

**ORGANIZING RISK:
DISCOURSE, POWER AND RISKIFICATION¹**

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ABSTRACT

Drawing on the work of Foucault, we develop an integrated framework for understanding how risk is organized in three different modes – prospectively, in real-time, and retrospectively. We show how these modes are situated in a dominant discourse of risk that leads organizations to normalize risk in particular ways by privileging certain forms of knowledge and authorizing certain risk identities over others. In addition to identifying the common way in which risk is organized in each mode and showing how it is held in place by the dominant discourse, we propose alternative ways to organize risk that resist this dominant discourse, and we explain why they are difficult to enact. We then extend our analysis by theorizing how, even when resistance to the dominant discourse of risk occurs, it can contribute to ‘riskification’, with more and more organizing undertaken in the name of risk, due to intensification, discipline and governmentality.

Keywords: risk, discourse, power, resistance, Foucault

In 2008, the Global Financial Crisis hit world markets. It was attributed to the growing use of computer-based risk models that enabled financial institutions, especially in the US, to sell ever more complex financial products, including mortgage-backed securities. The securitization of mortgages, especially subprime lending, coupled with failures of rating agencies to accurately assess risk led to untold casualties. Companies like Bear Stearns and Lehman Brothers failed. Others like AIG had to be bailed out by the US Government. The ‘toxic’ financial instruments were sold internationally, causing problems in Iceland, Ireland, Greece, and other nations. The negative impact was significant. Assets estimated at more than US\$4 trillion were written off as a result of the GFC, while the U.S. government committed almost US\$9 trillion to dealing with its effects. Jobs were lost around the world and as many as 200 million people may have been pushed into poverty by the resulting recession. (Adapted from Gerding, 2009; Lounsbury & Hirsch, 2010; Munir, 2011.)

In March 2011, Japan was hit by a major earthquake – magnitude 9 on the Richter scale – followed by a tsunami which swamped the Fukushima district, including a nuclear energy facility built close to the coast, knocking out the generators which provided the power to cool the core reactor. The owner – TEPCO – had not considered a tsunami to pose a significant risk to the plant and yet this one triggered the world’s worst nuclear catastrophe in a quarter of a century. As the reactor went into a meltdown, concerns began to escalate that the resulting radioactivity could require mass evacuations, including the 35 million living in Tokyo. Although Tokyo was not evacuated, the area around Fukushima was. More than 15,000 individuals died as a result of the tsunami and 6,000 were injured. 3,000 people were still missing and over 300,000 were still living in temporary accommodation as of 2012. TEPCO faces costs for compensation and decontamination estimated at \$120 billion – or two per cent of Japan’s gross domestic product. (Adapted from BBC, 2012; Radford, 2012; Willacy, 2013.)

The global financial crisis (GFC) and the Fukushima disaster are recent illustrations of how the failure to manage risks effectively can have catastrophic consequences. They bear witness to what has become known as the “risk society” – a society increasingly preoccupied with identifying and managing risks that it has itself produced (Beck, 2006: 332). This does not necessarily imply a world that is inherently more hazardous but, rather, a world that we attempt to control through the discourse of risk rather than through appeals to divine provenance or cosmic fate (Giddens, 1999a, 1999b; Lupton, 1999). Risk is commonly understood to be the probability of an adverse event of some magnitude – a danger of some kind that can be managed if the chances of it occurring and the

magnitude of its effects, if it does occur, can be accurately assessed (Danley, 2005). Even when risk is seen in a positive light, in terms of taking bold initiatives in anticipation of returns under conditions of uncertainty, the intention is to avoid negative outcomes, or at least reduce them to some acceptable level (Douglas, 1992; Fox, 1999; Gephart, Van Maanen & Oberlechner 2009).

Organizations are deeply implicated in risk: it is predominantly in and through organizations that risks are produced, evaluated and managed (Gephart et al., 2009; Hutter & Power, 2005; Power, Scheytt, Soin & Sahlin, 2009). Organizations expose employees and other stakeholders to various forms of financial, environmental and health risks (Edwards, Ram & Smith, 2008); while themselves being exposed to regulatory, reputational and operational risks (Power, 2005; Scheytt, Soin, Sahlin-Andersson & Power, 2006; Scott & Walshman, 2005; Smallman, 1996). Accordingly, identifying risks and ascertaining how to deal with them have become central to contemporary organizing.

Organizational research is, however, limited in its ability to explain how organizations do and should deal with risk because it fails to address the complexity of risk in two important ways. First, with few exceptions (e.g., Gephart et al., 2009; Maguire & Hardy, 2013), organizational researchers have not explored the implications of organizations being situated in a dominant discourse of risk. Research that fails to consider the effects of this dominant discourse cannot explain why risk is organized in particular, common ways or why it may be difficult to change those ways even when they are ineffective. Second, for the most part, existing work on risk has developed in three separate streams, each of which focuses on a single way – or mode – of organizing risk. However, organizations face different challenges, depending on whether the aim is to manage risks that may develop in the future, are materializing in real-time, or have arisen in the past. Research that concentrates on a single mode has an incomplete view of how organizations deal with risk and is also unable to explain connections among the different modes.

In this paper, we address these issues. We draw on the work of Foucault (1978; 1979; 1980;

2003), which allows us to characterize a dominant discourse of risk, investigate its effects on how risk is organized, and show how this discourse shapes and constrains the organizing of risk, leading organizations to normalize risk in specific ways. We also combine different streams of literature to identify three different modes for organizing risk, all of which are situated within this discourse. The first mode is the *prospective* organizing of risk through the use of formal assessment techniques that identify harms, hazards and dangers before they arise, with a view to avoiding or minimizing them through effective risk management. Organizations also struggle with imminent dangers when risks begin to materialize, often unexpectedly and unpredictably. A second mode for organizing risk therefore occurs *in real-time*, with the implementation of predetermined plans, scripts and protocols to control risk incidents and contain their consequences. Finally, risk is organized *retrospectively* with a view to improving how it will be organized in the future. In this mode, inquiries, hearings, reviews and other forms of post-hoc deliberation are used to analyze single or multiple incidents where risks have (or have almost) materialized.

We develop an integrated framework by using Foucauldian concepts to link the three modes. We show how all three modes for organizing risk are situated within the dominant discourse of risk, which leads organizations to normalize risk in particular common and widespread ways in each of the three modes. We argue that the effectiveness of these widely accepted ways of organizing risk is, however, likely to be limited in certain circumstances, namely when addressing unfamiliar and systemic risks prospectively, when dealing in real-time with risks that are materializing unexpectedly, and when retrospectively reviewing risk incidents with the aim of making significant changes to how risks will be organized in the future. We therefore propose how organizing risk in alternative ways might address these situations more effectively. However, we acknowledge that enacting these alternative ways of organizing risk requires resisting the dominant discourse of risk, which is difficult in all three modes because the power relations associated with this discourse privilege certain forms of

knowledge and authorize certain risk identities over others. We consider further the difficulties of resisting this dominant discourse of risk by elaborating a ‘second order’ of critique that draws on Foucault’s concepts of intensification, discipline, and governmentality. Specifically, we argue that, even if organizations are able to overcome the difficulties associated with resisting the dominant discourse of risk and are successful in enacting alternative ways of organizing risk, this dominant discourse will continue to privilege certain forms of knowledge and identities in each mode. As a result, resistance may, ironically, contribute to *greater* ‘riskification’ (Heller, 2002) as more and more organizing is carried out in the name of risk.

THE DOMINANT DISCOURSE OF RISK

In recent decades, the language of ‘risk’ – terms that include risky, risk-free, high risk, risk appetite, risk averse, acceptable risk, etc. – have become commonplace in both expert and popular ways of talking about domains as diverse as finance and insurance, medicine and health, environment and business. Similarly, the application of risk practices and techniques has become routine in dealing with a wide range of hazards – from Severe Acute Respiratory Syndrome (SARS) to mad cow disease, from the pesticide DDT to the chemical bisphenol A (BPA) found in polycarbonate baby bottles, from mortgage defaults to stock market volatility, from forest fires to earthquakes, and from consumer boycotts to operating accidents. As we explain in the remainder of this section, such examples are indicative of a dominant discourse of risk, which permeates contemporary society.

Discourses are defined as collections of interrelated texts and practices “that systematically form the objects of which they speak” (Foucault, 1979: 49). Collectively, these texts and practices provide a coherent way of representing people, events, ideas and things – one that is expressed and enacted across a range of different settings, and which rules in certain ways of talking and acting in relation to a topic and rules out others (Phillips, Lawrence & Hardy, 2004). Discourse is not, therefore, merely a means “of representing the world, but [also] of signifying the world, constituting and

constructing the world in meaning” (Fairclough, 1992: 64). Material and ideational phenomena are given meanings through the way in which they are included (or excluded), ordered and categorized. In this way, discourse brings into being “situations, objects of knowledge, and the social identities of and relations between people and groups of people” (Fairclough & Wodak, 1997: 258). In other words, discourses “do not just describe things; they *do* things” (Potter & Wetherell, 1987: 6).

The discourse of risk is constituted by texts and practices that systematically bring ‘risk’, as an object of knowledge, into existence. Examples of texts include scientific articles in the journal *Risk Analysis* or the other 11 journals listed on the Society for Risk Analysis website, as well countless other scientific, engineering, medical, legal and environmental journals, textbooks on risk assessment and risk management, ISO risk management principles and guidelines, emergency preparedness handbooks, emergency procedure manuals, emergency preparedness checklists, aggregated risk data reports, accident reviews, inquiry reports, submissions to public hearings, compliance reports, actuarial reports, media stories, government legislation, annual reports, scientific and technical reports, etc. In addition, a myriad of practices are involved in organizing risk, such as the use of probability and statistical techniques, preparation of risk matrices, carrying out event tree/fault tree analysis, calculating risk-benefit ratios, preparing emergency preparedness plans, filling in emergency preparedness checklists, rehearsing accident protocols, conducting emergency simulations, monitoring for early warnings, auditing, completing accident or incident reports, holding hearings, calling witnesses, drafting inquiry reports, processing data to update actuarial tables, etc. These interrelated texts and practices are the means by which we ‘know’ risk (see Table 1).

[T]he discourses, strategies, practices and institutions around a phenomenon such as risk serve to bring it into being, to construct it as a phenomenon. It is argued that it is only through these discourses, strategies, practices and institutions that we come to know ‘risk’. They produce ‘truths’ on risk that are then the basis for action (Lupton, 2013:

Kindle location 1536).

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A discourse is said to be dominant when the texts and practices that comprise it draw on one another in well-established ways to construct convergent and widely shared descriptions and explanations of phenomena (Phillips et al., 2004). A dominant discourse thus provides a clear language “for talking about a topic and ... a particular kind of knowledge about a topic” (du Gay 1996: 43). It produces clear meanings about “who and what is ‘normal’, standard and acceptable, thereby institutionalizing practices and reproducing behaviour” (Hardy & Maguire, 2010: 1367) such that a particular view of ‘reality’ becomes reified and taken-for-granted (Maguire & Hardy, 2009).

