

Risk Communication

This section discusses issues related to risk communication across a range of publicly perceived high risk industries (such as pharmaceuticals, nuclear, oil, etc.). It reports critically and provides analysis on risk communication as an outcome of risk research within these industries. Contributions are intended to include methods working towards the advancement of risk perception research and describe any lessons learned for successfully communicating to the public about risk.

Performativity in Action: How Risk Communication Interacts in Risk Regulation

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In order to better understand the effects of risk communication on regulatory preferences, and vice versa, it is necessary to think beyond the objective/perceived distinction that is often made in risk studies, policies and practices. As an alternative we introduce the concept of risk hybrid, which can be the result of communications of objectified risks and perceived risks. Risk communication, we argue, is not just a representation of the calculated or perceived risks in risk assessment, which subsequently informs risk regulation processes. Instead, it often contributes to the construction of risk conceptualizations and objects in risk assessment and risk management, which in turn are part of larger discourses that enable and constrain regulatory action. We propose the concept of performativity as an explanatory mechanism to analyse the relation between risk communication and risk regulation. We show how performativity can explain the entanglements between risk communication and risk regulation, and close by pointing out implications for understanding and coordinating risk regulation practices.

I. Introduction

Examples abound of highly politicized instances of risk controversies, such as the climate debate, counterterrorism, and the commercialization of genetically modified organisms (GMOs). Numerous reasons, such as divergent perspectives, ways of communication, and interests, explain why involved actors often find themselves locked in a controversy.

For instance, in the GMO debates environmental politicians, NGOs, industrial parties, consumers, and GMO scientists have exerted very distinct ways of communication, resulting in a highly polarized and contested gene-risk landscape.¹ As a consequence, some industrial players have left or terminated R&D activities in the EU, while other scientists escape the gaze of EU-regulations and started experimenting in places with a different approach to GMO regulation and control.

Evidently the type and modality of risk communication is pivotal in how risk debates develop. A key conceptual distinction made within such debates, among academics, in the literatures, and in wider society, is one between *perceived or subjective* risks on the one hand, and *factual or objective* risks on the other. This distinction is mainly established and reinforced by academic literatures in which much work

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¹ See on the bias-driven regulation in GMO communication on the example of the precautionary principle Kai Purnhagen, The Behavioural Law and Economics of the Precautionary Principle in the EU and Its Impact on Internal Market Regulation, 37 *Journal of Consumer Policy*, 2014, 459-460.

has been conducted on the role of *perceived* risk in risk attitude formation and risk behaviour, and its role in understanding risk-related decision-making. Likewise, procedures for *objective* risk assessment have been optimized and are presented over the years as increasingly accurate. We refer to these as the distinction between *risk as perception* and *risk as analysis*². This distinction has been transferred into risk regulation as a strict dogma to distinguish the trias of (allegedly objective) risk assessment, (allegedly subjective) risk management and risk communication. In the ideal world of risk regulation, all three of which need to be distinguished in order to keep science free from politics, inform politics with (allegedly) neutral science and then communicate the outcome of such politicized scientific insights.³

We argue that although this ‘classic’ distinction serves a purpose of an idealistic categorization of research schools or regulatory domains, it does not prove to be a useful distinction to analyse and understand risk communications, the discourses which they are embedded in, and ways they affect the realities of risk regulation, including risk assessment and risk management. Objectified and perceived risks will be difficult – if not sometimes impossible – to separate in practice. As an alternative we introduce the concept of *risk hybrids*, which combines objectified risk (how the risk is represented in the risk analysis) and a perceived risk and nullifies the a-priori made distinction between the two. This concept will enable us to re-conceptualize risk beyond the dichotomy of objective and subjective risks and allows us to understand how risk communication influences risk assessment and risk management. By observing how different risk communications perform different risk hybrids in the various contexts in which they emerge, we show how the concept of risk hybrids can offer a richer understanding of risk communication practices. In risk regulation, understanding risk hybrids can inform which “other factors legitimate to the matter under consideration” (Art. 6 (3) General Food Law) shall be taken into account during risk management. Before deepening our theoretical understanding of risk hybrids as objects of performative discourses, we will first offer a brief review of research on risk assessment, risk management and risk perception. We close this contribution by pointing at some concrete avenues for how this notion could be taken forward within the realm of risk regulation.

