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Using Syllabus as Metaphor for Investigating Communicative Risk in Contemporary Risk Communication Research: A Critical Pedagogical Perspective

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Abstract

This paper explores the potential of utilizing the syllabus as a metaphor for investigating communicative risk and its contribution to contemporary risk communication research. The normalized discourse of "experts vs. laymen" in risk communication produces an asymmetrical relationship when risk information is presented to the public. The syllabus, however, provides a place for risk communication scholars to practice essential functions such as pragmatic and constitutive to the public. The syllabus is not only a practice that navigates relations between the scientists as educators and the public audience as students but also a mediator that affords representation of communicating various visible public risks in the public sphere. The paper argues that recognizing communicative risk and its impact on conceptualizing risk perception through the metaphor of syllabus is critical to reconsider the interdependent relationship between risk and communication and the interdisciplinarity of risk communication research. The paper concludes that the syllabus could become a solution to overcoming the discursive construction of "experts vs. laymen" by providing a forum for inclusive public discussion and empowering the public to feel, reflect, and express how risk plays a role in their everyday lives.

Keywords: risk communication, communicative risk, risk perception, interdisciplinary collaboration, critical pedagogy, public engagement

1. Introduction

Risk communication as a disciplinary focus has expanded its territory, inquiring about the purpose, process, and effects of communication to optimize the public interest (Balog-Way et al., 2020; Rickard, 2021). Serving as an intellectual hub, risk communication research is also openly engaging with interdisciplinary efforts continuously to explore what constitutes the foundational expectations for risk communication scholarship, how risk communication functions in and for the public audience (audience refers to the general public(s) in relation to scientific experts during risk

communication), and why issues raised by risk communication scholars are integral to sustain socioecological health (Balog-Way et al., 2020; Beck, 2014; Cooper & Nisbet, 2016; Fischhoff, 1995; McComas, 2006; Rickard, 2021). Although risk communication research envelops normative, critical, and empirical perspectives of identification, narration, and transmission surrounding the idea of risk perception (Bodemer & Gaissmaier, 2015; Cho & Friley, 2015; Lundell et al., 2013; Siegrist & Bearth, 2021), the interdependent relationship between risk and communication concepts needs further investigations. In other words, instead of looking at risk and communication as two separate units, studying the intertwined dynamics between risk and communication can also contribute to the development of risk communication and enhance its interdisciplinary collaboration.

This paper utilizes the syllabus as a metaphor to investigate the notion of communicative risk and its potential to contribute to contemporary risk communication research. Although the use of syllabus is not a universal practice in all educational settings (Cammarota, 2011), the goal of having a syllabus to communicate learning goals can be broadly adaptable for scientific experts to communicate their expectations to the public audience when their primary job is to educate the public about scientific knowledge and thus increase public literacy.

On the one hand, the normalized discourse of "experts vs. laymen" (Slovic et al., 2004) essentially produces an asymmetrical relationship when risk information is presented to the public. The public audience, by default, becomes "the educated" when receiving the information sent by "the educators" with expertise in scientific studies. Thus, creating syllabi becomes a common practice for experts to educate the audience in risk mitigation and prevention. Consequently, the share of responsibility for both parts is structurally assumed through the communication process between the sender and the receiver. Even though this model of the communication process is responsive by design when researchers monitor the audience and adjust their communication strategies (Decker et al., 2012; Hart, 2014; Lu et al., 2016; Roh et al., 2018; Salmon et al., 2014), the focus of conversational dynamics is subordinated by these strategic communicative actions: educator-centered or the

educated-centered.

This communication framework problematizes the interdependence between the sender and the receiver by lacking the acknowledgment that each part serves as an equally important resource for one another. Without such an acknowledgment, the emergent controversy surrounding trust and credibility has increased and even dominated the public discourse (McComas & Trumbo, 2001; Siegrist, 2021; Siegrist & Bearth, 2021; Siegrist & Cvetkovich, 2000; Slovic, 1993; Tuler & Kasperson, 2014), while the possibility of creating a common ground for communicating shared values of risks between diverse sectors including experts and the public audience is restrained (Jardine et al., 2013).

On the other hand, the syllabus metaphor provides a place for risk communication scholars to practice essential functions such as pragmatic and constitutive (Carey & Adam, 2008; Rickard, 2021) to the public. In other words, the syllabus is not only a practice (the action of communicating ideas) that navigates relations between the scientists as educators and the public audience as students but also a mediator (an interactive interface that contains communicative potentials) that affords representation of communicating various visible public risks in the public sphere. Thus, this syllabus is an outcome of co-authorship and could become a solution to overcoming the discursive construction of "experts vs. laymen" by providing a forum for inclusive public discussion. This way, the syllabus is a form, if not an example, of risk communication.