In the case of risk, the texts and practices described above draw on each other in well-established ways, revolving around realist and objective assumptions (Gephart et al., 2009), to construct a convergent and widely shared meaning of risk as “a tangible by-product of natural and social processes [that] can be objectively mapped, measured, and controlled, at least to the extent that science permits” (Jasanoff, 1998: 94). Risk is thus commonly understood to be the probability of an adverse effect or negative event of some magnitude – a harm, hazard or danger of some kind – that can be managed if the likelihood of its occurrence and nature of its effects can be accurately assessed (Danley, 2005). Risk assessment – the process whereby the risk is identified – is understood as ‘science’ i.e., it is evidence- and fact-based, and also value-free through the application of widely recognized and highly institutionalized procedures and techniques. Risk management, on the other hand, is understood to be ‘policy’ i.e., deciding what to do to avoid or reduce identified risks, which is necessarily values-based since it involves trade-offs between multiple objectives.

A dominant discourse produces clearly defined, convergent bodies of knowledge (Foucault, 1980). According to this view, knowledge is not ‘discovered’ but, rather, is produced by those constructed as authoritative figures, and as a result of conforming to accepted procedures and protocols

(Ainsworth & Hardy, 2012). Knowledge is always contingent upon the discourses prevailing in the context in which it is situated – these discourses not only produce particular kinds of knowledge, they also establish various, institutionalized mechanisms that establish the basis for determining which statements count as true or false (Knights, 1992; Townley, 1993). Foucault refers to these mechanisms as ‘regimes of truth’.

Each society has its regime of truth, its ‘general’ politics of truth: that is, the type of discourse which it accepts and makes function as true; the mechanisms and instances which enable one to distinguish true and false statements, the means by which each is sanctioned; and the techniques and procedures accorded value in the acquisition of truth; the status of those who are charged with saying what counts as true (Foucault, 1980: 131).

In the case of the dominant discourse of risk, texts and practices come together to produce a very clear, body of risk knowledge predicated on the rational analysis of experts.

[Risk knowledge] emphasizes the role of professional languages (such as quantitative risk assessment) and analytic practices (such as cost-benefit analysis) in shaping public perceptions of risk. Authoritative knowledge is created in this framework by people or institutions that master the relevant formal discourses (Jasanoff, 1998: 94).

This body of knowledge assumes that risk is ‘true’ insofar as its existence can be determined, accurately and objectively, through the application of scientific knowledge derived from the past in highly institutionalized ways, such as the employment of scientific measurement and analytical reasoning, and the application of specific, widely accepted risk analysis and measurement techniques (Knights & Vurdubakis, 2003; Lupton, 2013).

Discourses also create certain categories of identity as meaningful and legitimate. Only those individuals who can take up these identities are able to speak and act, and not all individuals are able to

take up all identities (Maguire, Hardy, & Lawrence, 2004). Within the dominant discourse of risk, key categories of identity include: risk assessors who determine the nature, level and probability of harm, damage or loss; risk managers who are responsible for reducing risk to some level deemed acceptable; risk producers whose actions potentially generate hazards or cause harms, damage or losses; and risk bearers who are harmed or bear damage or losses when hazards are realized. As our subsequent analysis shows, two other risk identities are also produced by this dominant discourse: risk arbiters who are responsible for overseeing responses to risk incidents as they unfold in real-time and who supervise the actions of front-line workers; and risk adjudicators, who review incidents where risks have (or have almost) materialized to determine, after the fact, who produced the risk and who bore it, as well as who should have assessed or managed it more effectively.

The dominant discourse, by representing individuals, objects and activities in particular ways, allows certain actors (i.e., those who are capable of taking up particular risk identities) to construct what constitutes a risk, and to decide how to avoid or manage it by calculating the nature, extent and likelihood of possible hazards under different scenarios (Dean, 1999; Lupton, 2013). By “determining the ‘real’ probability of an adverse event multiplied by the true magnitude and severity of consequences,” risk becomes “identifiable through scientific measurement and calculation, and [can] be controlled using such knowledge” (Gephart et al., 2009: 143). The dominant discourse of risk thus revolves around normalizing risk – rendering unpredictable and uncontrollable hazards into, knowable and manageable risks (Beck, 1992; Giddens, 1999a; Lupton, 2013).

Discourse, Power and Resistance

Power relations are established, implemented and consolidated through discourse and the meanings it creates.

To the extent that meanings become fixed or reified in certain forms, which then articulate particular practices, agents and relations, this fixity is power. Power is the

apparent order of taken-for granted categories of existence, as they are fixed and represented in a myriad of discursive forms and practices (Clegg 1989: 183).

The dominant discourse of risk is thus an instrument and effect of power. In talking about power in this way, we are not referring to a relationship where one actor possesses control over or is less dependent upon another, or where outcomes are attributable to individual actors using resources intentionally, strategically and advantageously. Instead, we conceptualize a web of power relations that enables and constrains all actors, albeit unequally and in different ways.

Power must be analyzed as something which circulates, or rather something which only functions in the form of a chain. It is never localized here or there, never in anybody's hands, never appropriated as a commodity or piece of wealth. Power is employed and exercised through a net-like organization. And not only do individuals circulate between its threads; they are always in the position of simultaneously undergoing and exercising this power (Foucault, 1980: 98).

This does not mean that actors do not intervene in attempts to bring about particular outcomes but, rather, that outcomes cannot be attributed in a straightforward way to the actions of particular actors, even elite ones, since no actor can completely escape the discourse of risk that orients and regulates their activities. A discourse is thus more than a "way of seeing" – its power effects are such that it reproduces "that way of seeing as the 'truth,'" making it difficult to conceive of and enact alternatives (Knights & Morgan, 1991: 253).

This is not to say that discourses – even dominant ones – are completely deterministic and totalizing. There is always scope for resistance. As Foucault (1978: 100-101) points out, discourse is not only a point through which power circulates; it is also "a point of resistance and a starting point for an opposing strategy". Discourses – even dominant ones – are never completely cohesive; they are "partial, often crosscut by inconsistencies and contradiction, and almost always contested to some

degree” (Hardy & Phillips, 2004: 304). In addition, actors are positioned in multiple discourses, including grand, muscular ‘big D’ Discourses, such as the dominant discourse of risk on which we focus, but also other more localized ‘little d’ discourses e.g., conversations inside an organization about specific risks to valued outcomes such as the on-time and on-budget completion of a certain project (Alvesson & Kärreman, 2000; also see Fairhurst & Putnam, 2004). Multiple discourses allow actors to play off one discourse against another or draw on multiple discourses to create new meanings, which can have important local effects, even if such resistance does not completely replace the dominant discourse (Hardy & Thomas, 2013). In the following section, we examine how the dominant discourse shapes the organizing of risk in each of the three modes, as well as the possibilities for resistance through alternative ways of organizing risk.

A FOUCAULDIAN FRAMEWORK FOR UNDERSTANDING THE ORGANIZING OF RISK

Organizations seek to organize specific risks but they do so under different circumstances: sometimes, the aim is to avoid or manage risks that are believed will develop in the future; sometimes, there is a need to deal with risks that are perceived to be materializing in real-time; and sometimes, organizations seek to review and learn from risk incidents that have arisen in the past. There may also be cases where organizations face all three circumstances over time (e.g., Gephart, 1993; Gephart & Pitter, 1993; Turner, 1976). By drawing from and linking three separate streams of organizational literature, we identify three modes for organizing risk – prospectively, in real-time, and retrospectively – which are situated in this dominant discourse of risk. In this section, we theorize the way in which risk is most likely to be organized in each mode as a result of the dominant discourse. We postulate that although common, these ways of organizing risk are limited in their ability to deal with risks that appear unfamiliar and systemic; risks that seem to materialize in unexpected ways; or where there is a desire for significant changes in the future organizing of risk. We therefore propose an alternative way of organizing in each mode, which, we argue, is more likely to be more effective in addressing these

limitations, although it is difficult to enact because of the way the dominant discourse of risk privileges certain forms of knowledge and authorizes particular identities over others.

Organizing Risks Prospectively

The traditional literature on risk analysis assumes the existence of risks that must be identified and managed. It theorizes and develops risk assessment and management techniques that are intended to identify the likelihood that events with negative effects will arise in the future, predict the nature and magnitude of these effects, and ascertain the appropriate way to address them. It emphasizes the prospective organizing of risk – anticipating future adverse events so that actions can be taken to avoid or manage them – and is closely associated with the dominant discourse of risk.

Risk is conceptualized in probabilistic terms that, with the help of hypothesis testing, forecasting, scenario analyses and actuarial science, provide the basis for calculative, rational decisions on risk (Miller, 2009).

The traditional technical foundation of risk management is risk analysis, a discipline whose strength consists in its machine-like, engineering quality. Standard conceptions of risk analysis focus on identifying, measuring and evaluating possible outcomes from both natural and technological hazards (Hutter & Power, 2005: 7).

It is this process of measurement and quantification that normalizes unpredictable hazards by turning them into predictable risks through sophisticated quantitative modelling. This “mathematizing” of risk (MacKenzie, 2005) dominates the finance and insurance industries, where risk is measured with a view to maximizing gains through the myriad of financial risk management techniques that have grown out of the Black–Scholes–Merton model (Millo & MacKenzie, 2009). It underpins such techniques as enterprise resource management (Power, 2007), the COSO (Committee of Sponsoring Organizations of the Treadway Commission) framework (Power, 2009), and Basel II/III (Basel Committee on Banking Supervision, 2006).

The prospective mode for organizing risk also features in the case of health and environmental risks (Heimer, Petty & Culyha, 2005). Normal science and the scientific method are used by government agencies, such as the US Environmental Protection Agency and the European Chemicals Agency, to assess whether chemicals are likely to damage human health or the environment in unacceptable ways, and to regulate the firms that produce and use these chemicals accordingly. A similar approach underpins the regulatory governance of other hazard-producing industries, such as nuclear power, mining, and transportation, where government agencies stipulate standards to which organizations should conform, based on measurement, specification, and auditing (Hutter, 2011), by drawing on technical risk-based tools developed from economics and the natural sciences (Lloyd-Bostock & Hutter, 2008). In the case of large infrastructure projects (e.g. the construction of oil and gas pipelines), practices of holding hearings and preparing environmental risk assessment documents prior to project commencement are also used to organize risks prospectively.

The prospective mode appears to emphasize the future i.e., predicting and preventing (or at least minimizing) risk in attempts to influence *what may happen*. However, it does so by extrapolating from the past – abstracting from the sum total of what is known from the past involving the risk in question. This past is empirical in that it results from scientific experiments, epidemiology studies, aggregated data about the frequency of extreme weather events, financial analyses, an organization’s historical data on supply chain interruptions, studies of machinery breakdowns, etc. This knowledge is then abstracted into regularities, such as ‘facts’, correlations, causal relationships, models, formulae and laws, which are then applied to a hypothetical future in which the risk is implicated. The aim is to avoid this future if possible, by ensuring the risk does not arise; or to be ready to manage it through the preparation of plans, scripts and protocols in the event that it does.