II. Risk Assessments, Risk Management, Risk Perceptions, and Claims of Objectivity

Within many disciplines, making calculations and estimates of the nature and magnitude of risks is essential. In economics and natural sciences, for instance, risks are studied in order to accurately predict potential negative outcomes, such as financial loss, the chance of flooding, or toxicity of chemical substances. In many fields of EU risk regulation such as food law, chemical law and pharmaceutical law, risk assessment is a necessary precondition for regulatory intervention. Risk-related predictions are deemed vital for the viability of businesses, such as the insurance industry and for governments to deliver “good” regulation. Insurance premiums are based on a combination of the chance and the size of a risk event – plus the insurer’s operational costs. Poor risk assessment puts the competitiveness of the insurance company at stake, and eventually also the interests of its customers. Governmental interventions based on risk are grounded in scientific estimations of threshold levels with a view of protecting consumers’ health and safety. Poor risk assessment provides political decision makers with poor data, which likely results in suboptimal, in the worst case, life-threatening regulation for consumers. In risk assessment many different conceptualizations of risk and uncertainty can be used. Examples of risk concepts include risk as an expected value, as a probability distribution, as an expected disutility, as an epistemic or stochastic uncertainty, as a simple threshold level for when a substance is deemed to be hazardous and so forth⁴. What all of these approaches have in common is the striving to objectify risk. The risk calculation that is derived from the variety of available risk assessment procedures can subsequently be used to take protection measures against a risk, if deemed

2 P. Slovic, M.L. Finucane, E. Peters, and D.G. MacGregor. Risk as analysis and risk as feelings: Some thoughts about affect, reason, risk, and rationality. 24 *Risk Analysis*, 2004, 311-322. See also G.F. Loewenstein, E.U. Weber, C.K. Hsee, and N. Welch. Risk as feelings. 127 *Psychological Bulletin*, 2001, 267-286.

3 See e.g. Art. 3 No 10, Art. 6 Regulation (EC) No 178/2002 of the European Parliament and of the Council of 28 January 2002 laying down the general principles and requirements of food law, establishing the European Food Safety Authority and laying down procedures in matters of food safety OJ L 031 2002 p. 1 – 24 (General Food Law).

4 For a comprehensive overview see Terje Aven, *Misconceptions of Risk* (Chichester, Wiley, 2009).

necessary, such as establishing proper risk management procedures.

The objectification of risk has obvious strong merits, and is a vital part of the operational reality within many regulatory institutions, scientific fields, societal domains, industries, and commercial enterprises. Not surprisingly, the fact-driven nature of risk assessment functions as a golden standard, and appeals to the adage of rational decision making. However, as many scholars in social sciences have argued the method of risk as analysis has certain limits. For one thing, on philosophical and methodological grounds the existence of 'objective knowledge' or 'facts', independent of observation can be contested. Secondly, the behavioural sciences have contributed much to our understanding of human decision making within contexts of risk and uncertainty and have stressed that not only objectified risks but also perceived risks make a difference in these processes. Most notably, research on risk perception shows that people can worry deeply about risks that may objectively be very slim, especially when compared to (much bigger) risks that most people willingly accept⁵. For example, some travellers are quite worried about the safety of taking a plane but not even consider the – statistically much greater – risk of driving to the airport. Furthermore, recent research showed that the combination of the extent of perceiving a hazard to be risky and the extent to which people felt uncertain about a certain hazard predicted the degree to which members of the general public demanded regulatory action about the hazard.⁶ As such, demand for risk regulation is sometimes entirely driven by perceptu-

al processes, not by technical analysis of the particular hazard.

The act of risk as analysis has proven to be important to harvest factual risk figures that can inform decision making, risk management, policy development and risk regulation. Also, risk as perception helps us to understand how people psychologically engage with risks that are relevant to them⁷. These approaches each have important merits and it makes little sense to value any of the two approaches over the other, since both enable and constrain regulatory action and impact decision-making.⁸ Because a priori to a practice of regulatory action and decision making it is impossible to predict which risk communication will be most influential, in actual risk communications practice they can both contribute to the creation of risk objects such as 'a dangerous gene' or 'a risky hedge fund'. Because risk objects can be the result of combining elements from objective and subjective risk assessment we will call them *risk hybrids*. To deepen our understanding of how risk hybrids emerge and how they can become embedded in different risk discourse we will continue by introducing performativity theory, which will serve as a conceptual lens.

III. Performativity Theory

Performativity theory is developed in constructivist and post-structuralist frameworks, which depart from the epistemological premise that everything we observe is constructed by the observer (yet not unrelated to the constraints set by the social and material world under observation) and therefore contingent. Risk or risk objects do not exist before they are observed or conceptualized as such.

