

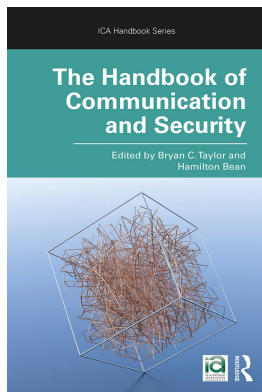
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## **The Handbook of Communication and Security**

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### **Ecological Communication and Security**

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# 3

## Ecological Communication and Security

William J. Kinsella

The phenomena considered in this chapter are simultaneously material and discursive, concrete and abstract, recalcitrant and malleable, and deeply intertwined. “Ecology” and “environment” are related but not synonymous terms, each with its own discursive tradition and range of interpretations. Ecology’s etymological roots as *oikos*, or “house,” shared with “economics,” suggest multiple connections to notions of security. Environment’s connotations of “surrounding” or “encircling” (Luke, 1995) evoke images of boundary production, maintenance, and policing—thus also resonating with concepts of security.<sup>1</sup> Traditional security theories in the field of international relations have often excluded issues of ecology and environment, but a post-Cold War debate over “wide versus narrow” understandings has highlighted those issues as potential security objects (Buzan, Wæver, & deWilde, 1998; Dalby, 2002; Floyd & Matthew, 2013).

Increasingly, discussions of *ecology* and *environment* also involve questions of *energy* production, distribution, and consumption. As a range of material phenomena and as a discursive theme, energy links ecological and environmental concerns to questions of economics and politics. “Energy security” is generally understood as the ability of individuals and communities to reliably access affordable and sustainable energy sources. Related tensions between the interests of energy producers, consumers, regulators, and many other stakeholder groups have made energy security a prominent trope in political discourse, often depicted in tension with ecological or environmental security (Bridge, 2015; Simpson, 2013; Sovacool, 2011). In some quarters, energy security has acquired the aggressive formulation of “energy dominance,” an image that potentially fuels new conflicts as one party’s quest for energy threatens another’s existential security. All of these relationships are compounded further by the “meta-problem” (Weingart, Engels, & Pansegrau, 2000) of global climate change (CNA, 2014; Endres et al., 2016; Parthemore & Nolan, 2017; Trombetta, 2011).

Ecology, environment, energy, and climate are in many ways obdurate material phenomena. As such, they often challenge notions of mastery and control implicit in both representational and constitutive models of communication (Rogers, 1998). At the same time—and partly due to the challenges they pose to stability and control—these phenomena are subject to discursive “securitization” and “desecuritization.” That is, they are articulated as existential threats requiring extraordinary responses (or not), with implications for how they are understood and addressed (Balzacq, 2011, 2015; Buzan et al., 1998; Floyd, 2010; Trombetta, 2011; Wæver, 1995).

Meanwhile, notions of security itself vary, ranging from a traditional focus on state actors and threats or uses of military force to broader concepts of economic, environmental, and human security (Dalby, 2009, 2013). Ecology, environment, energy, climate, and security are thus not only material features of the world; they are also contingent, evolving, and contested products of symbolic action. Indeed, including a chapter on this topic in a *Handbook of Communication and Security* is a potential securitization move, indicating a need for continued reflection throughout the following discussion.

This chapter explores these material and discursive entanglements using *communication*, *articulation*, and *securitization* as focal concepts. *Communication* provides boundaries for the chapter's scope and content. Without limiting discussion to approaches from the academic field of communication, I focus on issues and scholarship that resonate with this discipline's core concerns. *Articulation* provides a more specific approach for examining how communication *links* understandings of ecology, environment, energy, climate, and security in consequential ways, across levels of analysis and social, political, cultural, and practical contexts. *Securitization* provides a bridge to the field of security studies, highlighted here because of its resonance with scholarship in communication and rhetoric.<sup>2</sup>

The chapter's next section previews these concepts, which ground its critical/analytical framework. I then review five broad themes linking issues of ecology, environment, energy, climate, and security, including:

- Rhetoric, public argument, and narrative
- Ecological discourses and ecological politics
- Risk, precaution, regulation, uncertainty, and trust
- Ecological security and conflict across sectors and levels of analysis
- The scope and ethics of security inclusion: environmental, climate, interspecies, and intergenerational justice.