To examine the conceptual and functional significance of syllabus in risk communication, I regard communicative risk as a notion that exemplifies the socio-cultural inclusion and exclusion in public engagement in terms of the discussion of risk perception. Thus, I argue that recognizing communicative risk and its impact on conceptualizing risk perception through the metaphor of syllabus is critical to reconsider the interdependent relationship between risk and communication and the interdisciplinarity of risk communication research. The purpose of this paper is not to criticize the limitation of contemporary risk communication progress but to offer and invite innovative perspectives to help overcome challenges such as the representation of diverse audience values and empowerment for public engagement in risk

communication research (Kasperson, 2014; Lejano et al., 2020).

2. Risk Perception as Grounding Practice

Since the emergence of risk communication as a field, risk perception as a key component has *haunted* the praxis of risk communication scholarship because the ways we define risk directly influence how we describe, measure, and prevent it. The reconceptualization of risk and risk perception is an eternal return that questions how we can reflexively approach perceptive processes and navigate the complexity of human communication. In response to strategies of locating the entrance to explore human-centered risk perception, Bostrom and Lofstedt (2003) described a grounding practice of examining risk perception:

Knowing a little about risk and risk perception is an obvious prerequisite to researching and practicing risk communication, but so is knowing something about how people learn, how they make decisions, what motivates them to or prevents them from acting, and how they negotiate conflicts with others. (p. 245)

Although there are multiple ways of exploring risk perception and summarizing the collective perception of risk, the ownership of risk perception is essentially situated at an individual level. Risk perception is always open to pluralistic interpretations associated with personal experience. Thus, conceptualizing the relationship between risk and perception is key to deciphering the functionality of risk perception.

2.1 Risk as Embodied Subjectivity

Risk perception engenders the formation and development of emotional reactions. The risk-as-feeling hypothesis demonstrated by Loewenstein et al. (2001) reorients the rationale of how we approach the study of risk perception in which both risk and feelings are causes and effects for each other. For example, Loewenstein et al. (2001) introduced a quotation by Michael Specter (1996) to present this generative dynamic in the risk-as-feeling hypothesis: "The worst disease here is not radiation sickness. The truth is that the fear of Chernobyl has done much more damage than Chernobyl itself" (Specter, 1996, p. 6).

Recognizing the role of emotion in theorizing risk as an embodied experience, Slovic et al.

(2004) suggest a multidimensional understanding of risk. According to Slovic et al. (2004), risk as feelings "refers to our fast, instinctive, and intuitive reactions to danger" and is often followed by rationality to make analytical decisions to act upon these feelings (p. 311). The definition of rationality addressed by Slovic et al. (2004) is further illustrated by the "two modes of thinking," namely, experiential and analytical systems. Slovic et al. (2004) describe the experiential system as a holistic affective experience with immediate actions, while the analytical system is responsible for the cognitive process of making logical connections (p. 313).

Meanwhile, these two modes of thinking systems that constitute dimensions of risk perception are often entangled in decision making. For example, Slovic et al. (2004) use the term "affect heuristic" to describe one possible outcome of this entanglement: "the feelings that become salient in a judgment or decision-making process depend on characteristics of the individual and the task as well as the interaction between them" (p. 314). Thus, risk as an embodied experience that effectively experiences the living environment acts as a result of our feelings and animates rationalization that resonates a subjective notion of risk, in which various dimensions of subjectivities enabled by human experience call for an operationalized agreement of risk perception.

Risk as embodied subjectivity corresponds to our feelings in relation to the environment where we live. These environmental constitutions involve a wide range of contextual elements that provide space for our feelings (Lupton & Tulloch, 2002; Slovic, 2010; Slovic et al., 2004; Tversky & Kahneman, 1974). Since feelings are grounded within human experience (Loewenstein et al., 2001), identifying how feelings communicate through various subjective channels is also important to enrich our understanding of risk perception.

2.2 Risk as Mediator

If we regard risk as an embodied value that reveals our feelings, risk is communicative in our everyday lives when we share these feelings with other people. This pragmatic function of risk communication, according to Rickard (2021), is associated with the audience's risk-seeking and processing behaviors (p. 470). Among

various modeling hypotheses that illustrate the mechanisms of attitudinal and behavioral change, knowing what the risk is and how to do deal with it motivates the transformation of people's behaviors actively to seek relevant information (Dunwoody & Griffin, 2015; Hale, Householder, & Greene, 2002; Todorov et al., 2002). When communicating the assessment of risk and potential responses to these risks, the discourse of risk generated by the audience becomes thematically productive in creating opportunities for people to exchange their feelings and ideas about risk.

