

## 9/11 on the 'net: Risk and Uncertainty in Hindsight

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The events that unfolded on Tuesday, September 11, 2001, simultaneously shocked a nation and changed the world. Indeed, the executive summary of the 9/11 Commission Report begins, "At 8:46 on the morning of September 11, 2001, the United States became a nation transformed," ("Final Report of the National Commission on Terrorist Attacks upon the United States, Executive Summary," 2004, p. 1). In the aftermath of the terrorist attacks, wars have been waged, civil liberties upended, and a vague uneasiness, an undefined fear, continues to hang over our hearts and minds. 9/11 catapulted a new and terrifying risk into the limelight; 9/11 made the threat of terrorism manifest for a stunned public and an unprepared federal government.

My aim in this paper is not to describe the terrorists' plot and acts in detail, nor will I discuss historical antecedents or political motives involved; instead, I wish to explore 9/11 and its discourses within the context of our modern-day risk society. I will focus on the role played by the internet in shaping, enabling, coupling or juxtaposing, and filtering individual and institutional preparations and responses to September 11. How was the internet used to prepare for and manage this risk? How has it since been used to communicate knowledge of this risk or similar threats? Which institutions and individuals have been key players? How, if at all, has the internet, which has rapidly become one of the most pervasive technologies of this age, changed our relationship to risk?

I was inspired to pursue this avenue of research in large part by an encounter with Nicholas Nassim Taleb's (2007) recent book, *The Black Swan*. Taleb (2007) offers his readers a recipe for risk-related disaster and claims that the ingredients, which include increasing technological and systems-level complexity, increased networking, globalization, and a few other novel features of modern existence, are becoming more and more abundant. His main argument is that we have become increasingly vulnerable to unpredictable "black swan" events; these wildly uncertain, or random, events are seemingly impossible to forecast and accordingly difficult to prepare for, and as a result, events of this kind tend to have the most significant consequences (Taleb, 2007). Moreover, he cites the hindsight bias, which has been well studied and characterized by cognitive psychology researchers, as evidence that we routinely retrospectively

underestimate the frequency and impact of this type of chance event or risk. I found the intuitive appeal of Taleb's argument very hard to ignore, but the book offers little in the way of practical advice. After reading *The Black Swan*, I know that human knowledge is limited and that we are often blinded to the effects of uncertainty by excessive hubris, but this growing awareness has only left me feeling more uncertain and unprepared than ever before. In light of this work, I have chosen to highlight September 11, an archetypal modern-day "black swan" event, to serve as focal point for my paper.

My project is indebted to the work of a number of pioneers in the study of risk and uncertainty. I will begin by briefly outlining the major schools or approaches to understanding risk: the psychometric paradigm, which draws almost exclusively from cognitive psychology; cultural theory, which combines anthropological and sociological perspectives; the social amplification of risk framework (SARF) developed by Roger Kasperson and others, an interdisciplinary approach with strong roots in communications theory; Ulrich Beck's theory of the risk society; and finally, I will address the contributions of "governementality" scholars to the risk debate. My aim is to integrate and apply these sources in order to better understand the relationship between the internet, risk, and discourses of risk. I am using internet-based discourses of September 11 as a case study for my broad analytic framework.

Given what seems to amount to a universal inability to forecast and prepare for black swan events, I am especially interested in the efforts of experts and institutions to convey and communicate such risks, the responses by the lay public, and the dynamics of trust in relation to events like September 11. The 9/11 Commission Report, freely available at <http://www.gpoaccess.gov/911>, as well as the Department of Homeland Security website (<http://www.dhs.gov>) will serve as primary sources for my analysis of expert/institutional risk management and response. I have also assessed a collection of internet memorials, victims' family members support groups, networks, and websites, blogs, forums, etc., which reflect a cross-section of online public responses to the attacks. Ultimately, I hope to be able to directly compare these two streams of risk perceptions and discourses of 9/11 with regard to treatments of uncertainty/risk, evidence of the bias of hindsight, and indications of changing patterns of trust. My case study approach borrows heavily from a 1996 paper by Kasperson et al., "The Social Amplification and Attenuation of Risk," which offers an account of the radioactive containment crisis which transpired in Goiania, Brazil in the late 1980s as an application for his framework for the social mediation of risk. My project, however, will differ significantly from Kasperson's, as I plan on assessing the role of just one piece of mediation technology, the internet, in addition to the nature of the linkages and networks that the internet enables between various individuals, communities, and institutions. I also hope that by integrating frameworks for decision-making and risk from psychology, sociology, and

a range of other disciplines, I will be more able to provide a comprehensive and compelling account of risk perception and communication in response to the events of September 11, 2001.

### Background Literature

Uncertainty, risk, and mankind have been uncomfortable bedfellows since the dawn of our species. However, the ongoing processes of modernization have transformed our relationship to and understanding of "risk." Deborah Lupton (1999, p.5) explains, "Most commentators link the emergence of the word and concept of risk with early maritime ventures in the pre-modern period... This concept of risk, therefore, excluded the idea of human fault and responsibility. Risk was perceived to be a natural event such as a storm, flood or epidemic rather than a human-made one." In the pre-modern era then, risk remained exclusively within the domain of the deity or fate. The modernist conception of risk, on the other hand, increasingly attributes unexpected outcomes to human activity and relies heavily on the science of probability and statistics. At some point in the modernist endeavor to rationalize the universe and regulate its indeterminacy, risk became "calculable," as Lupton (1999, p.7) writes, "In modernity, risk, in its purely technical meaning, came to rely upon conditions in which the probability estimates of an event are able to be known or knowable."