When risk is organized prospectively, the various risk identities are relatively clear and distinct, and the relations among them well institutionalized. Typically, risk assessors – scientific, technical or

organizational experts – produce knowledge concerning the likelihood that some actors (risk producers) may cause adverse events that lead to harm to other actors (risk bearers). The prospective organizing of risk is typically mediated and decontextualized. Risk is assessed prior to when, and away from where, it might materialize i.e., in scientific laboratories, actuarial firms, and various types of safety or risk management departments that are separated from the sites where adverse effects might occur. On the basis of the knowledge produced by risk assessors, risk managers – who may be managers inside the organization or regulators in government – authorize and sanction action to restrict or reduce the activities of risk producers in order to protect the risk bearers, which might be the general public, individuals working in the organization, or the organization itself. Not all these risk identities are equally accessible, however, with the result that high status professionals such as scientists, financial analysts and other experts retain control of the identification of risk (Jasanoff, 1998).

The expert, technical/scientific, and universalistic body of knowledge produced by risk assessors is inseparable from the prospective organizing of risk.

What is important about risk is not risk itself, but the forms of knowledge that make it thinkable from statistics, sociology and epidemiology to management and accounting, the techniques that discover it from the calculus of probabilities to the interview, the social technologies that seek to govern it from risk screening, case-management and social insurance to situational crime prevention (Dean, 1999: 131-2).

This knowledge is assumed to be authoritative, unbiased, reliable and complete, thereby producing confidence in its ability to accurately identify the likelihood and magnitude of negative events. In contrast, lay knowledge is framed as politicized and irrational. Whereas experts are understood to produce ‘assessments’ of risks, lay people are understood to have mere ‘perceptions’ of risk – a distortion of ‘actual’ risk as defined by experts (Gephart, et al., 2009; Jasanoff, 1998). Lay knowledge is ‘subjective’, whereas expert technical knowledge is assumed to be objective, even though by

identifying and measuring risks, technical experts actively construct them through the particular methods and techniques they use (Feldman, 2004).

To summarize, our argument is that, as a result of the dominant discourse of risk, the most common way of organizing risk prospectively is through the production of expert risk knowledge derived from empirical information about the past, which has been abstracted into regularities in the form of facts, correlations and causal models, and applied to a hypothetical future by risk assessors. This knowledge then forms the basis of actions taken by risk managers to protect risk bearers and restrict risk producers.

Even though this way of organizing risk prospectively may deal well with familiar, specific risks, it can never fully predict and control all possible future hazards (Beck, 1992; Crook, 2011; Dean, 1999; Elliott, 2002). Organizations face complexity (cause and effect are hard to determine); ambiguity (different interpretations arise from the same data); and ignorance (what is not known is not known) about what may or may not constitute a risk (e.g., Renn, 2003; Wynne, 1992). Not all hazards are amenable to quantification and prediction. Some are too complex to “fit into a traditional linear problem-solving model” (Etkin & Ho, 2007: 623). Ambiguity regarding the costs of risky behaviour also undermines a rational approach to risk (Bansal & Clelland, 2004; Guillén & Suárez, 2010). There are, as a result, particular difficulties in dealing with new, unfamiliar risks where it is unclear what the hazards are, let alone how to calculate their likelihood (Beck, 1992). In such situations, information is unavailable, uncertain and/or ambiguous as, for example, with genetically modified organisms. Similarly with systemic risks, information is complex, contingent and contradictory. There are countless permutations, possibilities, feedback loops and complications, which cannot be meaningfully reduced to discrete predictions as, for example, with the GFC.

In such cases, we suggest that is important to problematize traditional risk knowledge drawn from the past by drawing attention to discontinuity and uncertainty in knowledge about risks, rather

than accepting existing models, the extant scientific literature, and the dominance of expert knowledge (Maguire & Hardy, 2013). Problematizing involves questioning the nature of the “existing attention to risk and its model of identification, recognition and definition” (Hutter & Power, 2005: 11). It also involves questioning the hierarchy of relations among distinct risk identities. This means challenging the privileged position of risk assessors in producing risk knowledge by drawing on alternative discourses such as participation, deliberation, and precaution to include more stakeholders, increase public involvement and introduce lay knowledge (Stirling, 2008). Thus, the singularity and distinctiveness of risk identities breaks down in the case of unfamiliar and systemic risks, where it is not always obvious whose actions may cause harm or to whom, who should participate in ascertaining harms or deliberating their acceptability, or on whose behalf risks are to be managed. For example, in the GFC, risk assessors and managers were also risk producers – part of the problem, although not recognized as such at the time – and became risk bearers as their institutions collapsed; the absence of expert knowledge to identify the financial risks called the identity of ‘expert’ risk assessor into question; and many risk managers were compromised as they focused on individual institutions at the expense of both the wider financial systems and customers who did not understand the financial products they bought. Treating actors as clearly falling into distinct, fixed categories of risk identity when the situation is complex, fluid and equivocal, makes it difficult to comprehend and address unfamiliar and systemic risks.

We therefore propose that the prospective organizing of risk is better able to deal with unfamiliar and systemic risks when it problematizes existing expert risk knowledge and the ability of the past to predict the future, incorporates lay knowledge produced by risk bearers and other risk identities, and challenges the hierarchy of risk identities. However, enacting this alternative way of organizing risk prospectively is difficult because the dominant discourse of risk privileges expert risk knowledge in the form of facts, correlations and causal models over other forms of knowledge, and

authorizes risk assessors to produce it and risk managers to act on it over other risk identities.

Organizing Risks in Real-Time

The literature on how organizations respond to accidents, disasters and crises, and on how high reliability organizations try to avoid them, provides insight into a second mode for organizing risk, which is employed when risks are believed to be materializing and have to be organized in real-time. Examples include the case of ‘mad cow’ disease (Pidgeon, Kasperson & Slovic, 2003), the Challenger and Columbia disasters (Feldman, 2004), Three Mile Island (Hopkins, 2001), Deepwater Horizon (Hopkins, 2011), Mann Gulch (Weick, 1993), and 9/11 (Hood, 2005) to name but a few; not to mention numerous accidents in coalmines, nuclear plants, airlines, aircraft carriers, oil rigs, nuclear submarines, etc. (e.g., Heimann, 2005; Hopkins, 1999; Perin, 2005; Perrow, 1999; Sauer, 2003; Vaughan, 2005). In these situations, materializing risks are typically normalized through the implementation of plans, scripts and protocols (produced previously through the prospective organizing of risk) within and across organizations. Risk knowledge derived from technical, empirical information and past experience has been abstracted by experts into regularities, to be applied by other individuals at a specific point in time in the event that a risk does begin to materialize. By anticipating the pattern of materialization, these plans, scripts and protocols act as risk-management tools and are intended to control and contain risks as they emerge.

The real-time organizing of risk involves implementing a range of pre-determined response mechanisms triggered by metrics, thresholds and heuristics, as well as instituting various forms of communication and coordination among those involved in responding to the risk. These practices are intended to control the unfolding of adverse events and contain their damage through the application of elaborate and clearly defined rules, detailed and well documented operating procedures, as well as a clear-cut, chain-of-command authority (Hood, 2005). For example, when SARS hit Toronto, Canada in 2003, the Premier of Ontario declared a provincial health emergency, which triggered specific routines

inside and across numerous organizations. “A Provincial Operations Centre (POC) and a Scientific Advisory Group were established, both of which included representatives from the province, Toronto Public Health (TPH) and other health facilities. The POC issued a wide range of directives to hospitals and other institutions, establishing stringent infection control requirements. Hand washing and symptom screening were instituted for anyone entering a health facility, and staff and visitors were required to wear gloves, gowns and masks in patient care areas” (Basrur, 2003). A similar, predetermined “command structure” was put in place inside the hospitals as “infection control procedures took precedence over almost all other aspects of hospital function”: directives were issued, physical access to hospitals was restricted, and non-essential workers and visitors were told to stay at home (Maunder, 2004: 1118).

During the process of a risk materializing, developments are carefully monitored and evaluated by risk ‘arbiters’, who could be senior risk managers, compliance officers or oversight panels inside the organization; or emergency and security experts or coordinating committees from outside the organization. These actors are responsible for overseeing responses when risk incidents are unfolding, and ensuring compliance with pre-determined plans, scripts and protocols, or determining and authorizing adjustments. The role of risk arbiters is to engage in prepared routines of monitoring the risk as it materializes and to decide which responses are to be deployed by front-line workers. There is an emphasis on top-down command and control protocols, where successive hierarchical levels or external agencies cross-check attempts to contain the risk, monitor progress, coordinate actions, and give approval for changes in routines as the risk is deemed to worsen or diminish (e.g., Bigley & Roberts, 2001; Leveson et al., 2009; Roberts, 1990). So, for example, in the ‘three lines of defence’ used in many banks to manage financial risks, front-line employees are overseen on an ongoing basis by a ‘second line’ of defence made up of employees in risk management, finance and human resources (Trundle, 2012). Responses to an outbreak of ‘foot and mouth’ disease in cattle in the UK in 2007 were

directed by the Cabinet Office Briefing Room, the Government's central crisis management committee, which had ultimate authority for handling the risks nationally. Other risk arbiters during the outbreak included the Chief Veterinary Officer and a series of Regional Operations Directors who dealt with operational risks and oversaw regional responses, passing information up the line and instructions down the line, in accordance with the contingency plan (Anderson, 2008).

The real-time organizing of risk is similar to the prospective organizing of risk in that it also involves extrapolating from the past. However, in this case, past knowledge is deployed to manage the present i.e., as what may happen becomes *what is happening*. Whereas the prospective organizing of risk revolves around identifying risks that *might* materialize in a hypothetical future, in real-time these risks *are* materializing in the present. Technical, empirical knowledge about the type of risk, the characteristics of its materialization, and appropriate responses are built into plans, scripts and protocols developed by experts, which are subsequently implemented by those dealing directly with the materializing risk, under the oversight of risk arbiters. The expert knowledge built into plans, scripts and protocols specifies precise data to be collected and monitored by these local actors as when, for example, employees at a chemical manufacturing facility are required to monitor the temperature and pressure inside reactors and to intervene in specific ways if measures indicate that predetermined safety limits for these metrics have been breached.

These local actors thus become responsible for concurrently assessing and managing risk at the same time as they are often also directly harmed if the risk is not controlled or contained. This is most evident in the case of accidents and disasters, as in the Fukushima disaster when TEPCO employees and emergency workers had to assess the risk of a meltdown and take measures to prevent it, while risking their own lives to do so; or in the case with SARS, where front line health workers in Ontario's health care system had to deal with greater exposure to the virus. It can also be seen in situations where board members, executives, managers and employees are responsible for identifying and managing

legal, strategic, reputational and operational risks, at the same time as being subject to them. Many of those responsible for assessing and managing financial risks in the GFC also bore the risk of losing their jobs if they were not successful. Consequently, rather than risk assessors, managers, and bearers being clearly distinguished as is the case with the prospective mode, these risk identities are often blurred when risk is organized in real-time although, typically, this combined identity of risk assessor-cum-manager-cum-bearer remains separate from and subordinate to risk arbiters.

