30. Risk Communication

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The Western concept of risk is "a relatively novel phenomenon, seeping into European languages in the last 400 years," writes Gabe Mythen (2004), though there is no clear consensus about the term's etymology (p. 13). Among other meanings, scholars have traced *risk* to the Arabic word *risq* associated with wealth and fortune and to the Latin word *riscus* as referencing a slippery place or a steep rock or cliff that sailors must look out for in uncharted waters. Over the past few centuries, risk was increasingly quantified to measure possible outcomes in areas such as insurance and finance, where it was tied to probability more than uncertainty (Mythen, 2004, p. 13). Although technical and professional communication (TPC) scholars have continued to explore and dimensionalize the relationship between risk and uncertainty (Sauer, 2002; Walsh & Walker, 2016), this distinction has become blurred in the common contemporary understanding of risks as anticipated and uncertain dangers or threats.

By the late 20th century, "the term 'risk' obtained a pervasive and even intrusive presence in almost all institutionalized discursive fields in modern western societies" (van Loon, 2002, p. 5). A range of institutional efforts—such as government agencies, laws and regulations, and consulting firms—have been formed to predict, prepare for, and manage risks, particularly environmental, ***public*** health, and medical ones. Such efforts generated the modern field of risk analysis, which Alonzo Plough and Sheldon Krimsky (1987) described as "concerned primarily with predicting or quantifying the risks of 'scientifically identified hazards'" (p. 5). They added that risk analysis and management, as informed by decision ***science*** (developed in World War II), faced the challenge of connecting "the *assessment of risk*" to "political decisions concerning the *types, levels, and distribution* of risk [and resources to address it] acceptable to a society" (Plough & Krimsky, 1987, p. 5).

Although risk communication has been a more prevalent thread of ***research*** in communication studies (including health communication) and cognitive psychology (Reamer, 2015), it has become "an increasingly important aspect of the work of both technical experts and professional communicators" (Waddell, 1995, p. 1). We can track our field's engagement with risk communication along a general trajectory that moves from more *narrowly technical*, to ***rhetorical*** *and social*, and then to *cultural, material, and political attention* to risk communication, and that expands our notions of technical risk communicators' roles and responsibilities.

Risk communication was born from the need to convey to the public and other stakeholders levels of risks and their significance, and to gain cooperation with "decisions, actions or policies aimed at managing or controlling such risks" (see

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the definition by Covello et al., 1988, p. 112). It was also born from the growing recognition of a disconnect between expert and public conceptions of risk, and a growing distrust in risk management authorities, exigencies that several scholars have linked to the environmental advocacy movement that began in the 1960s (see Grabill & Simmons, 1998). Steven B. Katz and Carolyn R. Miller (1996) argued that the initial goal of risk communication was "'correcting' the public's 'risk perceptions' so they would better match the 'risk analyses' made by experts" (p. 116). This goal has been critiqued by risk communication scholars, including those in TPC, as grounded in a technocratic model characterized by an overvaluation of expert risk determination and assessment, the one-way transmittal of ***information*** from expert to public, and an assumption that public questioning of expert risk information is grounded in irrationality and must be corrected (see Katz & Miller, 1996; Rowan, 1994; Waddell, 1995).

Starting in the 1980s, strictly technocratic approaches to risk assessment and communication gave way to a broader engagement of psychological and social considerations for bridging the expert-public divide, as evidenced by discussions of trust, motivations, values, and experiences, and by research on risk perception and the social amplification of risk (McComas, 2006; Powell & Leiss, 1997). This shift was accompanied by a recognition of risk as socially and rhetorically constructed (see Field-Springer & Striley, 2014; Hilyard, 2014), and by more social and participatory models of risk communication. In concert with this shift, Plough and Krimsky (1987) advocated for a sociocultural definition of risk that more expansively accounts for communication "from any source to any recipient" (p. 7) and broader considerations of risk understanding and acceptability (p. 6). In her call for a rhetorical model of risk communication, Katherine E. Rowan (1994) pointed the way for technical and professional communicators to consider the challenges of persuasion and participation, including around the cultivation of credibility (p. 403).

Extending the social turn of risk communication, TPC scholars and rhetoricians have further conceptualized risk as rhetorically and socially constructed and risk communication as necessitating the fuller involvement of those affected by risk management decisions. A number of such scholars, some of whom also identify as rhetoricians of science, ***technology***, and medicine, have focused on risk communication in case studies of specific, time-bound risk crises and controversies (Reamer, 2015, p. 350; see also Jensen, 2015), while others have sought to expand this purview to longitudinal studies of changing risk communication strategies (Reamer, 2015) or to public-relations-oriented risk communication by researchers (Giles, 2010).