Beck (2002, p. 40) offers a strikingly similar account, "Risk is a modern concept. It presumes decision-making. As soon as we speak in terms of 'risk', we are talking about calculating the incalculable, colonizing the future." Within the last five or six decades, the western world has also witnessed a dramatic increase in the prevalence of the word and concept of risk in both expert and public debate and discourses. Many commentators have linked this growing concern with risk to a change in the nature of risks themselves (Lupton, 1999, p. 10). Contemporary society is driven by the production and application of scientific and technological knowledge, and our way of life has become increasingly dependent upon staggeringly complex technical and/or organizational systems. These characteristic features of modern society create new uncertainties. Risk emerges in this space where human knowledge engenders wild, uncontrollable uncertainty. These are "black swan"-type risks: globalized, unpredictable, high-impact, and often invisible. The characteristically modern preoccupation with risk can be traced to the rise of the environmental movement in response to heightened awareness of toxic contamination from industrial and agricultural processes as well as mounting anxiety and antipathy toward nuclear weapons and energy programs; application of the pesticide DDT, the disasters at Bhopal, Hiroshima, Nagasaki, the Cold War, Three Mile Island, and Chernobyl became potent symbols of man-made risk in contemporary society.

Risk scholarship has typically adopted one of two views concerning the nature of risk. The first perspective suggests that risk is an objective,

quantifiable phenomenon: "Technico-scientific approaches to risk, emerging from such fields as engineering, statistics, actuarialism, psychology, epidemiology, and economics, bring together the notion of danger or hazard with calculations of probability. They define risk as 'the product of the probability and consequences (magnitude and severity) of an adverse event [ie. a hazard]' (Bradbury 1989, p. 382)," (Lupton, 1999, pp. 17-18). By contrast, a social constructionist viewpoint emphasizes the ways in which risks and risk perceptions are constructed by individuals and groups in a particular social context. The realist, objectivist view is readily apparent in much of the literature that has emerged from the psychometric paradigm. The psychometric study of risk was launched in 1969, with the publication of Chauncey Starr's seminal "Social benefit versus technological risk." Starr, an engineer, employed what has subsequently been labeled a "revealed preference" approach: "The analysis is based on two assumptions. The first is that historical national accident records are adequate for revealing consistent patterns of fatalities in the public use of technology. (That this may not always be so is evidenced by the paucity of data relating to the effects of environmental pollution.) The second assumption is that such historically revealed social preferences and costs are sufficiently enduring to permit their use for predictive purposes," (Starr, 1969, p. 1232).

In other words, Starr assumed that, by trial and error, society has reached an optimum balance between the risks and benefits associated with a given activity, and as a result, his analysis of historical/economic data should reveal patterns of acceptable risk/benefit trade-off. Starr's conclusion makes his objective explicit: "The application of this approach to other areas of public responsibility is self-evident. It provides a useful methodology for answering the question 'How safe is safe enough?'" (Starr, p.1237). Indeed, this question emerged as the central focus of psychometric research: a follow-up paper authored by Fischhoff et al. (1978), adopted Starr's general framework, but challenged the assumptions behind his methods. In place of the revealed preference approach, these authors develop an "expressed preference" model, using questionnaires to survey public attitudes toward risk/benefit trade-offs (Fischhoff et al., 1978).

The psychometric paradigm is directed at resolving the tension between expert perceptions of risk, which are seen as rational, precise, and objective, and public perceptions, which are presumably ill-informed, irrational, and inaccurate. A number of cognitive psychologists, including Kahneman, Tversky, and Slovic, helped to popularize the heuristics and biases framework for judgment under uncertainty. In their landmark paper "Judgment under uncertainty: Heuristics and biases," Kahneman and Tversky (1974) identify three judgmental heuristics, or decision-making "shortcuts," which result in substantial and persistent biases. Their research describes the bias-inducing effects of each of the following heuristics: representativeness, the degree to which A is representative of

B, or the degree to which A resembles B; availability, the ease with which instances or occurrences can be brought to mind; and adjustment and anchoring, estimating probabilities by starting with an initial value and adjusting (Tversky and Kahneman, 1974). Notably, expert judgments, particularly those beyond the scope of one's specialized knowledge and training, are subject to the same biases: "When forced to go beyond the limits of the available data or to convert their incomplete knowledge into judgments usable by risk assessors, they may fall back on intuitive processes, just like everyone else," (Fischhoff, Slovic, and Lichtenstein, 1982, p. 251). As a result, expert judgments may be distorted by insensitivity to sample size, hindsight bias, and poor quality evidence (ibid.).

The hindsight bias is especially relevant to my own research as the proliferation of discourses related to September 11 occurred only after the risk of a terrorist attack became manifest, or real. Fischhoff (1982, p. 341) provides an excellent description of this particular bias: "In hindsight, people consistently exaggerate what could have been anticipated in foresight. They not only tend to view what has happened as having been inevitable but also tend to view it as having appeared 'relatively inevitable' before it happened." Moreover, "When we attempt to understand past events, we implicitly test the hypotheses or rules we use both to interpret and to anticipate the world around us. If, in hindsight, we systematically underestimate the surprises that the past held and holds for us, we are subjecting those hypotheses to inordinately weak tests and, presumably, finding little reason to change them. Thus, the very outcome knowledge which gives us the feeling that we understand what the past was all about may prevent us from learning anything from it," (Fischhoff, p. 343).