In line with this way of thinking it can be argued that risk communication is embedded in discourses, which can be defined as 'a structured set of concepts that enables access to a certain part or aspect of reality, while simultaneously veiling other parts or aspects'.⁹ Risk discourses, like any other discourse, can become performative, they can sort all kinds of unsuspected (or anticipated) reality effects. Simply put: 'Performative means that discourses constitute the objects of which they speak.'¹⁰ One of the first authors who coined the term was the philosopher J.L. Austin.¹¹ For him "a performative utterance was a specific kind of statement or expression that estab-

5 P. Slovic. Trust, emotion, sex, politics, and science: Surveying the risk-assessment battlefield. 19 *Risk Analysis*, 1999, 689-701.

6 P. Marijn Poortvliet and Anne Marike Lokhorst. The key role of experiential uncertainty when dealing with risks: Its relationships with demand for regulation and institutional trust. *Risk Analysis* (in press).

7 For an example in the context of GMO risks see B.C. Mulder, P.M. Poortvliet, P. Lugtig, and M. de Bruin. Explaining end-users' intentions to use innovative medical and food biotechnology products. 9 *Biotechnology Journal*, 2014, 997-999.

8 See on this point Micklitz and Tridimas.

9 Kristof Van Assche, Raoul Beunen, and Martijn Duineveld, *Evolutionary Governance Theory: An Introduction* (Heidelberg, Springer, 2014).

10 L. Bialasiewicz, D. Campbell, S. Elden, S. Graham, A. Jeffrey, and A.J. Williams, "Performing Security: The Imaginative Geographies of Current US Strategy". 26 *Political Geography* (2007), 405-422.

11 J.L. Austin, *How to Do Things with Words* (London, Clarendon Press, 1962).

lishes its referent through the very act of uttering.¹² In saying, for instance, “I apologize,” I am not reporting on an already existing state of affairs. I am bringing that state of affairs into being: to say “I apologize” is to make an apology. “I apologize” is, thus, a performative utterance.¹³ Later this theory was further developed by Pierre Bourdieu,¹⁴ Judith Butler,¹⁵ and recently within Evolutionary Governance Theory.¹⁶

By stating that risk communications can have ‘reality effects’, we do not mean to introduce a naïve distinction between discourse as ‘just’ a social construction and material reality as the real world. It does not naively imply that there are no material realities, that there are no bodies or trees or risky rock formations on the verge of collapse, it implies that things (objects and subjects) appear to be truth because of the emergence and evolvment of discourses.¹⁷ Reality effects occur when risk communications shape the discourses in which they emerge or other discourses or when they mould material ‘realities’, like fences to keep the enemy out, CCTV cameras to increase (or erode) the feeling of safety or a sign on a product declaring it GMO free.

IV. Making up Risk Hybrids

If a risk communication renders real – whether it is performative – can only be observed empirically. Sometimes risk communication will have effects, sometimes not. Some risk communications will render real on the short-term and sometimes it takes longer, sometimes it only renders real in a very specific place or context, sometimes it gets widespread in society.

Risk communications perform risk objects; these are the objects that are constituted according to the distinction as risk/no risk. If and how a risk communication performs a risk hybrid cannot be predicted. A risk hybrid that is the result of a scientific risk analysis has a higher chance to make a difference in the on-going communication within the sciences, it could for example be picked up by other researchers for further investigation. Yet, whether this risk communication will make a difference outside of the scientific discourses cannot be predicted. It will depend on the logic of the other discourses, if it will be communicated and if this communication will make a difference. For example, whether the media picks up

a risk hybrid constructed by the sciences and how they frame this risk cannot be determined by the sciences. It depends on the logic of the media discourses: Does it relate to a societal debate on that risk? Is it newsworthy for our readers? Is it fashionable? Do we need an attractive headline for the cover? Does the scientific risk coincide with our moral standards? Therefore risk hybrids are not fixed objects that can just travel unchanged from one discourse to another. Since discourses are differently structured, an unaffected transgression of a risk hybrid from discourse to discourse is an illusion. This is due to the self-referential nature of discourse. Self-referentially means that a discourse reproduces itself based on previous communications within that discourse, every observation of its environment (i.e. other discourses, the material world) will always be communicated according to the internal logic of a specific discourse. Media discourses for example will only reproduce communications that observed by the media as news. Whether something is news or not does not make a difference in legal discourses. The legal system will communicate according to the distinction: legal vs illegal. For the legal system a risk will only make a difference if it is framed in the legal/illegal code.

