

Construction of Hazard Perception and Activism on the Internet: Amplifying Trivial Risks and Obfuscating Serious Ones

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Abstract

Social construction of hazard policy entails a risk assessment dialogue between technical experts and public interest activists and between each of these and elected risk management policy makers. These dialogues have traditionally taken place in the frequently distorting presence of broadcast and print media, with varying effect on public perception, interest, and recruitment to political action. The advent of the Internet has fundamentally altered these discussions, with the immediacy, duration, geographical reach, and exponential expansion of communications among individuals it affords. Early results have included an impressive empowerment of individual activists vis à vis the corporate interests that dominate traditional media, as well as tremendous citizen pressure on risk management decision makers. This is a blade that cuts both ways, however, with the Internet introducing new opportunities for demagoguery and for hijacking the reference group trust by which most people make political decisions on issues far beyond their training. This paper illustrates these points with case studies involving both technological and natural hazards controversies played out on the Internet.

Keywords

Risk amplification, risk attenuation, Cassini, plutonium, activism, Internet, brushfire, Malibu

Introduction

Risk assessment science and risk management policy ideally inform one another regarding natural and technological hazards. Policy toward any given hazard is forged in complex and sometimes contentious dialogues between risk assessment scientists and risk management decision makers. Impinging on these two groups is citizen pressure generated by public interest activists and the often distorting presence of print and broadcast media. Media portrayal of a given hazard or disaster affects individual perceptions and agency reactions to a given situation or event, and a large body of critical literature has shown media performance in hazards and many other issues to be problematical (e.g., Bagdikian, 1992; Gans, 1989; Herman and Chomsky, 1988; Lee and Solomon, 1991; Solomon and Cohen, 1991; Stevens, 1998-99).

A common criticism is of the sensationalism many media bring to hazards stories. Sensationalized coverage can raise public concern about minimal risks, obfuscate the nature of significant risks, or hamper efforts to respond to a disaster (Mazur, 1994, 1998; Singer and Endreny, 1994; Smith, 1992). Much more troubling is evidence suggesting systematic biases in media coverage, which can lead to inequitable hazard mitigation or emergency response, recovery, and reconstruction (Dymon and Boscoe, 1996; Elliott, 1989; Rodrigue, Rovai, and Place, 1997; Rovai, 1994; Rovai and

Rodrigue, 1998). The media, then, may partly explain marked differences in risk perception between risk assessment scientists and the lay public (S. Friedman, 1994; Heiman, 1997; Hollander, 1991; Jasanoff, 1991; Johnson, 1993; Kasperson and Kasperson, 1991; Kasperson et al., 1987; Margolis, 1996; Mazur, 1994; Quarantelli, 1989; Shrader-Frechette, 1990). The media may play to and enhance cultural predispositions to exaggerate certain hazards and deny others (Berglund, 1998; Douglas and Wildavsky, 1982; Slovic, Fischhoff, and Lichtenstein, 1982).

Risk assessment scientists, risk management policy makers, and lay activists have frequently noted their frustration in getting their messages to the general public through traditional media (e.g., McChesney, 1997; Phillips, 2000, 1997; Weldon, 1997a, 1997b). They cannot control the media, and the cost of producing and distributing their own information in forms they like is beyond their resources. Of growing importance as a possible remedy is the use of Internet media in these discussions to generate awareness and political activism. These interactive media allow technical experts and activists to bypass media they do not control to get their messages out to relatively large audiences. E-mail, Usenet, listservers, chats, and web pages are relatively inexpensive. More importantly, the Internet also potentially enables the exponential expansion of communication through the chain-mail dynamics of the forward button. For the first time, ordinary citizens and risk assessment scientists have the means to inexpensively communicate their messages to large audiences. How might this potential depolarization of power in communication affect perception of and behavior towards a hazard? How might the Internet, then, affect the balance between risk assessment science and risk management policy in a democratic society?

This paper traces the impact of the Internet on two very different dialogues about risk assessment and risk policy. The first is the case of the plutonium on board the Cassini-Huygens mission to Saturn and Titan, and the second is the case of chaparral fire in the montane suburbs of Southern California. In the former case, the Internet was used to generate enormous public concern and pressure over a hazard deemed trivial by conventional risk assessment; in the latter, the Internet was used to debunk a hazard viewed as substantial and socially inequitable by the professional risk assessment community. Both cases demonstrate the empowerment of private individuals enabled by the Internet, as well as the shadow of empowerment - namely, demagoguery.