The role of risk as a mediator in people's daily conversations is a salient variable of how we learn about individuals, groups, and institutions. Both sociopolitical and biological factors are important components in understanding the mediative function of risk (Finucane et al., 2000; Flynn et al., 1994). For example, characteristics such as race and gender are important indicators for different risk perceptions, and some combined identities like a white male also contribute to these differences (Olofsson & Rashid, 2011). While a constitutive approach to examine the identity as socially constructed points out that the "societal inequality effect" is responsible for identity-based risk perception (Bodemer & Gaissmaier, 2015; Slovic, 1987; Wilson et al., 2019), a mediative perspective allows people to analyze the process of such social constructions that disseminate power differentials to influence the formation and transformation of social identities.

Recognizing the mediative role of risk helps scholars assess their reflexivity during risk communication research. Questions such as what constitutes social inequality or privilege and how to use these terms to justify the social dynamics among various factors are central to putting forward educational efforts in communicating and learning about the risk to and from the audience (Slovic, 1987). Thus, risk perception entails communicative interactions that persistently influence and shape risk-centered thinking at individual and collective levels. Linking the subjective embodiment and mediative functionality of risk into consideration of risk perception as a grounding practice that empowers individuals to feel, reflect, and express how risk plays a role in their daily lives, risk encompasses in-depth perspectives that represent these communicative dynamics within a rather diverse and inclusive socioecological context.

2.3 Risk as Perspective

The persuasive goal of risk communication is to convince the public audience to moderate their attitudes and behaviors by accepting the risk perception provided by risk experts (Slovic, 1987). Introducing such a scientific version of risk perception, as Slovic (1987) noted, is placing risks in perspective. Since the process of communicating these perspectives involves conversations including educational efforts made by risk experts, mediated by risk perception, the definition of risk itself becomes a form of perspective. In other words, how we perceive risks aligns with how much we care about risks in our lives.

On the one hand, risk as perspective reflects the socio-cultural background that influences the experience of risk perception. For example, political ideology is identified as a factor that motivates attitudinal and behavioral changes in risk communication (Beck et al., 2009; Freudenburg, 1993; Hilgartner, 2007; Jost & Amodio, 2012; Kahan et al., 2011). Thus, recognizing the motivational patterns behind risk perception is instrumental in composing effective perspectives to persuade the public audience.

On the other hand, since the risk is grounded in the embodiment of subjectivity, the connotation of risk as perspective is neutrally contingent by nature rather than static. This observation of risk perception could problematize the traditional Western notion of risk as a negative term (Lupton & Tulloch, 2002). Lupton & Tulloch (2002) describes the Western notion of risk as an outcome of moralization:

The emphasis in contemporary Western societies on the avoidance of risk is strongly associated with the ideal of the 'civilized' body, an increasing desire to take control over one's life, to rationalize and regulate the self and the body, to avoid the vicissitudes of fate. (p. 113)

These moral values are often indexed into the perspective provided by risk experts and introduced to the audience in the process of public education, in which risk becomes a normalized discourse that distinguishes the social ideal from the uncivilized body. Understanding the nature of risk as a perspective could help ease tremendous frustrations experienced by many risk experts when their persuasion is not as successful as

expected. These undesired results, such as low social trust, may negatively influence the communicative process between individuals, groups, and institutions (Rayner & Cantor, 1987; Siegrist & Bearth, 2021; Wong & Yang, 2021). Since the purpose of the risk communication scholars is to take the social responsibility and educate the public audience in identifying, mitigating, and preventing risks, conceptualizing the communicative risk that could jeopardize this educational process is urgent and vital to overcoming challenges faced by contemporary risk communication.

3. Syllabus as Metaphor in Risk Communication Research

Regarding risk perception as a grounding practice to some extent may challenge views on what risk is and encourage them to rethink the relationship between risk communication scholars and the public audience. This relationship is traditionally known as expert vs. laymen and has been primarily effective for the public to accept the scientific results until the prevalence of multiple public communication channels such as newspapers and social media (Engdahl & Lidskog, 2014; Slovic, 1987; Tversky & Kahneman, 1974).