Some studies of specific crises have offered retroactive analysis of internal communication failures leading up to a particular crisis (e.g., Dombrowski, 1991; Herndl et al., 1991; Winsor, 1988). Because of its focus, this work overlaps with the area of emergency management and ***crisis communication***. Other studies have examined TPC involved in the more public engagement of risk around environmental, health, or other controversies, focusing on the social-rhetorical dimensions of the communication between experts and publics or area communities,

and pointing to ways to improve the communication processes, texts, and spaces involved (Katz & Miller, 1996; Nagelhout et al., 2009; Stratman et al., 1995). As Ed Nagelhout and colleagues (2009) noted, TPC scholars have increasingly argued "that decisions about risk should be the shared responsibility of all stakeholders" (p. 229). In his discussions of environmental communication efforts about sustainable development in the Great Lakes ecosystem, Craig Waddell (1995) called for a multi-directional "social constructionist model" in which "*all participants* also communicate, appeal to, and engage values, beliefs, and emotions" in making policy decisions (p. 207; see also Katz & Miller, 1996).

Jeffrey T. Grabill and W. Michele Simmons (1998) went further, critiquing the limitations of "negotiated" approaches that have responded to the technocratic limiting of public input, arguing that they idealize public participation without addressing challenges to shared decision-making, including asymmetrical power relations and a limited conception of stakeholders (p. 430). They called their alternative model a "critical rhetoric of risk communication," arguing for the public's involvement from the beginning of risk definition and assessment and thereby collapsing the distinction between risk assessment/analysis and risk communication (p. 417). Simmons (2007) extended this work in her case analyses of environmental policymaking, arguing that risk management institutions typically separate public participation from actual policy formation. Reminding us that citizens also have expertise, Simmons advocated for more fully participatory processes distinguished by shared decision-making (rather than, say, "strategic or "pseudoparticipatory" approaches that are still expert-driven) by offering flexible heuristics for assessing citizen roles and identifying "spaces and moments" for impactful contributions (p. 133).

Discussions of more participatory models of risk communication also have suggested more expansive roles for technical and professional communicators. Departing from Barbara Mirel (1994), Grabill and Simmons (1998) argued that such communicators should do more than disseminate or mediate risk assessment, but rather are "uniquely qualified" to participate in risk assessment and related communication and policymaking, through the construction of user ***knowledge*** (e.g., usability research), and through the facilitation of public involvement and action (pp. 434-435). Although technical communicators might face challenges in facilitating stakeholder input (see Youngblood, 2012), Grabill and Simmons called on technical communicators to be symbolic analysts and user/public advocates who move "between ranges and varieties of experts and nonexperts" (p. 434.). Simmons (2007) added that technical communication specialists can help citizens and citizen groups build technical capacity for information sharing and policymaking involvement, including in both institutional and extra-institutional contexts. Huiling Ding (2009) later critiqued some more participatory models and roles as overly idealistic and Western-centric, noting that they assume "that technical communicators play key roles in risk communication processes" (p. 331) and that they overlook "larger power issues such as national/regional protectionism, corporate interests, and systematic governmental censorship" (p. 332).

In addition to more social and rhetorical models of risk communication, technical and professional communicators have turned to its cultural, material, and political dimensions. Some have examined these dimensions in specific workplace contexts fraught with risk. Beverly Sauer's (2002) work on risk communication in hazardous mining environments is noteworthy for its nuanced, contextualized analysis of how miners manage the "dynamic uncertainty" of their environments and the multiple levels and types of institutional and cultural knowledges at play. In discussing ways to improve technical risk communication in such contexts, including for ***visual*** representations and embodied forms of training, Sauer resisted an easy separation between risk analysis, risk communication, and user uptake and negotiation. In another study of safety communication, in this case for Latino construction workers, Carlos Evia and Ashley Patriarca (2012) argued that additional considerations of language and other differences among stakeholders are needed to develop more responsively ***designed*** and culturally attuned forms of communication.