While the psychometric paradigm has afforded its fair share of valuable insights regarding risk and risk perception, for example the sensitivity of risk perceptions to framing, dread, voluntariness, etc., it has been much criticized for its failure to consider social and cultural contexts in shaping risk perceptions. Making use of a wide range of tools and methodologies appropriated "from such disciplines as cultural anthropology, philosophy, sociology, social history, cultural geography and science and technology studies," sociocultural theorists have pushed back (Lupton, 1999, p. 24). Mary Douglas and her frequent collaborator, Aaron Wildavsky, developed a novel paradigm for risk studies, cultural theory. This paradigm was articulated in 1983's *Risk and Culture: An Essay on the Selection of Technical and Environmental Dangers*, in which the authors set out a grid/group framework which relates the construction of risk by various social groups to the organizational, structural, and ideological features of a given group. These scholars call attention to the ways in which risk discourses are used to establish and maintain conceptual boundaries between social/cultural groups: "Viewing individuals as the active organizers of their own perceptions, *cultural theorists* have proposed that individuals choose what to fear (and how

much to fear it), in order to support their way of life. In this perspective, selective attention to risk, and preferences among different types of risk taking (or avoiding), correspond to *cultural biases*—that is, to worldviews or ideologies entailing deeply held values and beliefs defending different patterns of social relations," (Wildavsky and Dake, 1990, p. 44). That is to say, our risk perceptions spring from the cultural and social phenomena which structure our lives and our world, and as a result, our perceptions tend to reinforce the structural conditions which prompted and engendered them. Interestingly, many of the insights afforded by the cultural theory approach have been absorbed into recent psychometric research. Slovic's (1999) "Trust, emotion, sex, politics, and science: Surveying the risk-assessment battlefield," relies on a thoroughly psychometric analysis, but it rather successfully incorporates the relationship between worldviews and risk perceptions stressed by the cultural theorists.

Like Douglas's cultural theory outlook, Kasperson's social amplification of risk framework (SARF) adopts a functional structuralist approach. The SARF model views society as a network of nodes, experts, media, institutions, and members of the lay-public, through which knowledge and attitudes toward risk are transmitted. "In communications theory, amplification denotes the process of intensifying or attenuating signals during the transmission of information from an information source to intermediate transmitters, and finally to a receiver (DeFleur, 1966). An information source sends out a cluster of singles (which form a message) to a transmitter or directly to the receiver. The signals are decoded by the transmitter or receiver so that the message can be understood. Each transmitter alters the original message by intensifying or attenuating some incoming singles, adding or deleting others, and sending a new cluster of signals on to the next transmitter or the final receiver where the next stage of decoding occurs," (Kasperson et al., 1988, p. 236). The SARF approach has been criticized for focusing exclusively on the problem of information flow without consideration for knowledge-power relationships and dynamics (Murdock et al., 2003). Nevertheless, Kasperson's model offers an appealing and broad view of the dynamics of risk communication; risks are constructed through and mediated by individual perceptions, cultural biases, and social structures, information and knowledge are socially constructed and extremely dynamic.

Ulrich Beck's notion of the risk society and the "governmentality" view of risk also deserve brief mention, the purpose being to provide an introduction to these theories' orientation to risk rather than a detailed analysis. In his *Risk Society: Towards a New Modernity*, Beck (1992) argues that our world is transitioning from a wealth/scarcity society, in which allocation of scarce resources plays the dominant role in determining the form and function of social structures, to a risk society, which concerns itself with the distribution of risks rather than of wealth. He offers an account of reflexive modernization which suggests that our way of life systematically generates novel risks: "We are therefore

concerned no longer exclusively with making nature useful, or with releasing mankind, from traditional constraints, but also and essentially with problems resulting from techno-economic development itself. Modernization is becoming *reflexive*; it is becoming its own theme. Questions of the development and employment of technologies (in the realms of nature, society, and the personality) are being eclipsed by questions of the political and economic 'management' of the risks of actually or potentially utilized technologies – discovering, administering, acknowledging, avoiding, or concealing such hazards with respect to specially defined horizons of relevance," (Beck, 1992, pp. 19-20). Beck (p. 28) also emphasizes the normativity of risk perceptions: "Risks experienced presume a *normative horizon* of lost security and broken trust. Hence, even when they approach us silently, clad in numbers and formulas, risks remain fundamentally *localized*, mathematical condensations of wounded images of a life worth living. These ideas must in turn be believed, that is, they cannot be experienced as such. In this sense, risks are objectified negative images of utopias, in which the human, or what is left of it, is preserved and revived in the modernization process." Risk assessments/perceptions, expert or otherwise, are always judgments about values, distillations of an idealized vision of social harmony and collective welfare, of the "good life." In the risk society, we are completely surrounded by uncertainty and risk; catastrophe is poised to become the status quo (ibid., pp. 78-79). In my view, the theory's most significant flaw is Beck's gross underestimation of the degree to which wealth and resources affect risk and perceptions of risk; risk is obviously shaped by economics.