To summarize, our argument is that, as a result of the dominant discourse of risk, the most common way of organizing risk in real-time is through the implementation of expert risk knowledge derived from empirical information about the past, which has been abstracted into regularities in the form of plans, scripts and protocols. This knowledge then forms the basis of actions taken in a specific present by risk assessors-cum-managers-cum-bearers, subject to endorsement from risk arbiters.

Even though plans may function well when risks materialize according to predetermined scenarios and trajectories, they are less effective when risks deviate from expectations, and when organizations face unknown or unexpected situations where the risks may not be self-evident. Under such circumstances, it may be important to problematize existing expert risk knowledge and question the ability of this past knowledge to deal with the present. A “generalizable set of practices and procedures” can never be fully and adequately formulated “prior to an understanding of material conditions in local environments” (Sauer, 2003: 182). Prepared plans only provide very general guidelines regarding *some* signs of pending hazards. In real-time, individuals experience these signs, but also other stimuli that may, or may not, be signals of danger. They must interpret the correct signals, ignore others, and adapt as circumstances dictate; and they must improvise to deal with circumstances not covered in existing plans and scripts (e.g., Ash & Smallman, 2008; Maitlis & Sonenshein, 2010; Whiteman & Cooper, 2011). Consequently, even the best-laid plans will require contextualizing, customizing and adapting in real-time as the risk materializes and deviates in some

way from what was anticipated.

Different forms of knowledge may be vital to risk assessors-cum-managers-cum-bearers in order to deal with risks that materialize in unexpected ways from those predicted in plans and scripts. In coal mining, for example, embodied, sensory knowledge is important. The ability to assess the risk of a shaft collapsing may owe a considerable amount to the ability to smell gases, spot cracks, and hear noises (Kamoche & Maguire, 2010).

In the darkness of a mine, miners use all of their senses to see, hear and smell hazards around them ... It exists in the ability of the human body to feel changes in pressure and to hear differences in sounds. Thus pops indicate the pressure of methane; bumps indicate yielding pillars. When timbers fail, miners hear cracks that warn them (Sauer, 2003: 189).

Such knowledge is relevant to all types of risk. One doesn't have to be down a coalmine or in a nuclear energy facility for things to 'feel' wrong, for a balance sheet not to 'look' right; for conversations with employees to 'sound' like a strike is looming, or for a new business strategy to 'seem' problematic. Gut feel, hunches or intuitions, as well as emotions like unease or worry, and using all five senses may be vital to dealing with risks as they arise. Validating such knowledge, as well as the authority of people throughout the organization, at all levels, to produce and act on it, facilitates the ability of the organization to improvise and adapt when dealing with risks that materialize in unexpected ways.

To make complex judgments concerning risk, especially under time pressure and in unexpected circumstances, risk assessors-cum-managers-cum-bearers may want to reject codified knowledge expressed in plans, scripts and protocols and to act on the basis of their tacit, sensory and embodied knowledge. However, the latter is often considered to be of dubious status and may not be accepted as a legitimate way to assess and manage risk, especially if it is at odds with the command and control protocols activated in the event of an emergency or crisis (Perin, 2005). Research has shown that

individuals who draw on experiential – tacit, sensory, embodied – knowledge are often ignored by more senior managers – risk arbiters – when they point to particular danger signs or try to deviate from prescribed plans, scripts and protocols (Naevstad, 2008). Such knowledge is simply dismissed as ‘old wives tales’ (Kamoche & Maguire, 2010). Individuals may even abdicate their own responsibility for monitoring and dealing with risk because they believe that the general expertise of superiors is more relevant than their own situational knowledge (Barton & Sutcliffe, 2009). However, unless the status of the risk knowledge that risk assessors-cum-managers-cum-bearers produce and act upon is validated and unless they have discretion to also act as risk arbiters, their ability to adapt and improvise will be limited.

We therefore propose that the real-time organizing risk is better able to deal with risks that materialize unpredictably and deviate from expected scenarios when it problematizes existing expert risk knowledge and the ability of the past to apply to the present, incorporates the experiential knowledge of locally situated risk assessors-cum-managers-cum-bearers, and challenges the hierarchy of risk identities. However, enacting this alternative way of organizing risk in real-time is difficult because the dominant discourse of risk privileges expert risk knowledge in the form of previously produced plans, scripts and protocols over other forms of knowledge, and authorizes risk arbiters over other risk identities.

Organizing Risks Retrospectively

The stream of organizational literature on public inquiries indicates a third mode in which risks are organized – retrospectively, ostensibly with a view to improving both the prospective and real-time organizing of risk. High profile events with significant negative effects, like the GFC and Fukushima, as well as ‘near misses’ often attract formal investigations after the fact (although this is not to deny that some incidents are ‘swept under the carpet’ and not reviewed). There is, as a result, a considerable amount of literature on public inquiries and hearings set up to investigate risks related to activities as

diverse as oil drilling (Brown, 2004), heatwaves (Boudes & Laroche, 2009), arms sales (Brown & Jones 2000), oil pipeline operations (Gephart, 1993), and meat production (Jasanoff, 2005); as well as on investigations by regulatory agencies, such as the National Highway Traffic Safety Administration's inquiry into the Ford Pinto (Danley, 2005), the US Mine Safety and Health Administration's examination of coal mining accidents (Madsen, 2009), and the UK's General Medical Council investigations of health risks (Lloyd-Bostock & Hutter, 2008).

Inquiries and reviews are not, however, held only in response to individual accidents and disasters; they are also established in relation to a wide range of economic and social problems that have come to be talked about in terms of risks. Thus the risks associated with, for example, demographic shifts (e.g., inquiries on the aging population and the risk of unemployment of elderly workers), social issues (e.g., reviews of early childhood development services and the risk of criminal behaviour by young offenders), mental and medical health concerns (e.g., inquiries into gambling and the risk of addiction), and economic matters (e.g., reviews of government entitlement programs and the risk of their insolvency) are organized retrospectively by governments through various forms of inquiry. Finally, although the subject of far less research, organizations conduct their own internal reviews by investigating risk incidents (and 'near misses'). Organizations also draw on routines to organize risk retrospectively, such as regularly scheduled internal audits, as in the 'third line' of defence in banks, where internal and external auditors review transactions after the fact to establish whether financial risks have been handled appropriately (Trundle, 2012). In all these examples, past events and behaviours are reviewed in order to organize risk retrospectively i.e., to ascertain what happened in the past and whether there is a need for change in the future.

In the retrospective mode for organizing risk, various forms of deliberation – from formal inquiries to ad hoc, internal reviews – are intended to produce new expert risk knowledge, i.e. a holistic, convergent account of what happened, coupled with lessons and recommendations for

improving risk assessment and management in the future. In reviewing previous incidents in order to improve how risk is organized in the future, the retrospective organizing of risk is typically mediated and decontextualized: events, actions and timelines are reconstructed afterwards by, and including the views of, actors not directly involved in the incident under examination. For example, public inquiries rely heavily on expert knowledge (Aitken, 2009) and are characterized by a culture of regulatory science (Goven, 2006), which uses “precise measurement of the hazards as a basis for initiating rule governed actions” to control them (Gephart, 1997: 583). Independent professionals, who typically were not directly involved in the incident, are called upon to give their opinions based on their expert knowledge of the risk in question. Witnesses directly involved in trying to manage the risk prospectively or in real-time also recount their partial, situated experiences of the incident, which are then aggregated, although research has found that such subjective, anecdotal knowledge is typically subordinated to expert knowledge (e.g., Ainsworth & Hardy, 2012; Gephart, 1997). In the case of internal reviews, experts might be called in from other departments inside the organization e.g., from the accounting department to conduct a forensic audit or from the safety department to investigate workplace risks. Various analytical procedures based on expert risk knowledge are used (e.g., to compare performance at different points in time, different business units with one another, or the organization against benchmarked targets), coupled with subjective evidence gained through discussions and interviews with employees (e.g., Vasudevan, 2004).

The retrospective organizing of risk involves investigating the roles played by various individuals to identify those actors who failed to assess or manage it satisfactorily, and those actors who were harmed as a consequence (Gephart, 1984; Gephart, Steier & Lawrence, 1990; Hutter, 2005). The concept of risk acts as a ‘forensic resource’ with which to hold persons accountable and attribute blame (Douglas, 1990). As a result of this process, risk ‘adjudicators’ – who could be panel members in the case of a public inquiry or senior managers in the organization in an internal review – assign risk

identities and evaluate their actions. These risk adjudicators determine who produced the risk and who bore it, as well as who should have assessed or managed it more effectively. Causality is inferred, actors' roles are assigned, and praise and blame are distributed (Boudes & Laroche, 2009; Brown, 2000; Winch & Maytorena, 2009).

Typically, a single, coherent narrative is constructed by the risk adjudicator of *what did happen* by aggregating and abstracting the partial knowledge of various participants in the hearing or review into a holistic account of the past – one that makes sense to diverse stakeholders, ameliorates anxiety by explaining how and why the negative event occurred, and attributes responsibility (Gephart, 1993; 2007). In this way, the retrospective mode normalizes risk through the construction of a holistic, convergent, authoritative account, which is then abstracted into regularities in the form of lessons and recommendations that are applied to a hypothetical future, by recommending *what should happen* i.e., what risk assessors, managers, producers and bearers should do to deal with risk if similar circumstances arise.

To summarize, our argument is that, as a result of the dominant discourse of risk, the most common way of organizing risk retrospectively is through the production of expert risk knowledge derived from empirical information about the past, which has been abstracted into regularities in the form of a holistic, convergent account containing lessons and recommendations by risk adjudicators. This knowledge then forms the basis of actions to be taken in the future by other risk identities.

Even though the retrospective organizing of risk can lead to recommendations for improving the organizing of risk in the future, these recommendations typically fail to bring about significant change (e.g., Brown, 2004; Boudes & Laroche, 2009). As, for example, the GFC shows, despite previous experience, past same mistakes are often repeated:

Before the 2008 subprime U.S. mortgage crisis, there was the 1988 savings and loan crisis. Whether rare events are costly or beneficial, looking back we are often surprised

at the failure of organizations to draw appropriate lessons (Lampel, Shamsie & Shapira, 2009: 835).

One reason for this is that inquiries, hearings and reviews are typically established by elite actors associated with privileged economic and administrative interests, often with narrow terms of reference that reduce the scope of investigation (Kendra, 2007). In adjudicating not only on what did happen but also on what should have happened, counterfactual reasoning is required – a type of reasoning that is inevitably compromised by the cognitive styles and ideological biases of elites (Tetlock, 1999; Tetlock & Lebow, 2001). The narratives produced are therefore more likely to call for the restoration of existing systems, albeit with some minor amendments, than for a fundamental overhaul of them (Brown, 2004; Kendra, 2007; Topal, 2009) as when, for example, risks are attributed to individuals such as rogue traders instead of financial systems (e.g., Wexler, 2010); to managerially incompetent doctors rather than the medical profession as a whole (Brown, 2000); or to individual bureaucrats but not the health system as a whole (Boudes & Laroche, 2009).