Cassini

Launched in October of 1997, the Cassini orbiter will spend four years on tour around Saturn, beginning in 2004, and will drop the Huygens probe onto Saturn's largest moon, Titan (Spilker, 1997). A controversy erupted over the mission as a result of NASA's decision to use radioisotope thermoelectric generators (RTGs) and thermal units (RHUs), both to generate electrical power for the instruments and to keep them at operating temperature 1.4 billion kilometers from the sun. These devices contain ceramicized plutonium-238 dioxide. Another related point of controversy was the trajectory that would be used to get Cassini from Earth to Saturn, which entailed a gravity assist around Earth in August of 1999 (Chong, 1997; Grossman, 1996; Hoffman, 1997; Kaku, 1997; NASA, 1995, 1997).

The movement to abort the launch and, later, the Earth swingby did not stop either event. It did generate an enormous amount of controversy and pressure on Congress (Weldon, 1997a, 1997b), which may affect the design, authorization, and funding of future missions to the outer solar system.

Besides a number of print media and television pieces on the controversy, most of the day-to-day activism took place via e-mail, listservers, and Usenet, as well as on the World Wide Web. I concentrated on Usenet, because it is archived by Deja.com in a fully searchable form. I went through the messages posted on "Cassini" from April 1995 through March 1999 and developed a sample of 937 authors of 8,020 messages on the controversy. The authors were classified by stance, concerns they raised, and whether their messages were original compositions or simply forwards from someone else. Sixty percent were supporters; 21% were opponents; and 20% were neutral. In this paper, I concentrate on the opponents. Fuller treatment of the content analysis can be found in Rodrigue (2001).

Opponents were dominated by three subtypes: First, 24% simply passed on messages originating from others, often without comment; second, another 24% wrote independent expressions of concern about the risks of plutonium in general or the risks during the launch and flyby phases of this mission in particular; and, third, 21% expressed interest in Nostradamus and astrology and showed great fear that Cassini was the "King of Terror" that Nostradamus had

predicted would come from the skies and destroy Earth in summer of 1999.

Given that the forwarding of messages was such a large part of the anti-Cassini Usenet traffic, I tracked the sources of the messages that were being forwarded. They originated with about a half dozen individuals. The Cassini controversy thus demonstrates the empowerment the Internet offers to individual activists. Using e-mail, Usenet, or chats, a handful of people can alert others to an issue of concern and enlist them to spread the news. The population passively receiving these notices expands exponentially and, even if a small percentage of those exposed to the idea responds politically, the result can be tremendous political pressure. Potentially very empowering to ordinary citizens, Internet communication offers a counterweight to the political power of great corporations and wealthy individuals, which normally dominate the traditional print and broadcast media due to the cost of entry into that medium. Democratization, then, is the great strength of the Internet.

The demagogic use of the Internet, however, remains the shadow of democratic empowerment (Fischer, 1999; Rodrigue, 2001). Appeals to conspiracies, ad hominem attacks, exaggeration, and other emotionally manipulative devices were abundant in the Cassini debate. The complex nature of Cassini, and of many other technological and natural hazard controversies, makes the issues difficult to understand - if not inaccessible - to the average citizen, who must nonetheless decide whether to take political action about such situations or, worse for a democratic society, remain uninformed and apathetic (Johnson, 1993).

This is a dilemma we all face as citizens, scientists or not. We have to make political judgments, although we do not have the time to look into issues far from our training. Hence, we have shortcuts to opinions: we tend to defer to the opinions of people and organizations we trust (Johnson, 1993). As just shown, new media make it possible for a handful of people to tap this mechanism of trust and, through the ease and exponential expansion of activism-by-the-forward button, mobilize a lot of us into a politically potent movement over relatively trivial hazards.

Chapparral Fires

Chaparral is fire-dependent scrub vegetation in many mountainous areas of California. The leaves are sclerophyllous and oily and resist decay upon falling from the shrubs. As the plants age, the ratio between dead wood and active stems and twigs increases. As a result of this accumulation, the longer the period since a fire, the greater both the probability and the magnitude of the next fire. Residential construction and occupation in such a fire-dependent vegetation system necessarily expose people to the destructive potential of a natural event (fire), which is thereby transformed into a natural disaster (Biswell, 1974; Cooper, 1922; Minnich, 1988; Schoenherr, 1992; Vankat, 1979).

For whatever reason, hillside residence is highly valued by the dominant Anglo-American culture in California. In the ensuing competition for suitable building sites and dwellings, the value of such homes and lots is bid up out of reach of households of modest means (Aschmann, 1959; Gillard, 1980). It is the well-to-do, then, who have the resources to act on the cultural preference for hillside residence.

While the benefits of hillside homes with views are, thus, narrowly privatized, the costs are socialized through fire-fighting taxes and a mandatory fire insurance assigned risk pool in California. Thus, the result is a hidden upward income transfer in the form of a social subsidy to wealthier households able to act on the environmentally dysfunctional preference for homes with a view (Rodrigue, 1993).