While these mass communication tools undoubtedly boost the risk communication in covering the wide range of the public audience and having in-depth reports available to the public (Fjaeran & Aven, 2021; Siegrist, 2021; McComas & Trumbo, 2001; Siegrist & Cvetkovich, 2000; Slovic, 1993), the advent of mass media and social networking technologies also intensifies audience fragmentation, corporate commodification, and other distracting side effects that decentralize public information as a shared pool of communicating risks and result in high social distrust of the public audience (Annoni et al., 2021; Atiyeh & Emsieh, 2021; McComas & Trumbo, 2001; Tuler & Kasperson, 2014). Instead, risk increases in terms of effective communication through these communicative interactions when risk experts are trying to send relevant and important information to the public.

This side-effect amplified by social communication channels indicates the characteristic that risk as a mediator facilitates social conversations. However, solutions to combating these obstacles of communicating risk are urgent and essential for risk experts

when their research and insights could mitigate infections and prevent the potential outbreak of massive diseases. In the spirit of helping risk communication research to overcome this disadvantageous circumstance, I suggest using the metaphor of syllabus as a place for risk communication to reconsider the relationship between risk experts and the public audience in the communicative process. I use communicative risk as a term to describe undesirable factors identified in this process and utilize critical pedagogical perspective to offer some directions for risk communication scholars to explore interdisciplinary collaboration with critical pedagogical research when seeking solutions to communicate risk with the public audience effectively.

3.1 Roles and Goals

While the role of risk experts as public educators who inform and persuade the public audience to learn about the risk information and act accordingly is central to the process of risk communication, how to navigate this educational relationship is important for educators to manage their roles in the social classroom. Compared to the traditional representation of this relationship that highlights the difference between experts and laymen, a reframing of the mutual learning process is necessary to adjust social expectations between the roles of being educators and learners. In other words, educators can also be educated by learners as long as they open such opportunities and encourage students to critique the teaching structure. The critical aspect of the critical pedagogy field empowers class members, including both educators and learners, to identify and challenge the oppression developed by the power dynamic, especially during the learning process (Fornaciari & Lund Dean, 2014; Grabill & Simmons, 1998; Haas, 2012; Rodriguez & Huemmer, 2019). Thus, the establishment of risk experts as authoritative figures in the name of science is a crucial contribution to the social expectation of this educational experience.

In other words, once the goal of the risk experts is to be knowledgeable and inform the public audience through this position, the social expectation along with these messages is also conveyed through the communicative process. For example, when risk experts educate the public about what risk is and how to prevent it, the social expectation from the public is more likely to address these risk experts as

knowledgeable, responsible, and reliable. The high degree of responsibility expected from the public audience also convinces the experts that their trust from the public audience is carried out by their jobs, words, and efforts. This communication model is similar to the banking teaching model when lecturing is the dominant section.

However, maintaining such social expectations for educators is like a mission impossible since they can't afford to make mistakes. If experts are wrong, the social expectation stemming from experts' knowledgeability and reliability can also collapse at the same time because the trust is discursively built upon scientific languages and roles that supposedly educate the audience. The culture nurtured through this scientific communication to the public does not allow scientists to fail at the role of educators and to be wrong. However, isn't it a universal truth that everyone, including experts, can make mistakes? By informing and persuading the public audience to act responsively and take less risky actions, risk experts promise a syllabus to the public learners that it will be at your own risk if you don't follow these rules. This syllabus leaves the public audience with no choice but to be compliant or not regarding how they follow the rules and pressures experts always to be correct to maintain the trust in this educational relationship.

A critical pedagogical approach to interpreting this educational relationship would be for educators to set this educational experience as mutual on the syllabus. First, both educators and learners are necessary to fulfill the purpose of having this educational relationship (McInerney et al., 2011; Sinkinson, 2020). Second, establishing an environment that allows educators also to be learners and vice versa helps each part to appreciate the others' work without putting too much emphasis on the premature concept of trust (McInerney et al., 2011; Rodriguez & Huemmer, 2019; Sen et al., 2017; Sinkinson, 2020). In other words, trust is developed through the practice of appreciation and opens to distrust sentiments that constitute the dynamic of trust development. Thus, creating a mutual learning experience and stressing the importance of having this collaborative relationship on the syllabus is critical to sharing the responsibility of safeguarding human health and the environment between educators and learners

(Haines & Frumkin, 2021).

3.2 Diversity Statement

Representation as a factor of communicative risk could primarily influence the learners' motivation during their learning (Flynn & Marotta, 2021). In risk communication research, identities such as race, gender, and partisanship are also key contributors to the audience's attitudinal and behavioral change Dunwoody & Griffin, 2015; Hale, Householder, & Greene 2002; Siegrist & Bearth, 2021; Todorov et al., 2002). While the mass communication environment promotes various levels of audience fragmentation, creating a diversity statement that addresses the awareness and commitment of fostering an inclusive learning space envelops the potential to bring the fragmented public to the same page (Flynn & Marotta, 2021). A diversity statement highlights the relevance of individuals' experienced risk and welcomes them to share and learn about different perspectives of riskiness.