Finally, "governmentality" scholars have expanded risk theorizing by incorporating Foucauldian approaches. These scholars are less concerned with the nature of risk in and of itself than with the discourses and structures that usher risk into existence and "construct it as a phenomenon," (Lupton, 1999, pp. 84-85). Like risk society theorists, the governmentality perspective attributes the proliferation and intensification of risk discourses to the modernization process. As Lupton (p. 87) notes, "From this perspective, risk may be understood as a governmental strategy of regulatory power by which populations and individuals are monitored and managed through the goals of neo-liberalism. Risk is governed via a heterogeneous network of interactive actors, institutions, knowledges and practices...risk is problematized, rendered calculable and governable. So too, through these efforts, particular social groups or populations are identified as 'at risk' or 'high risk', requiring particular forms of knowledge and intervention." Expert knowledge enables subjectification and normalization, which are means of controlling populations and maintaining the disciplinary power of the government. While the theory of the risk society tends to adopt a top-down view of knowledge flow, that is, from experts to the lay public, Foucauldian scholars view the lay public as active subjects of governance, active participants in their own

subjectification and normalization: "Rather than mainly being externally policed by agents of the state, individuals police themselves, they exercise power upon themselves as normalized subjects who are in pursuit of their own best interests and freedom, who are interested in self-improvement, seeking happiness and healthiness (Gordon 1991)," (Lupton, p. 88).

There are any number of holes and flaws in each of the theories described above such that viewed in isolation, none are completely compelling. However, taken together, I believe they offer a relatively comprehensive and rich representation of our understanding of risk. To summarize, the academy can be divided into two groups: those who subscribe to a realist view of risk and those who emphasize the ways in which risk is a socially constructed phenomenon. To complicate matters, many scholars have tried to stake out a middle ground; they argue that while potential hazards that are singled out as risks may in fact exist objectively, our knowledge of such risks remains deeply embedded in cultural and social contexts and is shaped by individual subjectivities. Beck (1992, p. 33) readily acknowledges this tension in his work, "By contrast to the tangible clarity of wealth, risks have something *unreal* about them. In a fundamental sense they are both *real* and *unreal*."

Although one might find fault with the individualist approach and biased rational choice/actor model implicit in the psychometricians' work, these scholars should certainly be commended for first establishing risk as a serious topic worthy of scholarly pursuit. Moreover, despite its overall objectivist/realist slant, psychometric research actually highlights the role of subjectivity in the formation of individual judgments and risk perceptions. The psychometric paradigm makes perhaps too sharp of a distinction between expert and lay understandings of risk; nevertheless, I think it is a relevant and necessary distinction. Expert and non-expert discourses of risk may be more heterogeneous, constructed, and reflexive than psychometricians' assume, but they do appear to represent categorically different ecologies of knowledge. Sociocultural perspectives of risk have begun to redress the gaps in psychometric risk theory by calling attention to the myriad ways in which risk perceptions and discourses are iterative, nonlinear, and feedback-intensive and informed by worldviews, social networks, power relations, structural constraints, cultural norms, symbols, and categories.

The implication is that psychometricians and experts reduce risks to the point where they lose meaning and import for non-experts. In striving so hard for "objectivity," the experts fail time and time again to capture uncertainty, risk, and catastrophe as they become real in people's lives, through subjective and localized individual experience. Underlying all of these varied perspectives, however, is the idea that risk is a defining feature and central concern of modern society.

It also seems clear that the competing discourses represented in the academic literature mirror the conflicting assessments and attitudes toward risk that prevail in society at large. Furthermore, just as many risk



theorists have argued that the probabilistic views of risk common in expert discourses are too narrow, that experts are blinded by training in statistics, engineering, etc., I would argue that risk theorists from both the realist and social constructionist camps (as well as those who subscribe to intermediate perspectives) are similarly blinded by academic conditioning and limited toolkits: as Mark Twain observed, "To the man with a hammer, everything looks like a nail," or as Taleb (2007) might put it, "We are all turkeys." Taleb (2007, p. 40) invites his readers to imagine a contented and well-fed turkey, "Every single feeding will firm up the bird's belief that it is the general rule of life to be fed everyday by friendly members of the human race 'looking out for its best interests,' as a politician would say. On the afternoon of Wednesday before Thanksgiving, something *unexpected* will happen to the turkey. It will incur a revision of belief." Indeterminacy and uncertainty will forever lie beyond the bounds of human knowledge, and it is extremely arrogant, even dangerous, to presume otherwise – for proof, just consider what *unexpectedly* happened to that poor turkey – and many other unsuspecting turkeys – in the days leading up to Thanksgiving. In most important cases (i.e., in the case of black swan events), what transpired in the past is very rarely a reliable indicator of what will transpire in the future.

## Methods

My research began with web searches for 9/11-related materials. From the outset, I intended to collect and evaluate both expert/institutional and non-expert/lay discourses in order to compare and contrast these streams of risk knowledge. For each source, I sought to (1) identify the key participants and stakeholders, (2) assess the explicit and implicit motives, and (3) analyze the discourse in the context of the competing claims and ideas regarding risk in the academic literature. This discursive analysis included interpretations of language use, medium/format, multimedia content, substantive content, and rhetorical strategies.

