

# Chapter 25

## Governing Risk Tolerability

**Frederic Boudier**

The recurring nature of systemic failures and disasters that intrinsically link technology to the vulnerability of the environment and ecosystems -from the Bhopal or Chernobyl tragedies to the more recent BP oil spill of 2010 and the 2011 Tsunami/Fukushima Daiichi disaster- raises the fundamental question of risk acceptance. The benefit from technology that we enjoy at an individual level seems to be accompanied by growing scepticism about science. This is combined with increasing fear about the potential downside of technological innovations for health and the environment. How safe is safe enough? Under what conditions are risks to be accepted or refused? Who decides and according to what criteria? In a democratic society, the politics of risk acceptance is particularly puzzling. Born of utilitarian considerations, probabilistic expert-based models have often been viewed as the most rational tool for risk decisions. A strict elitist-technocratic approach to risk decisions raises ethical and political concerns (Bijker et al. 1987). It may not create acceptable risk-benefits tradeoffs for each member of society (Fischhoff 1994).

As risk decisions become less straightforward, the need to formalise democratic risk management procedures becomes even more pressing. Specific methodologies have been devised to organise active engagement in risk situations (NRC 1983; IRGC 2005). Yet, too little has been said about how the new relationship between engagement, expertise and democracy may re-shape the procedures that govern decisions about the risks that we may collectively accept without question, tolerate under specific conditions, or even refuse. For instance, how can twenty-first century 'post-trust' societies (Löfstedt 2005) envisage a reasoned and democratic way of dealing with risk when relatively minor mistakes tend to jeopardise social acceptability?

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Risk research has used the notion of ‘tolerable risk’ to describe activities considered worthwhile for the added value or the benefits they provide but sufficiently uncertain to require specific measures to diminish and limit their likely adverse consequences. In practice, simple decision heuristics can offer a valuable conceptual help; in distinct policy fields – i.e. nuclear safety, occupational health and safety – formalized tolerability of risk (ToR) models have been successfully developed. ToR models tend to combine technical probabilistic estimates about the magnitude and harm of a risk with a societal criterion that integrates the perceptions of the non-experts (HSE 1988, 2001). In order to achieve a result that is acceptable to society, stakeholders involved in the bargaining process should be carefully selected to represent the major forces in society.

When Fairman (2007) conducted an institutional analysis of the UK health and safety tolerability model, she came to the conclusion that such models can be established when the objectives of all sides are similar at heart and all sides win by being part of the process of decision-making. Fairman also suggested that this approach to acceptability/tolerability is only possible when its objectives are modest and clearly in the interests of each organisation. Other critical factors for success include the ability of organizations to speak with a single voice, and the ability or those sitting at the negotiation table to sell their decisions to their constituents.

Arguably, the allocation of risks into ‘acceptable’, ‘tolerable’ and ‘unacceptable’ regions is more difficult to achieve in highly confrontational situations, especially when key stakeholders -for example industry and prominent NGOs- fundamentally disagree about how a risk should be handled. Controversies about whether Genetically Modified Organisms (GMO) should be pursued or banned offer a topical example. In the future, more efforts need to be made to formalise risk acceptance procedures in such problematic areas. Failing to agree on risk tolerability procedures may not only lead to further conflicts, it may also result in poor risk-benefit and risk-risk judgments. The consequence may be more harm to health and the environment, which would undermine public support and trust in the fairness of the allocation of risks and benefits.

How to move forward and improve the governance of risk tolerability? Faced with these challenges, the contours of the new ‘collaborative discourse’ (Renn 1999) remain to be defined. If anything, the formalisation of tolerability decision procedures, especially when conflict arise, will require, in the future, to pay much more attention to cognitive and perception factors. In sensitive areas, the first step should be to launch an honest two-way non-persuasive dialogue between experts, government and non-experts.

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