Additionally, having a diversity statement also enables risk communication scholars to practice reflexivity to examine their course materials and teaching philosophy used to educate the public audience with an extra check on sociocultural exclusion. If the goal of risk communication scholarship is to serve the public interest in sustaining socioecological health, how to construct a picture of the public and how to represent the public interest are prerequisites for them before undertaking the duties of being public educators. Although it is impossible to name all the identities as we can't name all the risks, having an open attitude to accept different identities and perspectives is an essential component for public educators to signal their acceptance of diversity as a goal (Ash & Wiggan, 2018; Cammarota, 2011; Giannotti, 2019). In other words, before asking the public audience to accept the risk knowledge provided by risk communication research, risk experts as educators need to first acknowledge and admit the heterogeneous nature of the public as learners in this educational conversation.

3.3 Evaluation and Reflection

Following the diversity statement of the syllabus in public education between experts and the public audience, the evaluation of the learning outcomes should also credit a pluralistic view of perceiving progress while calling for a consensus of sharing public responsibility in risk

communication. This shared responsibility focuses not only on direct responses from the learners of how much they learned but also on communicative potentials that reflect how likely they will recycle the learned risk information to engage other public conversations and push risk communication research to advance.

Instead of pursuing a proper attitudinal or behavioral outcome, the core expectation of critical pedagogy asks how the teaching can effectively encourage learners to develop critical thinking skills (Makkawy & Moreman, 2019; Serrano et al., 2018). Thus, the purpose of evaluation outlined in the syllabus is not much about how many risks the public audience can identify but more about how competent they are to identify risks and come up with solutions to deal with them.

Since the learning experience is a mutual relationship between educators and learners, the evaluation is also an opportunity for educators to reflect and assess their teaching. A critical pedagogical approach actively empowers learners to critique power dynamics that negatively influence their learning experience and encourages educators to flip the classroom and make it learner-centered (Abeysekera & Dawson, 2015; Lumadi, 2019; Shilon & Eizenberg, 2020; Zembylas, 2021).

Thus, collecting feedback and listening to the learner's perspective on effective learning provides materials for educators to reflect upon how much information is passed through learners' cognitive process, how well they know about learners' development through the educational period, and how their teaching strategies influence the learning dynamics within the communicative interactions. Evaluating the competencies developed by the public audience during the public educational engagement is important for risk experts as educators to update their goals in the syllabus and incorporate critical pedagogical approaches to building a team-based learning environment where educators and learners as teammates communicate risks.

4. Conclusion: Risk Communication for Change

Revisiting risk communication through the metaphor of syllabus and utilizing a critical pedagogical framework to reimagine the relationship between risk experts and the public audience could offer innovative perspectives to overcome the challenges such as low social trust in contemporary risk communication research. Instead of offering a presumed concept of trust that is based merely on experts' credentials, risk experts could build their social trust through communicative interactions with the public audience through the metaphor of syllabus. The key is to identify the communicative risk embodied in the process of communication. The conceptualization of communicative risk helps improve strategic communication and allows communication and risk scholars to discursively transform the dynamics from experts vs. laymen to a team-based educational framework that involves a mutual learning experience between both learners and educators.

Introducing the function of the syllabus as a communicative process also offers interdisciplinary collaborations between risk communication and critical pedagogical scholarship to investigate communicative risks in messaging the evaluating processes. For example, the critical pedagogical approach requires an ongoing examination of the diversity of learners and encourages educators to offer accommodations for learners to express their diverse opinions (Flynn & Marotta, 2021; Serrano et al., 2018; Shilon & Eizenberg, 2020). Thus, offering opportunities for public engagement with risk experts could optimize the communicative interactions between learners and educators to develop effectively a diverse syllabus per specific public audience groups.

For future research, using the syllabus as an analytical framework to investigate the communicative dynamics between risk experts and the public audience through specific case studies is essential to assess how much influence a syllabus has when influencing the relational dynamics such as psychological distance in risk communication. On the other hand, creating risk-centered syllabi and inviting the public audience to join the team-based learning experience also requires willing scholarly efforts to re-evaluate the role as risk experts and to develop their reflexivity in maintaining a reciprocal relationship with the public audience based on shared learning goals. These educational efforts that risk scholars made could essentially incorporate risk education into risk communication scholarship.

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