## The (Highly Predictable) Governmental Discourse on 9/11 and Risk

The 9/11 Commission Report, or more formally The National Commission on Terrorist Attacks Upon the United States, was "...chartered to prepare a full and complete account of the circumstances surrounding the September 11, 2001 terrorist attacks, including preparedness for and the immediate response to the attacks," as well as to provide recommendations designed to protect against future attacks (The National Commission on Terrorist Attacks Upon the United States, 2004). The independent, bipartisan commission was created by congressional legislation and signed into being by President Bush in 2002. On July 22, 2004, the commission released its public report, which is freely available for download at the Commission Report's website. The report is also available in bookstores across the country and from the Government Printing Office. Notably, the

print version of the report has sold well over a million copies and while I was unable to find download statistics, the print sales alone indicate an enormous public interest in the project. The website was frozen on September 20, 2004 and is now a federal record. Everything about the Commission Report, from its long-winded name to its congressional pedigree, screams expert and institutional authority.

After a little digging on the website, I uncovered biographies for the commission members. The following sample of introductions and qualifications underscores the members' expert standing: "Thomas Kean, chair, is former governor of New Jersey (1982-1990) and, since 1990, the president of Drew University;" "Lee Hamilton, vice chair, is president and director of the Woodrow Wilson International Center for Scholars. Prior to becoming director of the Woodrow Wilson Center in 1999, Hamilton served for 34 years in Congress representing Indiana's Ninth District;" "Bob Kerrey is President of New School University in New York City. For twelve years prior to becoming President of New School University, Bob Kerrey represented the State of Nebraska in the United States Senate. Before that he served as Nebraska's Governor for four years;" and the list goes on. The commissioners include former senators, congressmen, governors, White House staff, district attorneys, and college presidents, in short, political experts of all stripes. Due to their expert standing, the commissioners' findings are presented as objective and indisputable; there is no room for indeterminacy.

The website provides links to the completed 9/11 Commission Report, as well as to more easily digestible content including an executive summary of the report and a public statement from the chair and vice-chair. There is a wealth of other materials, including staff statements, press releases, public hearing transcripts, and a frequently asked questions page. I also came across a link to the 9/11 Public Discourse Project, which offered op-ed pieces from Kean and Hamilton, additional reports of recommendations from the commission, a schedule of discussion panels, and more. Unfortunately, this initiative "ceased operations on December 31, 2005," and worse still, it never really involved public discourse (*9/11 Public Discourse Project*, 2005). The site's boldest effort to reach out to the public comes in the form of an open letter to the families of 9/11 victims: "The Commission is dedicated to working on behalf of the safety and security of the American people and the thousands of families who lost loved ones on September 11, 2001. As chair and vice chair, we hope to reach out to as many family members as possible, both directly and through the Commission's family liaisons," (Kean and Hamilton). The commissioners also acknowledge that many family members helped to catalyze the commission's formation.

The commissioners' intended audience is made explicit in the preface to the final report: "We present the narrative of this report and the recommendations that flow from it to the President of the United States, the United States Congress, and the American people for their

consideration," (*Final Report of the National Commission on Terrorist Attacks upon the United States*, 2004, p. xv). "The nation was unprepared," the report instructs (*ibid.*, p. xv). The preface also emphasizes the commission's efforts to include the lay public, "From the outset, we have been committed to share as much of our investigation as we can with the American people. To that end, we held 19 days of hearings and took public testimony from 160 witnesses," (*ibid.*, p. xv). Later, the report turns to the question "What to do?" and the commissioners offer the following bit of wisdom: "Our strategy should also include defenses. America can be attacked in many ways and has many vulnerabilities. No defenses are perfect. But risks must be calculated; hard choices must be made about allocating resources... Finally, the nation must prepare to deal with attacks that are not stopped," (*ibid.*, p. 364). The report provides foreign policy and bureaucratic recommendations, valuable insights for policy makers, but it offers the public little more than, "It (probably) will happen again," and "We need to calculate risks in order to prepare." Both of these messages signal a disregard for public knowledge and risk perceptions. The report focuses on politics, and though it does present the American public with a complex history lesson, it fails to instruct lay people on how to live in a world with unstoppable attacks and increasing vulnerability. Furthermore, the report implicitly supports the view that knowledge and ideas about the risk of terrorism are confined to the privileged domain of experts, while politicians and most especially, the American public, require an objective, calculative evaluation of risk in order to correct their inaccurate perceptions.

The United States Department of Homeland Security (DHS) was established on November 25, 2002, by the Homeland Security Act of 2002, which consolidated twenty or so executive branch organizations related to homeland security into a single Cabinet agency. Operating under the same "need to calculate" imperative as the 9/11 Commission, the DHS launched its Homeland Security Advisory System, the agency's infamous color-coded terrorism risk calculator, in March 12, 2002, the result of Homeland Security Presidential Directive 3 (Homeland Security Presidential Directive 3, 2002).

