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1 A psychological framework for analysing risk

Chapter preview

This chapter introduces the definitions of hazard and risk, detailing how they are often confused. It goes on the describe the great debates of the last twenty years between science and social science that have called into question the existence of objective risk. The perspectives of Douglas, Giddens and Beck are briefly outlined. The role of fundamental uncertainty in undermining scientific bases for estimating risk and the difficulties of the precautionary principle as a regulatory tool are considered. The basis for producing a psychological framework for analysing risk is presented. This is a framework which requires data at levels of analysis that encompass all from the intra-psychic to the societal. A series of key questions that an integrative social psychological analysis of risk must address is listed.

1 Risk and hazard

Risk has been the arena for some of the most interesting debates in the social sciences of recent years. In effect, risk has been released from the sole ownership of the physical sciences, where it was treated as something that should be assessed and estimated quantitatively – if only the right tools could be developed. Instead, it has been captured by philosophers, political scientists, sociologists, geographers, social anthropologists and psychologists, who have all brought their own critical lenses to the conceptualisation of risk. However, the prisoner is not reconciled to its fate, ever and again manifesting in some new guise to evade captivity.

It is the fact that risk is simultaneously capable of very narrow, if contested, definition and yet is substantiated in myriad forms that makes it so fascinating. It may be boring to start with definitions but we need to know what we are talking about, we need to share an understanding of what we are talking about and, without definitions, words, especially in this domain of risk, can mean very different things to different people. Commonly, risk is defined in terms of two dimensions – usually simultaneously, though not

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necessarily. The first concerns probabilities. The second concerns effects. Risk is the probability of a particular adverse event occurring during a stated period of time. In terms of probability, risk refers to the likelihood of some specific negative event (delineated as closely as possible in terms of amount, intensity and duration) as a result of an exposure to a hazard. A hazard is defined as anything (animate or inanimate; natural or human product) that could lead to harm (to people or their environment). In terms of effects, risk refers to the extent of the detriment (the numerical estimate of the harm) associated with the adverse event. Risk used to refer to detriment focuses upon the severity or scale of consequences. So, for instance, it can be measured in number of fatalities expected to be associated with the event, the loss of property that would occur or the length of time it would persist.

It is clear that these two dimensions of risk (probability and effect) are conceptually quite distinct. There is no reason to muddy the distinction. It would be sensible to use two different words to refer to these two dimensions. However, in fact, custom over many years has resulted in risk being used to refer to both. It can result in confusion and it is often only through looking at the context in which the word 'risk' is used that it is possible to divine which dimension is actually involved. A very simple sentence may serve to illustrate the ambiguity of the word 'risk' and the significance of its context in determining its interpretation. Take the phrase 'There is a risk of rain today'. It could be associated with an interpretation of how likely the occurrence of rain was, or it could be associated with the negative consequences of rain today (for example, flooding or, perhaps worse still, the abandonment of a cricket match).

In practice, the two dimensions (probability and effect) tend to be examined in tandem. People do not wish simply to know how likely an adverse outcome is; they also want to know how bad that outcome will be. To be influential in directing decisions, a statement of risk optimally tells about both probability and effect.

This set of definitions clearly articulate the difference between risks and hazards. However, common parlance does not. A hazard is often referred to as a risk. So, for instance, we sometimes talk about smoking as a risk or drinking alcohol as a risk. Smoking is a hazard. Consuming alcohol is a hazard. The extent and the probability of either having negative consequences – that is, the risk associated with each – can be estimated.

2 The great debates

Since a hazard is defined as anything with the capacity to do harm and risk is defined as an amalgam of the likelihood and extent of harm, the great debates have focused upon who determines what is deemed harmful.