Other scholars have examined cultural and material dimensions of stakeholder-driven risk assessment and decision-making in ***medical/health communication*** contexts, aiming to empower patients, health consumers, and health publics. For example, Candice Welhausen (2017) examined consumers' localized, "do-it-yourself" (DIY) risk assessment through disease-tracking apps such as "Flu Near You." Lora (Arduser) Anderson (2017) similarly studied how people with diabetes re-articulate and manage information about their risk factors through, among other mechanisms, patient-produced communication and online patient networks. Kelly Pender (2018) extended this focus on patient-generated, materially enacted risk assessment by examining the various embodied and technological practices through which women enact BRCA+ risk, arguing that such risk "should be understood as something that women *do*" (p. 73). Heidi Y. Lawrence (2020) examined the material exigencies of vaccines to locate alternative discourses and deliberative spaces for responding to vaccine skepticism based on more nuanced research about how practitioners, parents, and local communities perceive and experience uncertainties as risks but also as "benefits, questions, or other preoccupations regarding the best way to retain personal health" (p. 103). In his rhetorical-cultural analysis of HIV testing rhetorics and contexts, J. Blake Scott (2003) critiqued identity-based risk communication focused on risky people rather than practices, also advocating for alternative communication that enables people to make nonnormative identifications with risk and vulnerability (p. 116) based on interdependent "needs, concerns, and contexts" (p. 232).

Some TPC scholars have further foregrounded a ***social justice*** approach to ***documentation*** and technology design and use for health-related contexts fraught with risks. In separate studies, Godwin Agboka (2013) and Lucía Durá and colleagues (2019) dimensionalized participatory approaches to creating health-related documentation to more fully account for communities' localized uses and "sociocultural, economic, linguistic, and legal needs" (Agboka, 2013, p. 44); this echoed Sauer's (1996) imploration for technical and professional communicators to more

thoroughly investigate stakeholders' local experiences and broader political, scientific, and historical dimensions of their cultural knowledges (p. 326). In other studies, Kristen R. Moore and colleagues (2018) and Maria Novotny and Les Hutchinson (2019) called for TPC specialists to help users repurpose technologies to enable practices of racial justice and women's reproductive empowerment, respectively.

TPC scholars have increasingly called for cultural-political approaches to communication design that respond to environmental risks, too. Donnie Sackey (2020) argued for employing value sensitive design based on environmental justice principles as a means of empowering wearable users. Lynda Olman and Danielle DeVasto (2020) proposed an adaptation of environmental risk visualization to better address hybrid and collective risks for the anthropocene. Aydé Enríquez-Loya and Kendall Léon (2020) offered a "cultural rhetorics approach to environmental justice" through "facilitatory writing" that similarly "engages . . . a constellated terrain of participants and actions" in response to environmental risks associated with "natural" disasters (p. 457).

In another expansion of risk communication's purview, technical and professional communicators also have turned our attention from specific cultural sites and their material and political considerations to transnational and transcultural dimensions and movements. Ding (2014) analyzed what she describes as transcultural, extra-institutional, and unauthorized forms of risk communication (e.g., personal narratives, proclamations) around the emerging SARS epidemic in China and North America; these forms, and the "guerilla" and alternative media in which they circulated, enabled professionals, citizen groups, and other members of transnational publics "to send out risk messages even when professional codes or official orders forbid such communication" (Ding, 2009, p. 344). Erin A. Clark Frost (2013) analyzed the risk communication *after* the Deepwater Horizon disaster, examining the mostly digital work by "complex transcultural networks" of various levels (from local to international) that challenge dominant narratives and understandings. As these studies demonstrate, technical and professional communication scholars have expanded the field's traditional focus of risk communication tensions between risk officials and publics to include ***intercultural communication*** among publics and stakeholders.

The progression of risk communication in technical and professional communication has paralleled broader developments both in the larger interdisciplinary area of risk communication and in technical and professional communication studies. Just as the multidisciplinary field of risk communication has shifted from the transmittal of narrow, technical analyses and assessments of risk to psychological, social, and broader cultural considerations and models, approaches to TPC about risks have expanded to better account for sociocultural (including embodied, material, and political) contexts of risk meaning-making and experience. Our field has also increasingly developed approaches to risk documentation and design that empower users' consequential participation and redress inequitable harms. Just as TPC has recognized the expanded roles and contributions of

technical communicators as authors (Slack et al., 1993), scholars of technical risk communication have expanded our considerations of technical and professional communicators as co-shaping risks and their meanings by learning from, engaging, and facilitating the empowerment of risk stakeholders.

References

Agboka, G. Y. (2013). Participatory localization: A social justice approach to navigating unenfranchised/disenfranchised cultural sites. *Technical Communication Quarterly*, *22*(1), 28-49. https://doi.org/10.1080/10572252.2013.730966

Anserson (Arduser), L. (2017). *Living chronic: Agency and expertise in the rhetoric of diabetes*. Ohio State University Press. https://doi.org/10.2307/j.ctvw1d7ss

Carson, R. (1962). *Silent spring*. Houghton Mifflin.

Covello, V., Sandman, P., & Slovic, P. (1998). *Risk communication, risk statistics, and risk comparison: A manual for plant managers*. Chemical Manufacturers Association.