According to the DHS, "The Homeland Security Advisory System is designed to guide our protective measures when specific information to a particular sector or geographic region is received. It combines threat information with vulnerability assessments and provides communications to public safety officials and the public," (Department of Homeland Security, Information Sharing and Analysis > Homeland Security Advisory System). The department also offers a justification for their color-coded threat level system, which "...is used to communicate with public safety officials and the public at-large through a threat-based, color-coded system so that protective measures can be implemented to reduce the likelihood or impact of an attack. Raising the threat condition has

economic, physical, and psychological effects on the nation; so, the Homeland Security Advisory System can place specific geographic regions or industry sectors on a higher alert status than other regions or industries, based on specific threat information" (ibid.). So, in an ideal world, the advisory system links relevant public officials and concerned private citizens with some objective, quantified measure of the risk of a terrorist attack which tells us how to act so as to reduce the "likelihood or impact of an attack" (ibid.).

However, members of the American public, like myself, have no real access to the equations, formulas, scenarios, etc. that are input into this great risk calculator. All that we can see is the color which gets spit out at the end of the process, some vague indicator of uncertainty or confidence intervals or something along those lines. The colors do not tell me where an attack will take place or what I can do to avoid such an attack, they only tell me whether there is a green risk, or a blue risk, or worse yet, a yellow risk, or an orange risk, or even a red risk, and when the DHS tells you that there is a red risk, they really mean it: red means there is a "severe" risk that *maybe* something bad might happen somewhere soon. Even if one were to subscribe to the view that risks can be quantified in terms of the likelihood and severity of potential outcomes, the risk advisory system still fails to inform since it obscures and conflates these two factors. Clearly a terrorist attack will tend to have severe consequences, but the probability that such an attack will take place today, tomorrow, or even in the next year, remains largely uncertain and unknown.

Obviously it is difficult to gauge the reliability of such an ambiguous signal; it is clear, however, that to date, no major terrorist attack has occurred on U.S. soil since September 11, 2001. Meanwhile, on my February 27, 2009 visit, the DHS site warned me of a yellow, or "significant," risk of a terrorist attack (ibid.). Helpfully, the DHS suggests that I remain vigilant, take notice of my surroundings, report suspicious items to the local authorities, and set up an emergency preparedness kit and emergency plan (ibid.). Nevertheless, I cannot help but wonder why I should abide by these recommendations when the DHS acknowledges that there "...is no credible information warning of an imminent, specific threat to the homeland," while simultaneously advertising an elevated national threat level (ibid.). Given these inconsistencies, it is quite clear that the Department of Homeland Security's Risk Advisory System is woefully inadequate at communicating the expert views of risk to the American public. Moreover, the system reveals the weaknesses of probabilistic views of risk: they are hardly informative or practicable for normal people, and they are often inaccessible, that is the calculations are incomprehensible or carried out behind closed doors. From a Foucauldian perspective, the DHS web resources are obviously designed to promote self-scrutiny and self-policing in the general public; reports of suspicious activity are openly solicited, the color-coded threat alerts remind us that

we remain at risk and in danger, thus ensuring a state of fear and constant vigilance reminiscent of Bentham's Panopticon (Bentham, 1787). The government discourse of 9/11 presents terrorism as a universal and constant threat, suggesting that we live in a world not unlike Beck's risk society in which catastrophe has become the rule rather than the exception. The hindsight bias is readily apparent in both the 9/11 Commission Report and the Homeland Security Advisory System: knowing that 9/11 occurred and understanding the event's historical context has not left us in a better position to predict and prepare for specific future attacks.

### Public Discourses of 9/11: Dependency, Trust, Alienation, and Resentment

Not surprisingly, the public discourses of 9/11 are heterogeneous, individualized, and resistant to generalizations. The notion of a uniform, irrational, and inaccurate public perception of a given risk which emerges in the psychometric literature and the expert/governmental response to September 11 is simply a myth. The discourses which I evaluated seemed to breakdown into three broad categories: those that responded to the governmental discourse on 9/11 with passive trust; those that responded with active mistrust; and those that appeared ambivalent or otherwise positioned themselves outside of the government/public conflict.

Though it was typically implicit, a number of the public responses exhibited a good deal of trust in the federal government and its discourse on 9/11. This group included The National Terror Alert Response Center (NTARC) as well as a handful of 9/11 families-oriented organizations, like Families of September 11 and 9/11 Families for a Secure America. The NTARC is a private homeland security blog:

"NationalTerrorAlert.com is a private homeland security blog and not affiliated with any government agency. We archive and comment on homeland security related news items from a variety of news sources, as well as provide immediate updates on breaking stories, bulletins and any change in status to Homeland Security advisory," (NTARC). The site invites user participation and feedback; the contact form solicits story tips, general comments, suspicious activity reports, advertisement offers, questions, problems with the site, etc. In addition, users can sign up for the NTARC RSS feed to "...receive the latest breaking news, bulletins and alerts as they happen. In addition, specific details related to breaking events will only be made available to RSS feed subscribers" (ibid.). The NTARC homepage is dominated by threatening headlines: "Threat of Mexican Drug Cartels Near Crisis" (3/3/09), "Washington D.C. Suburbs Fertile Ground For International Terrorist Financing," (3/3/09), "U.S. Says Iran Has Enough Material for Nuclear Bomb," (3/1/09), "Terrorist in New York City Bombing Plot Released," (2/26/09), etc. (ibid.). In addition, the homepage features a live alert based on the DOH's color-coded system as well as guides to emergency preparation, biological and chemical weapons, and explosive devices and nuclear weapons. In this way, the