This situation has been appreciated for decades by biogeographers, hazards researchers, and the insurance industry in California. It became more widely known when Mike Davis, a caustic observer of Los Angeles' social and environmental scene, began to publicize the wildfire hazard in a series of inflammatory articles in the alternative *L.A. Weekly* and then as a chapter in his book, *The Ecology of Fear* (Davis, 1999).

The original publication of this book in 1998, with its chapter, "The Case for Letting Malibu Burn," together with Davis' MacArthur Foundation genius grant, was quickly followed by an astounding ad hominem attack on his character. A media firestorm erupted in October 1998. Leading the charge against Davis was one Brady Westwater, who began the controversy by posting a large web page (<http://www.burnbox.com/westwater.html>) accusing Davis of

"error, deception and mistakes" in his research. Westwater then argued that, because of "the replacement of old wood shake roofed houses with fire resistant structures, better fire truck access, brush clearance and the installation of up to date water lines, the fire damages will greatly decrease over the years" in Malibu. "Brady Westwater" turns out to be one Ross Ernest Shockley, a realtor in Malibu, whose living depends on selling those structures in the chaparral (Jones, 1999).

The "Westwater" web page then became the basis for print media attacks by L.A. boosters. The first of these was David Friedman, a former real estate executive and continuing consultant with the Catellus Development Corporation, who writes an urban affairs column in the throwaway *L.A. Downtown News*. Friedman publicized the "Westwater" web page (D. Friedman, 1998a, 1998b). This story then served as the basis of an article by Jill Stewart in the *L.A. New Times*, a newer rival to the *L.A. Weekly* (Stewart, 1998). From there, the story was picked up in national and international print and web-based media and, somewhat belatedly, by the *L.A. Times* (Rohrlich, 1999).

Lost in the invective has been any sense of the risk to which wealthy home buyers in the montane suburbs of California are subjecting themselves, their families, and their prized possessions, not to mention the social inequities involved in paying for their inevitable losses. An understanding of the fuel cycle and the changes through time of probabilities and magnitudes of future fires never penetrated public understanding as long as it was confined to the professional writings of scientists writing for their peers. That same understanding, delivered forcefully to a broader public audience by an able and entertaining author, set off an explosion of protest by a handful of individuals with direct interests in continuing suburban development of the fire frontier. The treatment of Mike Davis by those with a stake in his message may well discourage others from engaging in popular discourse to inform policy toward development on the fire fringe and public perception of this and other hazards.

This controversy highlights the empowerment of private individuals by the Internet, in this case, the web. In this case, an individual negatively impacted by Davis' message of chaparral fire hazard in Malibu bypassed media reports of basically positive views of Davis' message in professional communities. By placing his detailed critique of Mike Davis in general and Davis' comments on fire hazard in particular on the web, "Westwater" reached a few key individuals in the popular print and Internet media. These were, in turn, able to drown out the key message of chaparral fire hazard in a sea of contumely against Davis.

Conclusions

In conclusion, there is much to be learned about the communication of hazard assessment and the generation of political pressure on the hazard policy decision-making process from the various participants in the Cassini and chaparral fire controversies. These two cases illustrate both the social amplification of risk (Cassini) and the social attenuation of risk (chaparral) through a new communications outlet. The low cost of entry into Internet communication enables the circumvention of media priorities and biases in coverage . . . and of professional peer review. This kind of communication enables the recruitment of activists and thus generates a lot of political pressure on the already inherently political process of hazard management. Hazard management policy in many ways governs what hazard assessment science is done and the standards by which a hazard is deemed worthy of intervention. So, the Internet will impact risk assessment indirectly by its impact on policy and directly, in some cases, by delegitimizing the conclusions of risk assessment.

Relevant URLs

CASSINI CONTROVERSY:

NASA/JPL:

- <http://www.jpl.nasa.gov/cassini/> (general information about the mission)
- <http://www.jpl.nasa.gov/cassini/english/msnsafe/> (safety issues)

- <http://www.jpl.nasa.gov/cassini/english/msnsafe/introlinks.html> (environmental impact assessments)

CASSINI OPPONENTS

- <http://www.animatedsoftware.com/cassini/cassini.htm> (*Stop Cassini Newsletter*)
- <http://www.nonviolence.org/noflyby/> (Stop Cassini Earth Flyby Action Site)
- <http://www.projectcensored.org/pasttopten/Stories1996.html> (Project Censored's top story of 1996)

CHAPARRAL FIRE:

- <http://www.csulb.edu/~rodrigue/fire.html> (my *California Geographer* article on the political economy of chaparral fire hazard)
- <http://www.rut.com/mdavis/letmalibuburn.html> (Mike Davis piece on chaparral fire)
- http://www.coagula.com/mike_davis.html (current location of "Brady Westwater" piece on Mike Davis)

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