a cognitive perspective,[4] accordingly, risk communication can be said to involve a whole range of related yet different competing and even conflicting cognitive devices, from schemata, operations and scripts – that is, modes of classifying a given risk, making sense of and acting upon it – to cognitive formats for selecting, condensing and generalizing relevant information, such as for instance statistics, reports, political analysis and ordinary language. This competitive and potentially conflicting diversity is mirrored, on the other side, by the corresponding resonance structures. Considering these various dimensions, risk communication must thus be regarded in terms of a multi-levelled network in and through which incoming information about a given risk reality is processed in a socially distributed way. Occupying different positions, yet parallel to one another, each of the participating agents frames and communicates the mutually recognized risk in its own particular way and thereby activates resonance structures which allow responses in the form of feedback of one kind or another as well as connections to be forged. And in doing so, each of the participants makes a contribution to the way in which the risk becomes collectively classified, understood and dealt with. Risk communication is thus socially shared, creative cognition or a creative collective cognitive process whereby a community forms and shapes a world for itself.

In contradistinction to contemporary approaches (e.g., Clark 1998; Wertsch 1998) to distributed cognition in networks of situated action which, notwithstanding their commendable highlighting of differences and interdependencies, tend to flatten out different levels and make disjunctions, tensions, contradictions and conflicts unrecognizable, it is vital for an adequate understanding of risk communication not

only to stress complexity, but also to keep the concomitant contingency and uncertainty in mind. For this reason, it is imperative to acknowledge that risk communication is not simply a matter of representation, but at the same time also one of signification;[5] not simply one of communicating a position or content in keeping with a communicative and informative intention, but also of contextual references generating meanings going far beyond all intentions; not simply of problem-solving, but also of creating and bringing a world into being.[6]

This brings us to the context or larger intersubjective framework of risk communication – and that means something that duplicates complexity and multiplies uncertainty by imposing a communicatively and discursively mediated yet non-linear social dynamic on risk communication itself.

The public communicative context of risk communication

By attracting attention and providing a compelling object of reference, a risk opens a reflexive and communicative moment. Indeed, in conjunction with the schemata, operations and cognitive formats of those affected, risk gives rise to an intersubjective experiential context filled with concern and developing social relations. Individuals, organizations and institutions recognize the consequences of others' decisions and actions potentially affecting them, attribute those consequences to the agents involved, and relate to one another in an effort to collectively define the problem and decide how it could be dealt with. Risk and the cognitive structures[7] corresponding to it not only call forth communication, which in turn activates resonance structures, but also help to forge connections and intensify communication to the point that a larger communicative event takes place and overarching communicative structures come into operation, take effect and develop. Risk communication thus leads to the emergence of a discourse and the establishment of what is called the 'public sphere'.[8] In fact, each of the different forms of risk communication, together with its set of resonance structures, gives rise to a corresponding type of partial public sphere. At a higher level, a more embracing public sphere emerges at the intersection of the different forms of risk communication and resonance structures.

Depending on the conjunction of these strands of risk communication and resonance structures, the public sphere takes on different forms, with four basic types being distinguishable.[9]

Public sphere at rest

In Western type societies where certain fundamental arrangements are in place, the backdrop against which activated forms of public sphere appear could be conceived as a 'public sphere at rest' (Habermas 1996, 379).[10] It is characterized by a low level of constricted risk communication and hence a dearth of resonance. There is indeed an awareness of potential or real risks, but there is no cause for a systematic engagement in risk communication. However, once the perception and recognition of a risk reaches a critical threshold, once risk communication increases and flares up, any of a number of types of public spheres could emerge. This is illustrated by the historical unfolding of the discourse about risk and responsibility since the 1950s and '60s through four phases (Strydom 2002, 11–35) – from a restricted expert and regulator debate about risk

calculation and assessment, eventually to a fully fledged public discourse about the societal constitution of risk and its implications for the creation and organization of society.

Institutional public sphere

One active type is an elite or institutional public sphere. It is generated by a form of risk communication engaged in by experts such as for example managers, planners, economists, engineers, lawyers, psychologists and regulators representing institutions such as private firms and state administration. Business promotion and political campaigning aimed at mobilizing consumers, clients or the citizenry to support some service, product or decision would count as instances of such risk communication. Corresponding to this form of risk communication, institutional resonance is a characteristic structural feature of this type of public sphere. It makes its appearance through the response of such institutions to the perceived needs, demands and criticisms of consumers, clients and citizens.

Liberal or mass public sphere

Another type is the liberal or mass public sphere. The form of risk communication generating this public sphere is borne and promoted by active members of society who are typically organized into consumer groups, neighbourhood groups, voluntary associations, NGOs and social movement organizations. To such civic risk communication corresponds civil society resonance which feeds on the response of active associations, organizations and movements belonging to civil society to political or economic encroachments or problems their members or others they identify with face in their private life-worlds. Central to this type of public sphere, therefore, are political, social or cultural critique and different forms of protest.

Discursive public sphere

A final active type is a mediated or discursive public sphere. This type of public sphere is more general, but also more complex, than the preceding institutional and liberal or mass public spheres. Depending on the degree of development of its defining feature, viz. discursive mediation, it could take two related yet distinct forms.