NTARC implicitly supports the governmental discourse on 9/11. On March 1, 2009, the NTARC launched its Homeland Security Response Network initiative, "This network was created to promote emergency preparedness through awareness, education, community involvement and partnerships between individuals, groups and organizations. Although the site has not yet launched, registration is open and nearly 1000 people have already registered," (*Homeland Security Response Network*). Although this initiative is only days old and still developing, forum posts are already piling up and a community is starting to emerge. The NTARC site is interesting for a number of reasons. First of all, it implicates Kasperson's (1988, 1996) SARF framework; this blog filters and distorts the governmental assessment of risk, it serves as a node in an information-communication network. Inspired by the DHS terror alert system, the NTARC presents an ever-growing list of real and imagined threats. In addition, the NTARC appears to corroborate the governmentality view of risk, as it seems a sure sign of self-surveillance and policing. Meanwhile, Families of September 11 and 9/11 Families for a Secure America explicitly endorse the governmental discourse: one of the stated goals of Families of September 11 is, "To champion domestic and international policies that respond to the threat of terrorism including support for the 9/11 Commission Recommendations..." (*Families of September 11, Who We Are*).

In sharp contrast with the responses described in the preceding paragraph, several public discourses evoked a sense of distrust and disillusionment with the government's response to 9/11. The History Commons Profile on DHS and the Coherent Ramblings blog entry on Homeland Security challenge the validity of the governmental discourse and position themselves as alternative sources of expert knowledge. The History Commons website is administered by the Center for Grassroots Oversight (CGO), an organization which is in turn sponsored by The Global Center, a non-profit. The website is a platform for "open-content participatory journalism," facilitating collaboration in the documentation of past and current events and the entities associated with those events (*History Commons*, "About this site"). The website's architects emphasize data sharing in their mission statement: "The data is displayed on the website in the form of dynamic timelines and entity profiles, and is exportable into XML so it can be shared with others for non-commercial purposes," (*ibid.*). The site offers a "Cooperative Research Forum," but only registered users can post entries. Registration, however, is free and relatively painless. The History Commons also offers a "Complete 911 Timeline," which they describe as a grassroots investigative project, "The data published as part of this investigation has been collected, organized, and published by members of the public who are registered users of this website," (*History Commons*, "Complete 911 Timeline"). Although the History Commons adopts an unmistakably skeptical approach in its review of the events of September 11, the site's intent is not to promote

conspiracy theorizing, but rather to educate a largely uninformed public, "Polls show that Americans are extremely uninformed about 9/11. A third of Americans can't even correctly guess the year 9/11 took place and about half of all Americans mistakenly believe Saddam Hussein had a role in the attacks... Those of us working on the 9/11 timeline are striving to boil the news on terrorism down to a reasonable level so citizens can stay well informed. We strive to be objective and keep any layers of interpretation as thin as possible," (*History Commons*, "Complete 911 Timeline," "About This Project"). Coherent Ramblings is an individual user's blog, whose mission, in the author's own words, has been to point "...out stupidity, corruption and self-serving..." (Coherent Ramblings Homepage). The blogger's exposition on homeland security features a timeline of terror alerts which suggests that many advisories may have reflected diversionary political tactics rather than concrete threats. The author maintains a Creative Commons license, which enables other users to share and adapt the site's contents so long as they attribute the licensor and use the work for non-commercial purposes. It appears as though the blog was last updated on April 1, 2007. Notably, the author provides hyperlinks to the sources for all of the points on the terror alert timeline. The timeline paints a very clear picture: the Bush administration's terror alerts consistently came on the heels of unfavorable political dealings or press coverage

(<http://homepage.mac.com/gcatalone/iblog/B946297652/C722062357/E1905819813/>). The 9/11 Truth Movement Forum (<http://forum.911movement.org/>) and 911blogger.com (<http://www.911blogger.com/>) similarly challenge the government's discourse on 9/11. All of these public responses depend upon communities of frustrated, alienated, and distrustful users who have come together to build a comprehensive, accurate, and dynamic knowledge base through collaboration and feedback. These users are effectively exploiting novel forms of internet-enabled discourse, such as forums, wikis, and blogs, to ensure that information is shared and transparent. They are active participants in the generation and transmission of risk perceptions; no longer content to serve as passive receptacles for "expert" assessments of risk, these respondents encourage civic engagement, the pursuit of knowledge, reflexive awareness, and a healthy dose of skepticism, and in so doing, they blur the line between expert and lay discourse.

Finally, I encountered countless public responses which lacked the emphasis on issues of trust and the interface between public and government that characterized the responses detailed above. Instead, these respondents describe the risk of 9/11 as localized, contextualized, and individualized in their lived experience of the catastrophe. As one might have guessed from their personal nature, these responses comprised mainly blogs. Two particularly illustrative examples come from NYC-based bloggers. The Evenhand blogger's entry on September 12, 2001, emphasizes a city, and lives, transformed:

We are still reeling from the events of yesterday, but all in the Cypress family are all safe. Our hearts go out to all our friends who are missing loved ones. I tried to get to work on Tuesday, not understanding the full extent of the disaster that was unfolding. Almost immediately after the first plane struck the North Tower, subway service was interrupted, so I walked home. Just before I arrived, the second plane slammed into the South Tower. I spent the day mostly watching the events unfold on television, just like the rest of the world, except for the reminders that it was here in my city, my home: the ambulances in the streets and the fighter jets overhead. There was (and still is) most of all a stunned silence. People in the streets walk quietly; there is no traffic to speak of. A friend who watched at our house because he couldn't get home tried all morning to get word about a good friend of his who worked in the North tower, to no avail. I feel lucky that I didn't have a close friend or relative who worked in the towers, but I have already spoken to a couple of friends who did and haven't yet heard that they're safe. They are all in our prayers, (Evenhand: Postproduction Journal, 9/12/2001, <http://www.evenhand.com/journal/post/091201.html>).