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There has been a challenge to the so-called commonsense approach that harm is self-evident or a manifest quality of an outcome. It is argued that harm is not objective; it essentially entails an evaluation of an outcome and a conclusion that the outcome is unacceptable. At one extreme, there might be total consensus that an outcome was harmful. For instance, a landslide that deluges a village and kills almost all inhabitants would be likely to be consensually accepted as harmful. At the other extreme, there might be significant disagreement about whether an outcome was harmful. For instance, nuclear power generation arouses quite diverse estimates of harm. Even where there is relative consensus in the perception of harm, there will be dissenters. For instance, the result of terrorist bombing may be regarded as harmful by the majority, but not by all. The assessment of harm depends upon the extent to which the outcome is acceptable (or even desirable) and this will vary between individuals and across societal institutions, according minimally to who is its victim and who is its beneficiary.

The very existence of harm, and subsequently any estimate of harm, is thus deemed a product of social analysis and negotiation. Consequently, since they are both defined in relation to harm, the existence of a hazard and the estimate of risk is also a product of social analysis and negotiation. None of this requires us to dismiss the physical reality of the outcome itself (i.e. the dead bodies beneath the mud, the nuclear waste or energy production, or the bomb-riven mangled Underground stations). It simply requires us to recognise that the meaning attributed to these physical manifestations is achieved through a complex process of interpretation that is both social and psychological, occurring within and between institutions and within and between individuals.

The social science concern with this social construction of harm, hazard and risk has sensitised us to the way some institutions, some organisations and, indeed, some individuals have greater sway over the process than others.

In retrospect, the impact of the social science debate about risk over the last two decades is difficult to gauge. It is hard to step back in time and describe the initial effects of critiques that were published just over twenty years ago when they have so transformed the current platform for risk analysis. Propositions concerning the social construction of risk, that now seem obvious, were originally outrageously radical, challenges to the power of the scientific establishment to define and remedy hazards. Douglas (1986) argued that public perceptions of risk were not simply the sum of individual reactions to specific events but were shaped by social and cultural influences. She identified that all institutions are not equal in shaping risk perception or acceptance and challenged whether

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risk should be assessed without consideration of issues of morality and social justice. Highlighting the inadequacies of cognitive psychological models of risk estimation and choice, she called for the broader analysis of the impact of culture. From the vantage point of the twenty-first century, it seems almost incredible that it was necessary to demand this – why was it not already being done? The question is rhetorical, of course. In some senses it was being done – perhaps not as Douglas would have wished it done, but done nonetheless. Certainly, the psychologists involved in the early empirical work on risk did not ignore or reject the role of social factors in determining individual perception or judgement. However, their tools of analysis were not those used by philosophers, sociologists or social anthropologists. Their findings were centred on processes residing within individuals, not institutions. Their work was definitely not a form of social or political commentary and did not signal that the position of risk in societal discourse should be transformed.

Beck (1992) published *Risk Society* in German in 1986. He certainly did set out to shift the position of risk in societal discourse. The book has two interrelated theses: one concerns reflexive modernisation, the other the issue of risk. For Beck, modernisation is constituted of scientific and technological developments that create risks and hazards never before encountered; unlimited in time (affecting future generations) and space (spanning across national borders) and socially (impacting on many types of people). This is the 'risk society' where no one can be held accountable for its hazards, which are incalculable and beyond remediation or compensation. The way forward, according to Beck, was to promote reflexive modernisation; embodied in radicalisation and the rejection of the culture of scientism, together with its overblown and false claims. The passage from tradition to modernity has been supposed to instigate individualism and liberal democracy, based on enlightened self-interest. However, the postmodern critique already suggested that modernity itself imposes constraints through culture, particularly around the icon of science (and its cultural form – scientism). Scientism was said to impose identity upon social actors by demanding their identification with particular social institutions and their ideologies – notably their construction of risk but also their many other rationalisations for social control (for example, in the definition of insanity or appropriate sexual behaviour). Beck was arguing that reflexive modernity is the next phase in this development, where, through freedoms originating in the decline of the class structure and the renovation of hierarchies in the workplace, individuals can reflect upon and flexibly restructure the rules that they accept. The risk society is essentially an individualised society, structured around the distribution of ills (the harm hazards create); the fractures within it

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precipitate criticism of scientific orthodoxies and generate risk discourses that allow the status quo to be challenged. In parallel with Beck, but independently, Giddens (1990, 1991) examined the distinctive form reflexivity takes in modernity, particularly with respect to risk, trust and the creation of identity through managing one's biographical narrative. This work on the dynamics of risk discourses has served to highlight the conflicts that pervade this arena.