Another reason why the holistic accounts of the past that are crafted in inquiries and reviews often fail to provide a basis for significant change is because they are ‘notional’ i.e., it would have been impossible for any individual to have such an all-encompassing account of the risk at the time. Such knowledge can only exist as a result of aggregating partial accounts. For example, to claim that warning signals were ignored misses the point that they may have seemed irrelevant in real-time.

Warning signals [exist] only in hindsight. Before the accident takes place, it is hardly clear what these signals mean. Besides, there are often dozens of different signals, which cannot all be attended to simultaneously. It is extremely difficult to discriminate the real signals amongst the heap of noise and false warnings (Rijpma, 2003: 41).

Individuals only ever have a partial view of risk – “a situated but incomplete view of the whole” (Sauer, 2003; 227). There is, then, no single coherent narrative available to actors who must identify it

prospectively or deal with it in real time. Such accounts can only ever be constructed retrospectively by bringing a range of individuals together and, through the process of writing and revising a written report about the past with the benefit of time and hindsight, diverse, partial and/or contradictory views together into a convergent narrative. Problematizing existing expert risk knowledge and the ability of a holistic, convergent account of the past to add usefully to it therefore means recognizing that understandings of risk constructed *after* its materialization can never be the same as those constructed prior to or during its materialization.

Changing how risk is organized in the future to incorporate knowledge that is multiple, partial and contradictory requires ‘experience heterogeneity’ (Zollo, 2009), and the development of multi-causal explanations rather than identifying a single culprit or cause (Morath & Leary, 2004). The use of multiple, partial, situated accounts as the basis for new risk knowledge, rather than singular homogenized, collective accounts, is more consistent with individuals’ experience of risk in the future (i.e., incomplete and equivocal), rendering recommendations for change more meaningful and more practical. As a result, some forms of inquiry such as truth and reconciliation commissions, have not necessarily tried to identify a single truth of what happened. Rather, they have tried to discern the many truths of what happened by acknowledging that there is factual truth based on impartial and objective evidence, personal truth in the form of individuals’ stories, and social truth constructed through discussion and debate (Rushton, 2006).

Reviews and inquiries are sometimes able to avoid the typical naming, shaming and blaming by risk adjudicators and the assignation of perpetrators (risk producers, inadequate risk assessors, inadequate risk managers) and victims (risk bearers), as well as be more sceptical of so-called experts. Recommendations may be more likely to result in significant change in the future organizing of risk if they are predicated on the assumption that expert knowledge is fallible and alternative forms of knowledge are valid; and if they recognize that the power relations among risk producers, assessors,

managers and bearers stemming from the dominant discourse of risk are, themselves, implicated in the problems that the inquiry or review is ostensibly trying to solve. In this way, the foundation can be laid for the inclusion of alternative forms of lay knowledge in the prospective organizing of risk and the experiential, tacit knowledge of risk assessor-cum-manager-cum-bearers in the real-time organizing of risk. However, reconstructing risk identities in these complex and nuanced ways and rejecting holistic accounts is difficult since it involves challenging the authority of risk adjudicators, as well as the prevailing scientific/technical paradigm through which they, as well as experts, construct the specific risk in question.

We therefore propose that the retrospective organizing of risk is more likely to bring about significant changes in the future organizing of risk when it problematizes existing expert risk knowledge and the ability of a holistic, convergent account of the past to add usefully to it, incorporates partial experiential knowledge in the form of multiple, contradictory accounts, and challenges the hierarchy of risk identities. However, enacting this alternative way of organizing risk retrospectively is difficult because the dominant discourse of risk privileges expert risk knowledge in the form of a holistic, convergent account containing lessons and recommendations, and authorizes risk adjudicators over other risk identities.

Integrating the Modes: A Foucauldian Framework

In the section above, we have identified and linked three different modes for organizing risk, drawing on Foucauldian concepts, to provide an integrated framework (Table 2). The framework highlights how the dominant discourse of risk shapes organizing in all three modes, not only by increasing the tendency to organize risk through processes that are normalizing, but also by rendering these processes ‘normal’. The forms of risk knowledge and relations among risk identities associated with the common way of organizing in each mode are assumed to comprise a neutral, objective, rational and effective way to organize risk to the extent that they are taken for granted. Deviations from

them are viewed as arbitrary, idiosyncratic and politicized. Hence, even though the alternative ways of organizing risk may deal more effectively with certain situations, it is difficult for organizations to enact them because it requires resisting the dominant discourse of risk.

– TABLE 2 NEAR HERE –

It is important to note that we present three distinct modes for analytical purposes only. Organizations may move through more than one mode. For example, both the GFC and Fukushima provide evidence of failures in the prospective organizing of risk, which led to financial and physical risks materializing which then had to be organized in real-time with varying degrees of success. As a result of failures in both prospective and real-time organizing of risk in both cases, major inquiries were held to organize risk retrospectively. In neither case does the retrospective organizing of risk appear to have led to any fundamental changes in how such risks are managed: the US is now “even more concentrated in the hands of a few large, systemically significant institutions” (FCIC, 2011: xxvii); while, nuclear power seems firmly on Japan’s agenda despite the potential risks (Tabuchi, 2012). Thus we have a clear indication that all three modes may be involved – and may overlap – in the organizing of some risks.

It also important to note that the three modes for organizing risk occur both within individual organizations and across multiple organizations. So, for example, safety risks to employees or customers are organized prospectively by individual organizations through the development of internal, organization-specific workplace and product design policies; and by government regulations that apply across organizations, and which have been developed through consultation with industry associations, professional bodies, unions and consumer groups. Individual organizations manage risks in real-time as, for example, Johnson & Johnson had to do in when the safety of its customers and its own reputation were threatened by cyanide being added to Tylenol capsules; and the real-time organizing of risk also crosses organizational boundaries, as is clear from such examples as the GFC, the Fukushima

disaster, the SARS epidemic and 9/11. Risks are organized retrospectively within individual organizations through various forms of post-incident investigation, such as safety reviews, performance appraisals, and forensic audits; as well as across multiple organizations through public inquiries and hearings that bring diverse stakeholders together.

RESISTANCE AND RISKIFICATION

In this section, we continue with our Foucauldian analysis to explore further the profound impacts of the dominant discourse of risk on the three modes. We have already argued that enacting alternative ways of organizing risk is difficult because of the power relations associated with this discourse. We show here how, even when risk *is* organized differently (i.e., problematizing occurs, alternative forms of knowledge are incorporated into organizing, and understandings of risk identities are successfully challenged), the dominant discourse of risk continues to privilege existing bodies of risk knowledge and identities. As a result, resistance can serve to reinforce the prevailing power relations instead of transforming or overthrowing them, thereby reproducing the dominant discourse of risk and even extending its reach. We use three key Foucauldian concepts – intensification (Foucault, 1991; 2008), discipline (Foucault, 1979) and governmentality (Foucault, 2002; 2003) – to revisit each of the modes and to provide a ‘second order’ of critique by demonstrating how resistance may, ironically, contribute to greater ‘riskification’ (see Table 3). By riskification we refer to processes whereby risk becomes further entrenched as “the natural way to talk about a variety of concerns – not solely matters commonly associated with technical or physical ‘danger’ ... [but also] arenas ranging from business investing and marital questions to career development and social work” (Heller, 2002: 9). In other words, attempts to resist the dominant discourse of risk can lead to more and more organizing, across many more realms of social life, being carried out in the name of risk.

– TABLE 3 NEAR HERE –

Intensification and the Prospective Organizing of Risk

Intensification occurs as a discourse increases in efficiency, spread and saturation (Nealon, 2008) i.e., its effects become greater as more and more categories of individuals, society and the natural world are targeted while, at the same time, these effects become less visible, more taken-for-granted, and less contentious (Hardy & Thomas, 2014).

[Intensification means] firstly, to obtain the exercise of power at the lowest possible cost (economically, by the low expenditure it involves; politically, by its discretion, its low exteriorization, its relative invisibility, the little resistance it arouses); secondly, to bring the effects of this power to their maximum intensity and to extend them as far as possible without either failure or interval; thirdly, to link this ‘economic’ growth of power with the output of the apparatuses (educational, military, industrial or medical) within which it is exercised; in short to increase the docility and the utility of all the elements of the system (Foucault, 1979: 218).

The tendency of dominant discourses to intensify means that, even when new forms of knowledge and new identities are opened up through countervailing discourses, this resistance can come to be subsumed by the dominant discourse.

Intensification is clearly evident in the case of the dominant discourse of risk. As this discourse has become more pervasive and its effects more taken for granted, attempts to resist it are more likely to be subsumed by it, as a result of which they serve to reinforce it. For example, attempts to involve lay people and the general public in the discussion of technological risks to human health and the environment through deliberative democracy and participation have tended to require non-scientists to participate in scientific processes, such as when lay people are included in ‘extended *peer reviews*’ (Funtowicz & Ravetz, 1993). New identities have been constructed for the non-scientists, but as ‘citizen *scientists*’ (Fisher, Mahajan & Mitcham, 2006) who produce ‘citizen-*science*’ (Backstrand,

2003). These new identities remain firmly embedded within the scientific model that underpins the dominant discourse of risk. Similarly, in the case of indigenous stewardship of natural resources – a countervailing discourse relevant to many environmental risks – aboriginal knowledge has been folded into traditional western conceptions of knowledge to become “simply a new form of ‘data’ to be incorporated into existing management bureaucracies and acted upon by scientists and resource managers” (Nadasdy, 2003: 369).

Intensification effects can also arise when countervailing discourses are used to challenge the dominant discourse of risk. One such example is the discourse of precaution, which is based on the ‘precautionary principle’ enshrined in Principle 15 of the 1992 Rio Declaration on Environment and Development. Precaution foregrounds the uncertainty and incompleteness of scientific knowledge about risks (Stirling 1999), and it rejects scientific uncertainty regarding adverse effects as a justification for inaction when managing risks.

In order to protect the environment, the precautionary approach shall be widely applied by States according to their capabilities. Where there are threats of serious or irreversible damage, lack of full scientific certainty shall not be used as a reason for postponing cost-effective measures to prevent environmental degradation (UNCED 1992).

This discourse emphasizes that the “absence of evidence of harm is not the same as evidence of absence of harm” (Stirling, 2010: 1030). Precaution thus allows for action in situations when adverse effects are uncertain and lowers the burden of proof in providing evidence of these effects before restrictions are implemented. It has been used to challenge the privileged status of existing expert risk knowledge and of the risk assessors and risk managers whose positions derive from it; and to give greater voice to risk bearers in relation to uncertain risks posed by chemical pollution (Maguire & Hardy, 2006), genetically modified organisms (Van den Belt & Gremmen, 2002), consumer products

(Maguire & Hardy, 2013) and financial services (Crotty & Epstein, 2009), to name but a few.

The discourse of precaution appears to provide a way to resist the dominant discourse of risk insofar as it encourages action on *potential* harms, even in the absence of scientific facts. However, it still conceives of the future in terms of some form of a negative event that requires preventive action. The question then becomes: “how to act in the here and now before the full occurrence of a threat or danger” (Anderson, 2010: 780).