A risk hybrid therefore can be the result of different risk communications, by academics, worried citizens, media coverage and so on. Sometimes these communications can complement each other and sometimes they conflict, sometimes enforce each other and could also attenuate the risk hybrid¹⁸.

12 Ibid.

13 D. Mackenzie, F. Muniesa, and L. Siu (eds.), *Do Economists Make Markets? On the Performativity of Economics* (Princeton, Princeton University Press, 2007).

14 P. Bourdieu, *Language and Symbolic Power* (Cambridge, Polity, 1991).

15 J. Butler, *Excitable Speech: A Politics of the Performative* (New York, Routledge, 1997).

16 Kristof Van Assche, Raoul Beunen, and Martijn Duineveld, “Performing Failure and Success: Dutch Planning Experiences”, *90 Public Administration* (2012), 567–581. See also Kristof Van Assche, Raoul Beunen, and Martijn Duineveld, *Evolutionary Governance Theory: An Introduction* (Heidelberg, Springer, 2014).

17 J. Butler, *Excitable Speech: A Politics of the Performative* (New York, Routledge, 1997). See also D. Mackenzie, F. Muniesa, and L. Siu (eds.), *Do Economists Make Markets? On the Performativity of Economics* (Princeton, Princeton University Press, 2007).

18 R.E. Kasperson, O. Renn, P. Slovic, H.S. Brown, J. Emel, R. Goble, J.X. Kasperson, and S. Ratick. The social amplification of risk: A conceptual framework. *8 Risk Analysis*, 1988, 177–187.

V. Ways forward

We propose to study the construction, relations and dependencies between risk, risk hybrids, risk assessment, and risk regulation processes in risk discourses. Within these discourses some risks are labelled as objective, some as subjective, depending on the inner logic the respective discourses, not on the quality of the research, the toughness of the methods and methodologies used. What is constituted as 'real' risk in one discourse could be observed as a danger in another – and non-existent in a third. Some risks might come into existence after thorough risk analysis and labelled as objective in the first place but when new insights emerge, new models of measuring and calculation are replacing the old, they could be re-conceptualized as a misunderstanding. Meanwhile these 'misunderstandings' could remain persistently 'real' and alive in public discourse for years.

To deepen our understanding of the performativity of risk communication we call for studying the multiple ways in which a risk hybrid can gradually become the object of risk regulation and the ways risk hybrid gains a more enduring and formalized character in legal discourses and politics and policy. The performative effects of risk communications and the emergence and evolvement of risk hybrids can be understood if we start to analyse the different self-referential discourses and their couplings contributing to their emergence and reproduction. Then we can observe if and how a risk communication has effects. We thus argue for a novel next step in risk research in which we pay attention to and study the emergence of and interactions between risk hybrids and risk regulations.

Thus, we believe the presented perspective can help to understand, for example, why some risks and risk hybrids – which emerged from years of scientific

research – still lack media attention. We can then observe why a risk object performed by an international network of worried citizens might be debunked by scientists, while making it to the headlines and strengthened by the media, becomes a seemingly objective risk for many, triggering political actions and informing risk regulation.

It is risk communication, the way it emerges in different self-referential discourses and the ways it 'travels' from discourse to discourse and adopt to the internal logic of a discourse, that forms our interest. We assume that if we follow risk communications within discourses and the interdependencies between discourses we will observe that claims in terms of the objectivity/subjectivity divide are not stable over time and not stable between discourses. Risk hybrids are performed in multiple sites, following different pathways of emergence and leading to different outcomes that should be observed empirically. Departing the analysis from an a-priori assumption of the well established and taken-for granted difference between *perceived or subjective* risks on the one hand, and *factual or objective* risks on the other, will only obscure how risk hybrids really come into existence.

A final thought pertaining to the fluid nature of risk hybrids is that formalized risk regulation procedures can also inform risk hybrids. That is, just as the composites of objective and subjective risk have performative effects in creating risk regulation, risk regulation as a phenomenon can perform risk hybrids too. A stringent regulation of a particular nature, such as the ban on carrying certain amounts of cosmetics or fluids during air travel, may make seemingly trivial behaviours salient and can evoke feelings of risk. In that way, risk regulation procedures that were installed to make air travel safer may make, by intrusive screening of all passengers, actually instil feelings of uncertainty and risk in them.