Capturing the definition of the hazard and its risk may be easier for technical or scientific experts, but their control is no longer complete. The social science analysis has exposed that these conflicts exist and demanded that they be given attention. More recently, Beck (2006) has extended his analysis. He now speaks of the 'world risk society', recognising that with globalisation come risks that are global. He argues that this state of global risk was unanticipated and the only possible reactions to risk that is experienced as omnipresent are denial, apathy or transformation. His interest is in transformation. Since 'risks exist in a permanent state of virtuality' – the moment they become real they cease being a risk and become a catastrophe – risks are events that are always threatening. The threat is open to transformation through social action and influence. Beck states that, since this transformation is a socially constructed phenomenon, some people will have greater capacity to influence it than others. He acknowledges that not all actors benefit from the reflexivity of risk, only those with real scope to define their own risks. The inequalities in the control of definitions allow powerful actors to maximise risks for others and minimise risks for themselves. Definitional control may not inevitably determine physical exposure to harm but it can do so. For instance, a company that diminishes the risk defined to be associated with some industrial process, and consequently is allowed to put workers in danger, is not just engaged in semiotics – it is engaged in social and economic control.

Although Beck does not say this, it could be argued that the uncertainty that surrounds many global hazards heightens the certainty of definitional turf wars. This is not uncertainty that can be expressed in terms of probability estimates because it is founded upon a deeper problem: we do not know what we do not know. This is more than acknowledged ignorance or limits to information. It is an awareness that there may be something more to understand but we just do not know what. The anticipation of the inevitability of the unknown, and thus unexpected, is now recognised in risk discourses. It opens avenues for contesting risk definitions, for undermining definitions originating with authorities of one sort or another. For, if there are such uncertainties, how can any risk estimate be believed? Risk can become a component in the rhetoric of

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dissent, a tool of minorities for initiating change, in ways that mirror its use by power elites in directing economic and political decision-making.

The great debate initiated by the social sciences has had the effect of nourishing across broad swaths of society globally – not least through its involvement of and impact upon the mass media – an abiding scepticism about hazard and risk pronouncements made by authorities (whether scientific or otherwise). Equally importantly, together with many other political and economic developments, it has stimulated new orientations to risk management by those responsible. The acknowledgement of uncertainty and the recognition of other contested risk definitions have led to the introduction of the precautionary principle in hazard regulation and management.

Precaution requires that protection is introduced against a hazard as yet undefined but suspected. Doubt and fear are allowed a part in dictating regulatory action in such contexts. There is a perfectly good rationale for doing this because, when the possibility exists of disaster if action is not taken, precaution seems defensible. There are, of course, new debates about the appropriateness, extent and justification of precaution. Precaution has given ammunition to some conspiracy theorists because it is a rationale for intervention and regulation that knows no bounds. Even those charged with executing the precautionary principle sometimes claim that they do not understand how it should be applied (Wilson *et al.*, 2006).

It seems almost inevitable that the philosophy of precaution will come under increasing scrutiny. Our society is formed of hazards and we know them through the fact that we label them. Implicit in the process of labelling is the desire to avoid or the determination to control them. Precaution can be accused of denying us the opportunity to take advantage of what might be a worthwhile risk. Cries that precaution stifles innovation and blunts the competitive edge are easily imagined. The next rhetorical battlefield is likely to concern the limits of precaution and the resurrection of positive risk. Already, there are attempts to defend precaution (Hanekamp, 2006).