Precautionary risk introduces within the computation of the future its very limit, the infinity of uncertainty and potential damage. It is therefore exactly the opposite of prudence: if the latter recommended what ‘precautions’ to take under conditions of knowledge, the former demands that we act under scientific and causal uncertainty. The weight of the future is not simply that of contingency, but that of catastrophic contingency (Aradau & von Munster, 2007: 101).

So, for example, in the case of terrorism, the US National Security Strategy changed from “a posture of mutual deterrence to ‘anticipatory action’ against ‘[e]merging threats before they are fully formed’” (US Government, 2002: 4, quoted in Anderson, 2010: 790). Precaution has been invoked in ways that increasingly authorize the state to intervene more aggressively and on wider populations of potential risk producers e.g., not only against individuals categorized as potential terrorists but also against members of the general population (airline travellers, tourists) to defend society in the name of potential – but unproven – security risks. If terrorist suspects cannot be clearly identified through intelligence and profiling, wider forms of surveillance are employed to target more individuals. For certain categories of people, it is no longer up to governments to demonstrate that individuals pose risk, but for individuals to prove that they do not; and more informed, open and democratic processes of giving greater voice to risk bearers, as advocated by proponents of precaution, are conspicuous in their absence.

In sum, countervailing discourses, along with the knowledge and categories of identity associated with them, may provide opportunities for localized resistance to the dominant discourse of risk. However, because of intensification effects, such resistance can contribute to riskification insofar as the concept of risk remains central, alternative forms of knowledge are incorporated into existing bodies of risk knowledge, and risk assessors and managers continue to remain privileged – authorized to act on larger numbers of potential risk producers in relation to uncertain risks. The irony is that attempts to recognize the uncertain status of risk knowledge and the unknowability of the future may fail to facilitate radical new approaches that draw on concepts other than risk. Instead, they reproduce approaches in which risk remains central, while justifying draconian risk management actions on the grounds of the magnitude of unknowable hazards, regardless of the probability of them occurring.

Discipline and the Real-Time Organizing of Risk

Discipline, according to Foucault, is “a form of self-regulation” (Mills, 2003: 43). It works directly on individuals and their capacity to act, through surveillance, training, and exercises associated with key institutions (particularly the prison, but also the army, factories, schools, etc.). It targets actions and capacities, producing “docile bodies” which regulate themselves through self-discipline and self-control (Foucault, 1979: 135).

He who is subjected to a field of visibility, and who knows it, assumes responsibility for the constraints of power; he makes them play spontaneously on himself; he inscribes in himself the power relation in which he simultaneously plays both roles; he becomes the principle of his own subjection (Foucault, 1979: 202–3).

These disciplining effects of a dominant discourse mean that, even when new forms of knowledge and new identities are opened up by actors deviating from what is considered to be disciplined behaviour, this resistance can come to be subsumed by the dominant discourse.

Discipline is clearly evident in the case of the dominant discourse of risk where, in organizing

risks that are perceived to be materializing in real-time, individuals are subjected to disciplinary power emanating from the past, present and future. First, discipline bears down from the past through the legacy of the prior prospective organizing of risk inscribed in plans, scripts and protocols, in which the individual has been trained and which he or she is expected to enact in the present, thus structuring and limiting the range of responses available as a risk materializes. Second, individuals who might contemplate improvising by deviating from plans, scripts and protocols in real-time do so knowing they may face the possibility of being immediately disciplined in the present by orders to revert to the plan, possibly accompanied by punishment, from risk arbiters occupying superior positions in the command-and-control hierarchy in which they are situated. Third, discipline also emanates from the future inasmuch as individuals anticipate subsequent retrospective organizing of risk in the form of an internal or external review in which they may be held accountable for any improvisation.

The threat of being disciplined in the future is particularly consequential since, even when it appears to make sense to deviate from plans, scripts and protocols at the time the risk materializes, individuals may still be punished later as a result of post-incident investigations involving different actors, as Gephart (1993: 1503) found in his study of an inquiry into a pipeline explosion. In this case, a district manager had authorized greater discretion for employees at the local site in order to allow them respond to local conditions. However, during the inquiry, actors at other levels reinforced the importance of command-and-control conceptions of hierarchy in the organization:

The worker constructed the organization as a model of compliance – a hierarchy wherein the foreman, his supervisor, gave him orders related to the management of risks and dangers. The assistant manager constructed the organization as a hierarchy wherein he reported to the district manager. He would have [acted] if commanded or authorized to do so ... In the board's construction, the company was a clear hierarchy of authority in which the district manager was the supervisor and a clear set of rules and policies

demanded compliance. If these had been followed, the accident would have been avoided.

The plant manager was found by the inquiry to be responsible for the accident because he *failed* to use his hierarchical position to direct subordinates according to pre-determined plans, scripts and protocols (Gephart, 1993). The tendency of reviews and inquiries to arrive at such findings means that those who do improvise in real-time are highly vulnerable to discipline in the future.

The problem is further compounded because questions of whether individuals were right to deviate from plans, scripts and protocols, as well as whether the new risk knowledge they generated in doing so is valid, can *only* be answered after the fact, through the retrospective organizing of risk. In the immediate moment of organizing a risk as it is materializing, there is no 'regime of truth' to legitimate the knowledge generated in real-time. (This situation is different from both the prospective mode where the body of risk knowledge is validated through a range of widely accepted scientific conventions that act as regimes of truth, and the retrospective mode where reviews and inquiries are themselves highly institutionalized regimes of truth.) The status of risk knowledge produced in real-time is therefore only ever provisional; it can only be legitimated after-the-fact through the retrospective organizing of risk during which the partial, experiential and situated aspects of knowledge that are vital to organizing risk in real-time are often lost.

In sum, the authorization of locally situated risk assessors-cum-managers-cum-bearers to exercise discretion and act on their experiential knowledge may provide opportunities for localized resistance to the dominant discourse of risk. However, because of disciplinary effects, such resistance can contribute to riskification insofar as, even if plans, scripts and protocols are made less constraining to reduce the effects of discipline emanating from the past, and even if risk arbiters allow greater scope for improvisation to reduce the effects of discipline emanating in the present, the individual still remains subject to possible discipline in the future. In addition, the knowledge produced in real-time on

which improvisation is based can only ever be provisional in the absence of a real-time regime of truth – its status depends upon the subsequent retrospective organizing of risk, which will determine whether the risk assessor-cum-manager-cum-bearer was inspired or negligent in improvising. The irony is that attempts to facilitate improvisation by risk assessors-cum-managers-cum-bearers may promote more, not less, compliance with pre-determined plans, scripts and protocols and/or orders from risk arbiters. It may be far less risky for individuals to comply with pre-determined plans, scripts and protocols – even if they believe them to be wrong – than it is to risk being found retrospectively to have been an inadequate or irresponsible risk assessor/manager or to have been a risk producer because of real-time improvisation.

Governmentality and the Retrospective Organizing of Risk

Governmentality is the ‘conduct of conduct’ of a population (rather than of an individual, which is the target of discipline), created by establishing conditions and arranging contexts in ways that lead people to act in certain ways and not others, and undertaken in the name of the wellbeing of the population at large (Li, 2007). In modern society, power relations “have been progressively governmentalized, that is to say, elaborated, rationalized, and centralized in the form of, or under the auspices of, state institutions” (Foucault, 2000: 345) as government acts to ensure the wealth, welfare, productivity and security of the population for which it claims to be responsible. Governmentality targets populations as defined by aggregated knowledge, which is generated by a wide range of professional groups, such as psychologists, psychiatrists, accountants, managers, scientists, demographers, etc., and through an assemblage of “institutions, procedures, analyses and reflections” (Foucault, 2002: 219). As this knowledge accumulates, different categories of identity are produced, into which people are classified based on such characteristics as age, gender, location, physical or health condition, economic status, occupation, etc. Programs, policies and practices then incorporate these categories, subsequently shaping – and constraining – the options available to the individuals who

occupy them. The governmentality effects of a dominant discourse mean that, even when new forms of knowledge and new identities are opened up by what appears to be fundamental questioning of the status quo, this resistance can come to be subsumed by the dominant discourse.

Governmentality is clearly evident in the case of the dominant discourse of risk insofar as populations of individuals are classified in relation to risk. For example, many reviews and inquiries retrospectively organizing risks associated with retirement, pensions, health, employment, etc. recommend that, in the future, individuals should take greater responsibility for their own risks (Beck & Beck-Gersheim, 2002; Bickerstaff & Walker, 2002; Elliott, 2002; Rose, 1989). Such recommendations serve to construct citizens “of enterprise and production” (Foucault, 2008: 147) who act as “entrepreneurs of themselves, shaping their own lives through the choices they make,” and taking on responsibility for risk (Rose, 1989: 226).

[T]he individual is increasingly viewed today as an active agent in the risk-monitoring of collectively produced dangers; risk-information, risk-detection and risk-management is more and more constructed as and designed as a matter of private responsibility and personal security (Elliott 2002: 305).

In this way, the lessons and recommendations derived by risk adjudicators help to specify what it is to be entrepreneurial in today’s risk society i.e., what individuals must do to engage in the necessary ‘risk work’ to avoid hazards or deal with them if they arise.

On the surface, this shift in locus of responsibility seems radical and progressive in re-constructing traditional risk identities – collapsing the distinction between the identities of risk bearers and risk assessors/managers in ways that ostensibly make the former less dependent on the latter for their protection against hazards; and producing the entrepreneurial risk bearer-cum-assessor-cum-manager. However, the need to comply with norms defined in terms of risk has not been eliminated: instead, compliant subjects must take on responsibilities that once would have been assumed by the

government or the organization. Rather than the state bearing the risks of old age, illness and poverty among its citizens, recent changes in tax policies, social programs, and employer practices have transferred the burden of risk management to the individual (Hacker, 2006; Vaz & Bruno, 2003). Similarly, instead of the organization assuming the risk of falls in demand and employing idle workers, a contingent labour force now assumes these risks. As Gephart (2002: 333) writes, “through the changing nature of the employment relationship and contract, benefits and even salary can be cut, and workers can be required to expend their own resources to manage and mitigate workplace risks and damages”. In her study of the Internet industry, Neff (2012: 2) draws a similar conclusion: “economic risk in modern life has increasingly become privatized and individualized”.

Governmentality also has consequences for actors categorized as *not* being compliant risk subjects, as entire categories of individuals are labelled and understood as being insufficiently entrepreneurial in terms of assessing and managing risk. These individuals are often excluded or marginalized to the extent that subjects ‘at risk’ can become categorized as risk producers. For example, individuals who are HIV positive and at risk from various diseases have come to be blamed for both their own condition and for the danger they pose to others through sexual behaviour deemed risky (Davis, 2007). Older workers who are at risk of unemployment have come to be deemed as posing too much risk to small businesses start-up programs – because of their purportedly unwise investment decisions – and hence are excluded from them (Ainsworth & Hardy, 2009). Merchant seamen, who are at risk of injury and death from their dangerous occupation, are deemed to be “operational and economic risk objects” that are “costly and prone to failure” by their employers (Kendra, 2007: 33). In being categorized as not only vulnerable, but also ‘dangerous,’ populations of risk bearers-cum-producers are subjected to further surveillance, monitoring and intervention in order to manage the risks they are deemed to produce for society.