Ding, H. (2009). Rhetorics of alternative media in an emerging epidemic: SARS, censorship, and extra-institutional risk communication. *Technical Communication Quarterly*, *18*(4), 327-350. https://doi.org/10.1080/10572250903149548

Ding, H. (2013). Transcultural risk communication and viral discourses: Grassroots movements to manage global risks of H1N1 flu pandemic. *Technical Communication Quarterly*, *22*(2), 126-149. https://doi.org/10.1080/10572252.2013.746628

Ding, H. (2014). *Rhetoric of global epidemics: Transcultural communication about SARS*. Southern Illinois University Press.

Dombrowski, P. M. (1991). The lessons of the Challenger disaster. *IEEE Transactions on Professional Communication*, *43*(4), 211-216. https://doi.org/10.1109/47.108666

Dura, L., Gonzales, L., & Solis, G. (2019). Creating a bilingual, localized glossary for end-of-life-decision-making in borderland communities. In *Proceedings of the 37th ACM International Conference on the Design of Communication*, Article No. 30, ACM. https://doi.org/10.1145/3328020.3353940

Enríquez-Loya, A., & Léon, K. (2020). Transdisciplinary rhetorical work in technical writing and composition: Environmental justice issues in California. *College English*, *82*(5), 449-459.

Evia, C., & Patriarca, A. (2012). Beyond compliance: Participatory translation of safety communication for Latino construction workers. *Journal of Business and Technical Communication*, *26*(3), 340-367. https://doi.org/10.1177/1050651912439697

Field-Springer, K., & Striley, K. (2014). Risk communication: Social construction perspective. In T. L. Thompson (Ed.), *Encyclopedia of health communication* (pp. 1183-1185). SAGE.

Frost, E. A. (2013). Transcultural risk communication on Dauphin Island: An analysis of ironically located responses to the Deepwater Horizon disaster. *Technical Communication Quarterly*, *22*(1), 50-66. https://doi.org/10.1080/10572252.2013.726483

Giles, T. D. (2010). Communicating the risk of scientific research. *Journal of Technical Writing and Communication*, *40*(3), 265-281. https://doi.org/10.2190/TW.40.3.c

Goodnight, G. T. (1982). The personal, technical, and public spheres of argument: A speculative inquiry into the art of public deliberation. *Journal of the American Forensics Association*, *18*, 214-227. https://doi.org/10.1080/00028533.1982.11951221

Grabill, J. T., & Simmons, W. M. (1998). Toward a critical rhetoric of risk communication: Producing citizens and the role of technical communicators. *Technical Communication Quarterly*, *7*(4), 415-441. https://doi.org/10.1080/10572259809364640

Herndl, C. G., Fennell, B. A., & Miller, C. R. (1991). Understanding failures in organizations: The accidents at Three Mile Island and the Shuttle Challenger. In C. Bazerman & J. Paradis (Eds.), *Textual dynamics of the professions: Historical and contemporary studies in writing in professional communities* (pp. 279-305). University of Wisconsin Press.

Hilyard, K. M. (2014). Risk communication. In T. L. Thompson (Ed.), *Encyclopedia of health communication* (pp. 1175-1177). SAGE.

Jensen, R. E. (2015). Rhetoric of risk. In H. Cho, T. Reimer, & K. A. McComas (Eds.), *The SAGE handbook of risk communication* (pp. 86-97). SAGE. https://doi.org/10.4135/9781483387918.n11

Katz, S. B., & Miller, C. R. (1996). The low-level radioactive waste siting controversy in North Carolina: Toward a rhetorical model of risk communication. In C. G. Herndl & S. C. Brown (Eds.), *Green culture: Environmental rhetoric in contemporary America* (pp. 111-140). University of Wisconsin Press.

Lawrence, H. Y. (2020). *Vaccine rhetorics*. Ohio State University Press.

McComas, K. A. (2006). Defining moments in risk communication research: 1996–2005. *Journal of Health Communication*, *11*(1), 75-91. https://doi.org/10.1080/10810730500461091

Mirel, B. (1994). Debating nuclear energy: Theories of risk and purposes of communication. *Technical Communication Quarterly*, *3*(1), 41-65. https://doi.org/10.1080/10572259409364557

Moore, K. R., Jones, N., Cundiff, B. S., & Heilig, L. (2018). Contested sites of health risks: Using wearable technologies to intervene in racial oppression. *Communication Design Quarterly*, *5*(4), 52-60. https://doi.org/10.1145/3188387.3188392

Mythen, G. (2004). *Ulrich Beck: A critical introduction to the risk society*. Pluto Press.