During these great debates over the last two decades that have at times challenged the very epistemological bases of scientific fact, the psychology of risk has often been a target of attack. It has been accused of being solely concerned with the individual's perceptions and of ignoring their origins in social processes. Yet it is notable that during this period psychologists, particularly social psychologists, have been working to produce a substantial body of empirical evidence not just about how individuals think, feel and behave about risks but also about the social factors that shape cognitions, affect and action. They have been at the

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forefront of research on the way hazards come into being through the errors and decisions of individuals, institutions and governments, and how they are managed successfully and unsuccessfully. The analysis of the role of groups and intergroup dynamics in the evolution of risks has been ongoing. The examination of communications processes, including those associated with the mass media, has been extensive. Processes of social amplification and social representation of risk have been studied. It seems that the research from the psychological perspective has been piecing together a rather complex model of risk. Far from being situated at the level of intra-psychic processes in the decontextualised individual, this is a truly social model. The old attacks on psychological analyses that speak as if psychology is only concerned with cognitions of individuals seem now completely redundant and anachronistic.

3 A social psychological framework for risk analysis

Breakwell (1994) proposed a generic framework for the development of social psychological theory. Figure 1.1 presents a version of that framework. It is not itself a theory or model; it is a framework that suggests what might be considered when building theory or explanatory models within social psychology. The model is not intended to encompass all of the constructs that might be needed in a specific social psychological analysis; rather it is intended to suggest what should minimally be considered for inclusion. Notably the lines have no arrowheads indicating the direction of influence. At the level of a generic framework for theorising, such specificity is not appropriate. In practice, in certain theoretical formulations the lines of influence will go one way; in others they will go in the opposite direction; and in some there will be mutual and multiple influence. The purpose of the theorist in each case would be to determine the nature of the rules or principles that govern the relationship between each of the constructs in the framework. This flexibility within the framework is important, because different theories will have the object which they ultimately wish to explain located at different places. For instance, for some, the object will be the prediction of individual action; for others, it will be the prediction of social representations (that is, shared understandings).

The elements within the framework are briefly explained in Box 1.1. It is clear that they are designed to span the spectrum of factors that interact from the intra-psychic individual level to the societal structural level. Moreover, they traverse the objective–constructionist dimension. This is a framework that directs theorists to be interested not just in structure but also in process. It demands a variety of levels of analysis or explanation to be adopted (Doise, 1982). These range from the physiological, through the

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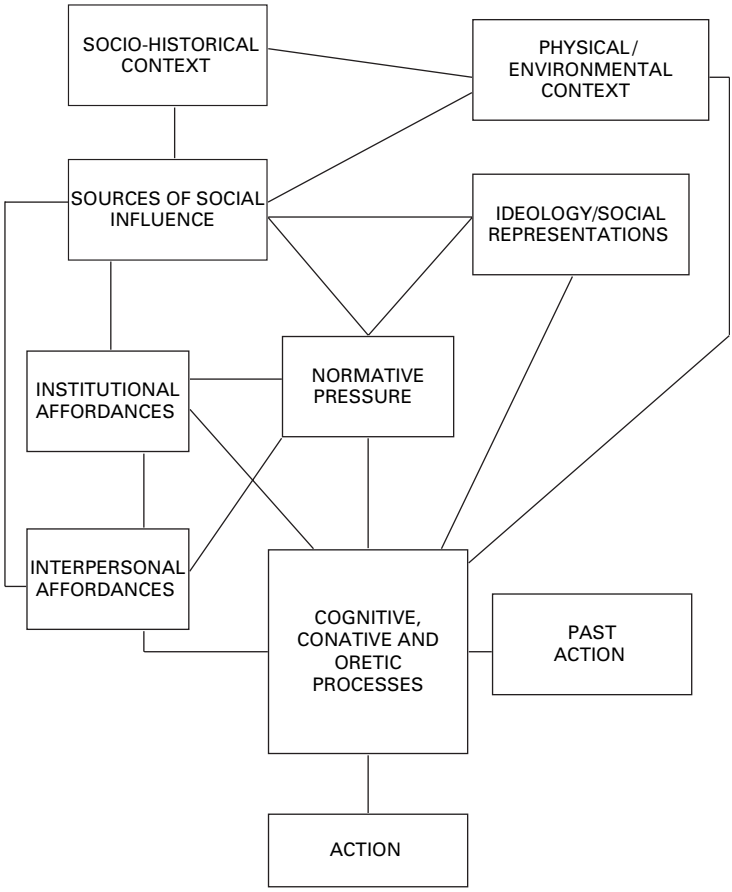


Figure 1.1 A generic framework for social psychological analysis

intra-psychic, into the interpersonal, and then on to the intra-group and intergroup, and beyond to the institutional and societal. It means that the methods that need to be used to elicit and analyse data will be diverse.