People who have been marginalized or excluded due to class, gender, race and other

bases of social inequality ... are often seen as being both at-risk and risky themselves.

Marginalized people are exposed to more risks, but are also themselves categorized as bad risks (Doyle, 2007: 8).

Thus individual behaviour comes under scrutiny as the individual is blamed for inadequately managing risks, rather than the government that once supported them or the organizations that employ them (Beck & Beck-Gersheim, 2002; Bickerstaff & Walker, 2002).

These categories of compliant and non-compliant subjects are formed on the basis, not of individuals' personal experiences of the risks in question, but on the basis of holistic, convergent accounts of the past, aggregated at the level of populations. In creating these categories, as well as establishing how each is to be treated, governmentality contributes to a process whereby the burden of risk is shifted to individuals, while more organizations are authorized to act in the name of risk in relation to both compliant and non-compliant subjects. First, compliant subjects must be familiar with the existing body of risk knowledge in order to make informed decisions. To do so, they depend on the assistance of expert organizations. For example, consumers are increasingly encouraged to carry out their own due diligence in researching the health effects of chemicals found in the consumer products they buy, in order to identify any risks prior to purchase, instead of relying on government regulation (Mackendrick, 2011), which means consumers must acquire more knowledge about chemical risks (what are the substances in the product, what are the hazards linked causally to these substances, etc.). Consequently, scientific, professional and government organizations retain their privileged position insofar as they are the producers of this information; while consumer organizations and environmental health NGOs carve out important new informational and certification roles, often using web-sites to convey and distribute this information, in this expanding political economy of risk. Second, those categorized as noncompliant are managed by a wide range of medical, welfare, psychiatric and custodial organizations authorized to monitor, regulate, and act upon them, resulting in an expanding

implementation of techniques of calculation, surveillance and administration, all in the name of risk. For example, a wide range of private, public and not-for-profit organizations are springing up to assist the elderly in managing financial risk during retirement, in ways designed to reduce the risks of the elderly becoming a burden on social and health services (e.g., Miller & Weissert, 2000).

In sum, challenging traditional risk identities, such as enabling risk bearers to take responsibility for risk assessment and management, may provide opportunities for localized resistance to the dominant discourse. However, because of governmentality effects, such resistance can contribute to riskification insofar as more areas of an individual's life become subjected to the discourse of risk, resulting in a greater need for them to master existing bodies of risk knowledge. In addition, new types of expert organizations emerge either to provide risk bearers-cum-assessors-cum-managers with the risk knowledge they need to assess and manage their own risks, or to monitor risk bearers-cum-producers who are unable to self-manage risk. The irony is that attempts to individualize risk by authorizing risk-bearers to also be risk assessors and managers may serve to authorize more organizations to act in the name of risk and to intervene more aggressively in individuals' lives in relation to their self-management of risk.

CONCLUSION

Our integrated framework, based on Foucauldian concepts, is applicable to different types of risk (e.g., financial, technological, social, and environmental). It identifies three modes for organizing risk – prospectively, in real-time, and retrospectively – each of which is situated in the dominant discourse of risk. Previous discussions of the dominant discourse of risk emphasize the prospective organizing of risk (e.g. Jasanoff, 1998; Lupton, 1999; Lupton, 2013), whereas our framework extends it to the other modes in a systematic way, providing a common language for understanding, researching and critiquing organizing in and across all three modes. Our framework proposes an alternative way of organizing risk in each mode which is better able to deal with unfamiliar and systemic risks, risks that

materialize in unexpected ways, and risks for which significant changes are desired in the way they are organized in the future. However, it acknowledges that since these alternative ways of organizing require resisting the dominant discourse of risk, enacting them is likely to be difficult. Our second order of critique also extends existing critical research on risk, which has tended to focus on governmentality, to include the effects of intensification and discipline; and, by introducing the concept of riskification, provides a way for organizational researchers to theorize the pervasive and growing preoccupation with risk and organizing.

We also make important contributions to understanding risk knowledge by identifying similarities and differences in the bodies of risk knowledge that are privileged in each mode, rather than simply concentrating on the taken-for-granted status of risk knowledge produced and applied prospectively. This has allowed us to interrogate risk knowledge more closely by, for example, showing the provisional status of risk knowledge produced in real-time owing to the absence of a regime of truth, as well as the notional status of the holistic, convergent, authoritative risk knowledge produced retrospectively. Finally, we have added to understandings of risk identities by considering the risk arbiter and risk adjudicator, whereas previous research has tended to focus on risk assessors, risk managers, risk producers and risk bearers; and by examining the fluidity of risk identities – typically viewed through the prism of clearly defined singular roles – to consider the implications of shifting and multiple identities e.g., the risk assessor-cum-manager-cum-bearer (real-time mode), as well as the risk bearer-cum-assessor-cum-manager and the risk bearer-cum-producer (retrospective mode).

Our framework provides a foundation for future research on risk and organizing that can incorporate a range of research approaches and methods. First, quantitative studies would help establish the prevalence of the common ways of organizing risk associated with each mode and ascertain their effectiveness and limitations. Similarly, quantitative work would also help to establish where the alternative ways of organizing risk in each of the three modes are most likely to be found, and how

effective they are in situations where risks are unfamiliar and systemic, where risks materialize unexpectedly, or where significant changes are desired. Quantitative comparisons would also be useful to ascertain whether resisting the dominant discourse is more common in organizations with particular features relating to stage of organizational life cycle, size, demographic features of organizational members, organizational culture, etc. For example, one might expect entrepreneurial start-ups and small organizations, as well organizations led by young individuals, to be more informal, less bureaucratic and more prone to problematize prevailing knowledge and to challenge prevailing identities.

Similarly, organizations with different cultures may also be more or less conducive to enacting alternative ways of organizing risk. Drawing on dimensions of organizational culture discussed in Hofstede (1994: 10), it seems likely that it would be more difficult to enact alternative ways of organizing risk where the culture is process-oriented (versus results-oriented) because such organizations are “dominated by technical and bureaucratic routines”; tightly-controlled (versus loosely-controlled) because such organizations have a high degree of formality; and normative (versus pragmatic) because such organizations tend to be rigid. Some researchers have explicitly examined “risk culture” and how it varies across organizations (Bozeman & Kingsley, 1998), differentiating between ‘engineered’ and ‘organic’ approaches to risk (Power, Ashby & Palermo, 2013). The former would appear to be less amenable to alternative ways of organizing risk, because such risk cultures emphasize traditional authority relations, the use of metrics, and formal, standardized procedures.

Second, our framework provides avenues for future qualitative research. Qualitative case studies would provide greater in-depth understanding of how common ways of organizing risk are held in place by the dominant discourse of risk, how the alternative ways are better able to address the limitations, and how the difficulties in enacting these alternative ways are manifested. Insofar as some organizations may engage with all three modes in dealing with particular risks, qualitative case studies

could compare how risk is organized in each of the modes within a single organization. Longitudinal research could examine how organizations manage the transitions between the modes. We know little about the transition from prospective to real-time organizing as a risk becomes constructed as one that is actually materializing, or the organizational processes through which some risk incidents are put on the agenda for review while others are not. Finally, while there is a considerable amount of organizational research on what happens during public inquiries, there is far less research on internal organizational reviews of incidents or on what happens following inquiries and reviews, i.e., whether and how organizations engage (or not) with recommendations by organizing risks differently (or not) in the future.

Third, the framework lends itself to work that is explicitly critical. Studies could, for example, interrogate the micro-dynamics of how risk knowledge comes to assume such a privileged status in more detail, explore how risk knowledge intersects with other established bodies of knowledge, and examine whether and how risk knowledge is supported by other dominant discourses such as neo-liberalism and globalization. Researchers might examine real-time risk knowledge from the perspective of situated knowledge (Lave & Wenger, 1991). Ethnographies might examine precisely why it is difficult to validate situated, embodied risk knowledge in real-time by constructing a real-time 'regime of truth'. Research could explore the barriers that prevent partial accounts and alternative forms of knowledge (e.g., gestures, tacit, embodied knowledge) from being seen as valid in the retrospective organizing of risk. Critical work could also consider the construction of risk identities, drawing on Foucault's (2000) conception of a de-centred, constructed self, as well as the power relations among them and whether these power relations change when organizations attempt to enact alternative ways of organizing risk.

The concept of riskification also invites a wide range of critical studies. With regard to intensification, researchers could examine the expanding frontiers of risk discourse into more and more

realms of organizational life, displacing other ways of talking about the world. Alternatively, research might be conducted on ‘de-intensification’ (Hardy & Thomas, 2014) by examining when and how other discourses juxtaposed against this dominant discourse of risk create different ‘conditions of possibility’ for talking about and acting on phenomena without reference to the concept of risk (Maguire & Hardy, 2006). In the case of discipline, future research might examine how the intersection of past, present and future bearing down on employees is experienced, especially in relation to different types of organizational members (e.g., front line workers vs. middle managers; or different types of professionals), as well as how this discipline shapes their subjectivity and affects their ability to improvise in their responses to risk incidents. In relation to governmentality, studies might examine the social and personal implications of the process of individualizing risk, and of attaching the concept of risk to categories of people previously understood through other concepts.

Our work has practical implications. Specifically, our theorizing underlines how important it is for organizations to valorize the problematization of taken-for-granted ways of organizing risk especially when dealing with risks that are constructed as unfamiliar or materializing in unexpected ways or, post-incident, require significant changes in how they are to be organized; and to support organizational members who draw attention to “potential inadequacies in knowledge” (Maguire & Hardy, 2013: 240) and question “existing attention to risk and its model of identification, recognition and definition” (Hutter & Power, 2005: 11). More generally, managers need to be more sceptical of existing bodies of knowledge as a basis for the prospective organizing of risk and to acknowledge that risk incidents can never be perfectly predicted or prevented. As far as the real-time organizing of risk is concerned, managers and employees need to be more alert to weak signals and evidence about imminent risks that comes in unexpected forms or from unexpected sources, as well as to equivocal information that suggests risks may be materializing in unanticipated or unimagined ways. In the case of the retrospective organizing of risk, inquiries, hearings and reviews should be carried out in ways

that attempt to respect and capture the heterogeneity of actors' experiences for the purposes of producing new risk knowledge that is actionable by those supposed to implement it. Greater skepticism of omniscient accounts would likely result in a greater acceptance of the provisional and partial nature of knowledge which, in turn, would inform the subsequent prospective organizing of risk, making it more sensitive to the limitations of prevailing expert knowledge and the potential value of alternative paradigms.

Final Words

Risk is something we apparently cannot escape. It affects individuals and organizations through power relations associated with the dominant discourse of risk, and perpetuates itself through intensification, discipline and governmentality in ways that cannot be reduced to sovereign power and the actions of particular individuals. We therefore need new ways of viewing – and studying – how risk is organized, which are innovative, reflexive and, in some cases, radical.