Caoine is Emma Story's personal blog and webpage. Story is a web developer living and working in New York City. Her blog posts from September 2001 are personal, emotional, and illuminating. Story's post on September 10 details a visit to her parents' home, reflects on Nine Inch Nails, and announces her plans to return to NYU (Story, 2001). The next day, her post begins, "i don't have time to write a full entry right now but i just wanted to say i'm fine, nothing got hit in my area. more later," and ends, "i don't know what to say about all this. i still haven't heard from all my friends who work in lower manhattan and i'm sick with worry. i'm going to go lie down for a bit, i'll update more later. thank you all for your concern, i really appreciate it. if you can, try to go out and give blood - they really need it," (ibid). On the twelfth, Story writes, "there's no official death count yet. just the fact that everyone is unwilling to make an estimate is alone terrifying - the closest it's come was last night during president bush's address, when he referred to the 'thousands of lives suddenly ended.' thousands. i can't even comprehend the fact that thousands of people with whom i used to share my city are just not there anymore...i didn't actually see the video of the towers collapsing for the first time until about seven o'clock last night, when i finally managed to get some fuzzy reception on a few channels showing news. it was horrifying. the descriptions provided by the radio reporters on npr just didn't do it justice; it looked completely unreal, like something out of a bad action movie," (ibid.). A week after the attacks, on September 18, she writes, "i feel kind of run down. i haven't really been eating, and when i sleep i have all these weird, terrifying dreams. i don't know if this is still anything to do with last tuesday or what, but i wish it would go away," (ibid.). Despite their informality, these sources indicate the extent to which risk perceptions reflect embodied, subjective experience. Furthermore, they demonstrate that people view themselves both as individuals and as members of social networks, communities, and society at large. There is also an unmistakable humility in these blog posts; they make no attempt to reign in and reify indeterminacy, they simply communicate a sense of loss and powerlessness in the face of uncertainty.



## Discussion

The internet provides a forum for public perceptions as well as a vehicle for governmental risk management strategies. In many ways, governmental and public perceptions reflect distinct ecologies of knowledge and communication. Governmental perceptions of risk are constructed in a top-down fashion and expressed as probabilities and confidence intervals, while public perceptions are more often bottom-up constructions, involving open access, collaboration, and knowledge-building; here, subjectivity is often embraced. Thus far, expert and institutional authorities have failed to exploit the novel forms of discourse enabled by the internet, such as wikis, blogs, and forums. In addition, their efforts to communicate risk using the internet appear largely ineffective; the federal government seems to be in the business of fear-mongering rather than that of risk prevention. The tension between online governmental and public perspectives is undermining trust in traditional expert institutions; there is a palpable sense of frustration, alienation, and resentment of ongoing dependency in many of the public discourses on 9/11 (Wynne, 1996).

My research also suggests that the internet has played a critical role in the recent history of our risk society. The internet dramatically improves availability and access to information, and as a result, it affords everyone armed with a personal computer and a modem with the knowledge required to transform unseen threats into visible risks. In this way, the internet "levels the playing field," so to speak, by bringing expert and lay discourses into closer contact and enabling the emergence of a class of "amateur" or non-traditional experts, like bloggers and forum-ites, who provide alternative, and often no less reliable, streams of knowledge and information. Information on the internet is simultaneously generated, filtered, transmitted, etc. by both powerful, hegemonic forces, like Google, and individual users on their home computers. Given the glut of information passed on by this diverse array of actors, information quality and vetting have become primary concerns; risk is only made manifest *and* somewhat manageable, if it all possible, in the presence of knowledge. Thus, the internet has changed our relationship to risk by facilitating the proliferation of massive amounts of information and transforming the expert/non-expert interface. I believe that this traditional binary opposition between experts and laypeople is being reconfigured as a conflict between the government and the general public; it is becoming less and less clear whom one should trust, indeed, the lackluster performance of traditional experts in handling risk has only served to undercut the legitimacy of privileged expert knowledge. There are no clear winners in the ongoing risk debate; while academics continue to theorize in the abstract and worry about subjective and objective realities, both the government and the public remain ill-equipped to deal with risk and blind to uncertainty – to the black swans which surround us.

Ultimately, the internet might serve as a more productive, democratic, and transparent medium for formulating risk-related public policy. The internet opens access and provides a space in which lay voices, attitudes, and perceptions can more freely enter into the risk debate. There is, however, a real risk (no pun intended) that internet-enabled policy debates could spiral into a tug-of-war between incompatible risk frameworks: Is there room for "acceptable" levels of risk in public perceptions? Will experts deign to consider lay anxieties and sociocultural context in their assessments of risk? Can expert techno-scientific perspectives and lay experiential, tacit knowledge be united in a common framework? We shall see.

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