Nagelhout, E., Staggers, J., & Tillery, D. (2009). Risk communication, space, and findability in the public sphere: A case study of a physical and online information center. *Journal of Technical Writing and Communication*, *39*(3), 227-243. https://doi.org/10.2190/TW.39.3.b

Novotny, M., & Hutchinson, L. (2019). Data our bodies tell: Towards feminist critical action in fertility and period tracking applications. *Technical Communication Quarterly*, *28*(4), 332-360. https://doi.org/10.1080/10572252.2019.1607907

Olman, L., & DeVasto, D. (2020). Hybrid collectivity: Hacking environmental risk visualization for the anthropocene. *Communication Design Quarterly*, *8*(4), 15-28. https://doi.org/10.1145/3431932.3431934

Pender, K. (2018). *Being at genetic risk: Toward a rhetoric of care*. The Pennsylvania State University Press.

Plough, A., & Krimsky, S. (1987). The emergence of risk communication studies: Social and political context. *Science, Technology, & Human Values*, *12*(3/4), 4-10.

Powell, D., & Leiss, W. (1997). *Mad cows and mother's milk: The perils of poor risk communication*. McGill-Queen's University Press.

Reamer, D. (2015). "Risk = Probability × Consequences": Probability, uncertainty, and the Nuclear Regulatory Commission's evolving risk communication rhetoric. *Technical Communication Quarterly*, *24*(4), 349-373. https://doi.org/10.1080/10572252.2015.1079334

Reynolds, B., & Seeger, M. W. (2005). Crisis and emergency risk communication as an integrative model. *Journal of Health Communication*, *10*(1), 43-55. https://doi.org/10.1080/10810730590904571

Rowan, K. E. (1994). The technical and democratic approaches to risk situations: Their appeal, limitations, and rhetorical alternative. *Argumentation*, *8*, **391-409.** https://doi.org/10.1007/BF00733482

Sackey, D. J. (2020). One-size-fits-none: A heuristic for proactive value sensitive environmental design. *Technical Communication Quarterly*, *29*(1), 33-48. https://doi.org/10.1080/10572252.2019.1634767

Sauer, B. (2002). *The rhetoric of risk: Technical documentation in hazardous environments*. Routledge. https://doi.org/10.4324/9781410606815

Sauer, B. A. (1996). Communicating risk in a cross-cultural context: A cross-cultural comparison of rhetoric and social understandings in U.S. and British mine safety training programs. *Journal of Business and Technical Communication*, *10*(3), 306-329. https://doi.org/10.1177/1050651996010003002

Scott, J. B. (2003). *Risky rhetoric: AIDS and the cultural practices of HIV testing*. Southern Illinois University Press.

Simmons, W. M. (2007). *Participation and power: Civic discourse in environmental policy decisions*. SUNY Press.

Slack, J. D., Miller, D. J., & Doak, J. (1993). The technical communicator as author: Meaning, power, authority. *Journal of Business and Technical Communication*, *7*(1), 12-36. https://doi.org/10.1177/1050651993007001002

Stratman, J. F., Boykin, C., Holmes, M. C., Laufer, M. J., & Breen, M. (1995). Communication, metacommunication, and rhetorical stases in the Aspen-EPA Superfund controversy. *Journal of Business and Technical Communication*, *9*(1), 5-41. https://doi.org/10.1177/1050651995009001002

van Loon, J. (2002). *Risk and technological culture: Towards a sociology of virulence*. Routledge.

Waddell, C. (1995). Defining sustainable development: A case study in environmental communication. *Technical Communication Quarterly*, *4*(2), 201-216. https://doi.org/10.1080/10572259509364597

Walsh, L., & Walker, K. C. (2016). Perspectives on uncertainty for technical communication scholars. *Technical Communication Quarterly*, *25*(2), 71-86. https://doi.org/10.1080/10572252.2016.1150517

Welhausen, C. A. (2017). At your own risk: User-contributed flu maps, participatory surveillance, and an emergent DIY risk assessment ethic. *Communication Design Quarterly*, *5*(2). https://dl.acm.org/doi/10.1145/3131201.3131206

Winsor, D. A. (1988). Communication failures contributing to the Challenger accident: An example for technical communicators. *IEEE Transactions on Professional Communication*, *31*(3), 101-107. https://doi.org/10.1109/47.7814

Youngblood, S. A. (2012). Balancing the rhetorical tension between right to know and security in risk communication: Ambiguity and avoidance. *Journal of Business and Technical Communication*, *26*(1), 35-64. https://doi.org/10.1177/1050651911421123