Research needs to be innovative in that the dominant discourse makes it difficult to abandon common and widespread ways of organizing risk. We therefore need new ideas about organizing risk. Research needs to be reflexive in recognizing the highly pervasive power effects of the dominant discourse of risk and how all actors are captured in a complex web of power relations. No single individual or group could have prevented the risks associated with the GFC or the Fukushima disaster from materializing; and it is doubtful that a single individual or group can ever transform the financial and energy sectors to preclude future risks from materializing. Only by engaging with the dominant discourse of risk reflexively can we hope to resist some of its effects. Finally, at least some research needs to be radical in challenging the very discourse of risk and even seeking to do away with its application altogether, in at least some domains of human endeavour. This is not to suggest that power effects would be eliminated, but they would be different. There are many reasons for advocating a radical approach, including the argument that the discourse of risk may be helping to produce or

aggravate harms, hazards and dangers because it creates the illusion of a knowable universe that has been tamed by scientists, engineers, financial analysts and other experts. Moreover, as this paper shows, the power relations associated with the discourse of risk distribute these harms, hazards and dangers unevenly. Certain individuals – often the more disadvantaged members of society – bear more of them than others (Scott, 2007). Without more radical research, particular voices, ways of knowing and forms of knowledge, as well as important questions related to culture, ethics, morality and quality of life, will be systematically excluded.

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Table 1: A Summary of the Dominant Discourse of Risk

Discourse	The Discourse of Risk
<p>A <i>discourse</i> is a collection of interrelated texts and practices “that systematically form the object of which they speak”</p>	<p>The <i>discourse of risk</i> is constituted by the following texts and practices that systematically bring ‘risk’, as an object of knowledge, into existence.</p> <ul style="list-style-type: none"> • Examples of texts include: scientific articles, textbooks on risk assessment and risk management, ISO risk principles and guidelines, emergency preparedness handbooks, emergency procedure manuals, emergency preparedness checklists, aggregated risk data reports, accident reviews, inquiry reports, submissions to public hearings, compliance reports, actuarial reports, media stories, government legislation, annual reports, scientific and technical reports. • Examples of practices include: use of probability and statistical techniques, preparation of risk matrices, carrying out event tree/fault tree analysis, calculating risk-benefit ratios, preparing emergency preparedness plans, filling in emergency preparedness checklists, rehearsing accident protocols, conducting emergency simulations, monitoring for early warnings, auditing, completing accident or incident reports, holding hearings, calling witnesses, drafting inquiry reports, processing data to update actuarial tables.
<p>A dominant discourse has additional features:</p>	
<p>Its constituting texts and practices draw on each other in well-established ways to construct convergent, widely shared meanings of particular phenomena</p>	<ul style="list-style-type: none"> • Risk is widely understood to be the probability of an adverse effect or negative event of some magnitude – a harm, hazard or danger of some kind that can be managed if the likelihood of its occurrence and nature of its effects can be accurately assessed. • Risk assessment is widely understood as ‘science’ (evidence- and fact-based, value-free). • Risk management is understood as ‘policy’ (values-based, involving trade-offs between multiple objectives).
<p>It produces an accepted, taken for granted body of knowledge that functions as if it were true and acts as a ‘regime of truth’.</p>	<p>The body of risk knowledge assumes risk to be ‘true’ i.e., it is accurately and objectively identifiable through:</p> <ul style="list-style-type: none"> • The development of knowledge derived from the past through scientific measurement and analytical reasoning; • The application of knowledge in the form of specific, widely accepted, institutionalized risk analysis/measurement techniques.
<p>It offers a delimited set of categories of identity that are meaningful and legitimate, some of which are authorized over others, and all of which are situated in the discourse and constrained and/or enabled by it, albeit unequally and in different ways</p>	<p>Key categories of identity include:</p> <ul style="list-style-type: none"> • Risk assessors who determine the nature, level and probability of harm, damage or loss; • Risk managers who are responsible for reducing risk to some level deemed acceptable; • Risk producers whose actions potentially generate hazards or cause harms, damage or losses; • Risk bearers who are harmed or bear damage/losses when hazards are realized. • Risk arbiters who are responsible for overseeing responses to risk incidents as they unfold in real-time; • Risk adjudicators, who review incidents where risks have (or have almost) materialized to determine, after the fact, who produced the risk and who bore it, as well as who should have assessed or managed it more effectively.

Table 2: A Foucauldian Framework for Understanding the Organizing of Risk

	Prospective Organizing of Risk	Real-time Organizing of Risk	Retrospective Organizing of Risk
<i>What is the main body of literature?</i>	Risk analysis: focuses on inter-organizational regulatory environments; and risk management and compliance inside organizations	Disasters, crisis management, high reliability organizations: focuses on internal organizational responses; some studies of inter-organizational dynamics	Public inquiries and hearings: focuses mainly on formal hearings that involve multiple external stakeholders; few studies on internal organizational reviews
<i>What is the main temporal focus of organizing risk?</i>	What <i>may happen</i> , i.e. the future	What <i>is happening</i> , i.e. the present	What <i>did happen</i> and what <i>should have happened</i> , i.e. the past, and what <i>should happen</i> , i.e. the future
<i>What is the context of organizing risk?</i>	Organizing of risk is typically <i>mediated and decontextualized</i> i.e., risk is assessed and managed at a distance from when and where the risk would materialize	Organizing of risk is typically <i>embedded</i> , i.e., risk is assessed and managed in proximity to when and where the risk is materializing	Organizing of risk is typically <i>mediated and decontextualized</i> , i.e., risk is assessed and managed after and at a distance from where the risk did (or nearly did) materialize
<i>How is risk normalized?</i>	Predict and prevent: identify and address risk <i>before it materializes</i> , through measurements, calculations and associated actions to reduce the likelihood and extent of negative effects	Control and contain: identify and address risk <i>as it is materializing</i> , through implementation of predetermined plans, protocols and scripts to avoid or reduce the extent of negative effects	Review and revise: identify and address risk <i>after it has (or nearly has) materialized</i> , through the construction of holistic, convergent, authoritative accounts; and recommendations for the future organizing of risk
<i>What are the power relations associated with the dominant discourse of risk?</i>	The dominant discourse of risk privileges expert risk knowledge in the form of facts, correlations and causal models over other forms of knowledge; and authorizes risk assessors and risk managers over other risk identities.	The dominant discourse of risk privileges expert risk knowledge in the form of previously produced plans, scripts and protocols over other forms of knowledge; and authorizes risk arbiters over other risk identities.	The dominant discourse of risk privileges expert risk knowledge in the form of a holistic, convergent account containing lessons and recommendations; and authorizes risk adjudicators over other risk identities.
<i>What is the most common way of organizing risk, because of the dominant discourse of</i>	Risk is organized prospectively through the production of expert risk knowledge derived from empirical information about the past, which has been abstracted into	Risk is organized in real-time through the implementation of expert risk knowledge derived from empirical information about the past, which has been abstracted into	Risk is organized retrospectively through the production of expert risk knowledge derived from empirical information about the past, which has been abstracted into

<i>risk?</i>	regularities in the form of facts, correlations and causal models, and applied to a hypothetical future by risk assessors. This knowledge then forms the basis of actions taken by risk managers to protect risk bearers and restrict risk producers.	regularities in the form of plans, scripts and protocols. This knowledge then forms the basis of actions taken in a specific present by risk assessors-cum-managers-cum-bearers, subject to endorsement from risk arbiters.	regularities in the form of a holistic, convergent account containing lessons and recommendations by risk adjudicators. This knowledge then forms the basis of actions to be taken in the future by other risk identities.
<i>What are the limitations of the most common way of organizing risk?</i>	Encounters difficulty in dealing with unfamiliar and systemic risks	Encounters difficulty in dealing with risks that materialize in unexpected ways	Encounters difficulty in bringing about significant changes in how risk is organized in the future
<i>What is an alternative way of organizing risk?</i>	Problematizing existing expert risk knowledge and the ability of the past to predict the future; incorporating lay knowledge produced by risk bearers and other risk identities; and challenging the existing hierarchy of risk identities.	Problematizing existing expert risk knowledge and ability of the past to apply to the present; incorporating the experiential knowledge of locally situated risk assessors-cum-managers-cum-bearers; and challenging the hierarchy of risk identities	Problematizing existing expert risk knowledge and the ability of a holistic, convergent account of the past to add usefully to it; incorporating partial, experiential knowledge in the form of multiple, contradictory accounts; and challenging the hierarchy of risk identities.

Table 3. Resistance and Riskification in Three Modes for Organizing Risk

	Prospective Organizing of Risk	Real-Time Organizing of Risk	Retrospective Organizing of Risk
<i>Alternative way of organizing risk to resist the dominant discourse of risk</i>	Problematizing existing expert risk knowledge and the ability of the past to predict the future; incorporating lay knowledge produced by risk bearers and other risk identities; and challenging the hierarchy of risk identities.	Problematizing existing expert risk knowledge and ability of the past to apply to the present; incorporating the experiential knowledge of locally situated risk assessors-cum-managers-cum-bearers; and challenging the hierarchy of risk identities.	Problematizing existing expert risk knowledge and the ability of a holistic, convergent account of the past to add usefully to it; incorporating partial, experiential knowledge in the form of multiple, contradictory accounts; and challenging the hierarchy of risk identities.
<i>Foucauldian concept to shed light on resistance</i>	Intensification	Discipline	Governmentality
<i>How resistance can contribute to riskification</i>	Countervailing discourse becomes subordinated to the discourse of risk. Alternative forms of knowledge become incorporated into existing bodies of risk knowledge. Risk assessors and managers are authorized to act on larger numbers of potential risk producers in relation to uncertain risks.	Risk assessors-cum-managers-cum-bearers are subject to discipline emanating from past, present and future based on existing bodies of risk knowledge. Knowledge produced in real-time is only provisional – its status depends upon the subsequent retrospective organizing of risk.	More areas of individuals' lives become subjected to the discourse of risk. Risk bearers-cum-assessors-cum-managers have to master existing bodies of risk knowledge. New types of expert organizations emerge to provide risk knowledge to risk bearers-cum-assessors-cum-managers and to monitor risk bearers-cum-producers.
<i>Possible ironies associated with attempts to resist the dominant discourse of risk</i>	Attempts to recognize the uncertain status of risk knowledge and the unknowability of the future may fail to facilitate new approaches that draw on concepts other than risk. Instead, risk remains central and draconian risk management actions are justified on the grounds of the magnitude of unknowable hazards, regardless of the probability of them occurring.	Attempts to facilitate improvisation by risk assessors-cum-managers-cum-bearers may promote more, not less, compliance with pre-determined plans, scripts and protocols and/or orders from risk arbiters. Even if individuals believe them to be wrong, it may be less risky to comply, rather than risk being found retrospectively to have been an inadequate risk assessor/manager or risk producer.	Attempts to individualize risk by authorizing risk-bearers to also be risk assessors and managers may serve to authorize more organizations to act in the name of risk and to intervene more aggressively in individuals' lives in relation to their self-management of risk.

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