In its first deficient form, it is characterized by the presence of both institutions and civil society. Connections are established and even elaborated between institutional risk communication and resonance, on the one hand, and civic risk communication and resonance, on the other. Although both are affected by sharing a situation in which they face each other, the differences between them are maintained. In some sense or another, institutional and civic risk communication stand over against one another and even get embroiled in contestation and conflict. None of the parties expects and therefore exerts itself to achieve more general agreement and acceptance of the claims it advances. Rather than allowing the full institutionalization of discourse,[11] the structures of this public sphere facilitate the forgetting or suppression of the bridging potential of communication.

In the case of the enhanced and still more complex form of the discursive public sphere, the crucial difference is made by the incorporation of the public and hence public resonance – which means to say, the introduction of the third point of view over and above the ego and alter perspectives of the institutional and civil society actors.[12] In such a fully developed public sphere, the participating institutions as well as associations, organizations and movements relate to each other in and through the discursive medium only via a reference to the presence of the non-participating yet nevertheless involved observing, evaluating, judging and commenting public. The epistemic authority coming into play here unequivocally gives priority to the public interest. The publicly embodied third point of view therefore has a sobering structuring effect on the self-understanding, self-presentation, mutual sensitivity, mutual understanding and mutual recognition of the active participants and their respective forms of risk communication. This instantiation of the public sphere thus possesses the potential of refining risk communication to the highest degree of legitimacy and hence efficacy possible. But this is possible only under the contingent, uncertain and fragile conditions of the non-linear social dynamics leading to a collective outcome.

This raises the question of what precisely is at stake in risk communication.[13]

Risk communication as learning under contingent conditions

The identification of different types of public spheres in which distinct forms of risk communication take place underscores the non-linear dynamic nature of the multi-levelled process of risk communication. Far from simply the transfer of information, risk communication involves the processing of information through its division and recombination, implicating variable configurations of speakers, audiences and others. In turn, such an event implies that learning processes are at work in it.[14] As it takes its course, cognitive structures of different levels and scope, from individual self-understanding to cultural models, undergo a self-organizing transformation resulting in a new classification, reframing and reconstitution of the world. Considering risk communication from this perspective should throw some light on persistent problems and challenges faced by risk communicators, particularly perennial uncertainty, but also on potential opportunities and possibilities for the enhancement of risk communication.

Sociologically, learning processes can take on a variety of different forms, depending on the structure and complexity of the social relations, intersubjective experiential or communicative contexts presupposed. Different configurations of public spheres allow distinct learning processes. The multi-levelled process of risk communication, particularly the impetus driving it forward, cannot be adequately understood unless it is related to these learning processes. For this purpose, some basic as well as composite types of social learning are distinguished below and related to the levels of the risk communication process.[15]

Aggregative learning

First, aggregative learning at best is possible in a public sphere at rest representing an intersubjective framework characterized by a high level of structural openness and a low level of symbolic complexity. Such learning involves the aggregation of achievements gained through trial and error at the individual level, whether persons

or legal personalities such as institutions. At issue here, therefore, are the individual learning processes of business executives, corporations, politicians and bureaucracies that take place without collective will-formation and, hence, to the exclusion of civil society and the public. It leads to configurations of socio-economic and political or administrative power which give rise to cleavages and class structures as well as associated dynamics of individualization and social exposure to risk. For example, this type of learning and its consequences were typical of the period prior to the emergence in the 1970s of the concern of social movements and the United Nations with the problem of risk.

Institutional learning

Second, institutional learning requires an intersubjective experiential context possessing a high level of structural closure and a low level of symbolic complexity such as an elite or institutional public sphere. It involves the kind of learning that different kinds of institutions have to undergo to be able to fulfil their particular missions – for instance, economic institutions (e.g., the corporate sector) to safeguard and further production, distribution and consumption, and political institutions (e.g., the state, the EU) to take care of the population and collective goods. This type of learning assumes the indifference, acquiescence or compliance on the part of the relevant other such as for instance labour, consumers and the citizenry. Thus it typically leads to institutional practices which also have a hierarchical, authoritarian or paternalistic side. In the risk communication of private firms and state institutions, this type of learning is closely allied with and complementary to aggregative learning. Here a form of institutional risk communication prevails which is articulated through a variety of contradictory cultural models. While corporations let themselves be guided by such models as entrepreneurship, profit, smartness, bullishness, risk-taking, customer service and need-fulfilment, and government agencies by such models as reason of state, the common good and public service, both tend to be paternalistic and secretive and therefore readily revert to practices of concealment, denial and cover-up.

Associational learning

Third, associational learning is made possible by a liberal or mass public sphere which presupposes a configuration of social relations displaying a low level of structural openness and a high level of symbolic complexity. It involves the coordination and synthesis of the cognitive structures of associating individuals and groups in civil society.[16] Such coordination and synthesis stretch from the construction of a collective identity, via the formation of a collective actor such as a voluntary association, NGOs or social movement, to collective mobilization and eventually collective action.[17] Involving little or no communication with relevant others, this kind of learning proceeds from the assumption of the opposition of corporations and the state or, at best, their indifference or acquiescence, while hope is pinned to the support of the citizens. Needless to say, this is typical of the contemporary environmental, anti-biotechnology, genetic rights and related movements engaging in civic risk communication. This form of communication, impelled as it is by associational learning, is guided and given direction by a range of cultural models, including from human and planetary health, through rights, citizenship,