This framework offers a way to systematise the complex data that psychologists, and others, have collected concerning risk phenomena over recent years. To achieve an adequate social psychological theory of risk, risk researchers would need to have answered a series of key questions:

- What do individuals believe about hazards and risks
- How do individuals differ in their beliefs about hazards and risks – what personal and social factors predict these differences

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Box 1.1 Elements in the analytic framework

Socio-historical context: reflects what has happened in the past that is relevant to object of analysis. Lyons (1996) has argued that this is a different order construct to the rest. Since the socio-historical context could be conceived of as nothing more than the sum of the movement of the other constructs through time, it could be signified in the framework by iterating the other boxes (presenting echoes of themselves diminishing in size to a vanishing point). Nevertheless, the socio-historical construct box is included here for diagrammatic clarity and also because it is a construct so frequently omitted by social psychology theories, which treat it as outside their remit. Consider the box present as at least a reminder. Of course, recent historical social psychology studies show how the socio-historical context is itself a product of active reconstruction driven by known social psychological processes. Such processes of social memory are increasingly a target for research in their own right and, again, make the presence of this box in the generic framework reasonable.

Physical/environmental context: reflects what is happening in the material universe. The line linking it to sources of influence and thence to ideology and social representations is meant to indicate that this physical reality takes on meaning through social construal and action.

Sources of social influence: reflects the wide array of social agents that may actively, both deliberately and unintentionally, influence events. This recognises the importance of structural differences in influence power. It acknowledges that sources of influence interact with each other in effecting an outcome.

Ideology/social representations: reflects systems of widespread or shared belief and values.

Normative pressure: reflects the processes and acts of communication that act as the channels of influence.

Institutional affordances: reflects the constraints and provisions, enacted in actions, offered by institutions relevant to the object of analysis. These will include the effects of intergroup relationships. They will include economic, legal, fiscal and religious facilitation and barriers.

Interpersonal affordances: reflects the constraints and provisions, enacted in actions, offered by other individuals relevant to the object of analysis. These include intra-group dynamics.

Past action: reflects the individual's past behaviour relevant to the object of analysis.

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Box 1.1 (cont.)

Cognitive, conative and oretic processes: reflects the processes at the intra-psychic level that result in the thoughts, feelings and intentions of the individual relevant to the object of analysis. In conceiving of the intra-psychic processes in this tripartite way, the framework follows McDougall (who used the terms to refer respectively to thinking, emotion and will). In practice, this entails careful analysis of emotional states as they relate to decision-making and intention besides the more usual analyses of action-relevant schema (that is, information matrices) and goal-relevant evaluation (that is, the strength of purpose and its associated cost–benefits analysis). There is no assumption that these processes are necessarily rational or conscious.

Action: reflects the action of the individual relevant to the object of analysis. It should be noted that the individual's action can feed back into other elements in the framework. It is not deemed to be the ultimate outcome that the model seeks to explain.

- What factors, social and psychological, influence decision-making about hazards and risks at either the individual or institutional levels
- What role does affect or emotion play in individual reactions to hazards and risks
- How do actions with respect to hazards and risks reflect the beliefs, emotions or intentions of individuals
- How is risk communicated within the matrix of sources of social influence and prevailing interpersonal and institutional affordances – what normative pressures operate
- How does human action, at the levels of individuals or institutions, create hazards unintentionally and what socio-historical or physical-environmental factors influence the effects of such action
- How do institutions or complex organisations deal with hazards and risks
- What are the sequences of processes that transform a material object that has potentially harmful consequences into a socially recognised, if contested, hazard with its associated risk?

Interestingly, there are significant, empirically based, answers to these questions already – even though the researchers who have generated the data may not have formulated the questions in quite the same way. The next eight chapters of this book describe the evidence that is available and its interpretations.

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