Following that thematic review, the chapter uses the topic of *nuclear energy* to illustrate and elaborate some of the concepts addressed previously. Here nuclear energy provides a brief "case study" in a broad sense (cf. Balzacq, 2011, Chapter 2). That is, rather than focusing closely on particular aspects or issues, I emphasize nuclear entanglements heuristically across multiple ecological, environmental, energy, climate, and security contexts.

## COMMUNICATION, ARTICULATION, SECURITY, AND SECURITIZATION

### Communication

Countless projects have theorized communication processes across a range of scholarly traditions (see Craig, 1999; Littlejohn & Foss, 2009; for the environmental communication subfield see Milstein, 2009; Pezzullo & Cox, 2018). Across that theoretical landscape, one recurrent theme contrasts *representational* views of communication, which emphasize accurate descriptions of an independent world, with *constitutive* views, which stress the role of communication in actively making worlds (see Deetz, 1973; Stewart, 1972, 1995). Broadly, representational views align with traditional, realist approaches to security ontologies and epistemologies in the field of international relations. There, state actors are the focal subjects, recognizing and responding to objective (or objectivated) external threats. Prediction, control, and stability are key goals within the traditional security perspective and representational perspectives more broadly.

Constitutive views of communication, alternatively, are more resonant with constructivist and critical security studies approaches (cf. Booth, 2005; Krause & Williams, 1997) and with securitization theory (cf. Buzan et al., 1998; Wæver, 1995). Those perspectives recognize a wider range of subjects and actors and more fully engage the role of discourse in producing security phenomena. Here, the relatively humanistic goals of understanding, and often critique, take precedence over instrumental concerns related to prediction and control.

In matters of ecology, environment, energy, and climate, accurate representations of recalcitrant material facts are surely essential. In this regard, Buzan et al. (1998) have noted a special role for science in the domain of environmental security, one of five security sectors they identified. Continuing populist and anti-intellectual efforts to undermine climate change science—and other science potentially relevant to matters of security—demonstrate the problems that can ensue when we evade objective facticity (Ceccarelli, 2011; McCright & Dunlap, 2010; Oreskes & Conway, 2010). Latour (2004) and others have argued that such regressive efforts have, ironically, embraced the relativist positions ascribed previously by critics to social constructionist, constitutive, and poststructuralist understandings of discourse.

However, constitutive views of language can still illuminate ecology, environment, energy, and climate issues productively. For example, many scientists now argue that it is accurate and useful (ontologically, epistemologically, and pragmatically) to identify a new geological epoch, designated *the Anthropocene*, distinguished by the pervasive effects of human activity (Crutzen, 2002; Steffen, Crutzen, & McNeill, 2007).<sup>3</sup> Evidence supporting the utility of this terminological move includes measured levels of atmospheric carbon dioxide as well as plastic materials, bones of domesticated animals, and radioactive signatures from nuclear weapons testing found uniquely in recent rock strata. This material documentation of human impacts is a representational communication act, but also a constitutive one. Naming the Anthropocene epoch has both scientific and ethical value, highlighting the degree of human influence and prompting a new awareness of human responsibility. Some advocates argue explicitly for the terminology's potential to influence policy. This example illustrates a broader constitutive principle described by Milstein (2011) as “the power of pointing and naming.” The very act of naming phenomena such as “the greenhouse effect,” “global warming,” and “climate change” constructs them as objects of attention and potential action.

## Articulation

The concept of articulation provides one way to approach these dualities of materiality and discourse, and of representational and constitutive communication. Articulation theory (Angus, 1992; DeLuca, 1999a; Grossberg, 1987) invokes its own double metaphor, viewing social realities as both spoken and constructed (Grossberg, 1987), or “spoken forth” and actively “linked” (DeLuca, 1999a, p. 335). This perspective views communication as a constitutive act that assembles elements including statements, symbols, materialities, speakers, and audiences in particular and contingent ways.

From this perspective, matters of ecology, environment, energy, and climate are not given, but actively (and often strategically) articulated. As one example, I have examined how two divergent articulations characterize discourses of commercial nuclear power (Kinsella, 2015). In one camp, advocates of nuclear power construct a narrative of its necessity and inevitability, invoking security-relevant themes such as the threat of climate change (and the attendant benefits of low-carbon energy sources) and the presumed need for a reliable and ever-expanding electricity supply. Meanwhile, opponents of nuclear power point to other security-relevant threats such as its potential for generating catastrophic radiation releases, nuclear weapons proliferation risks,

and the hazards to public health and the environment posed by high-level radioactive wastes that remain dangerous for millennia. An extension of this analysis might look further at how, by whom, and with what effects these conceptualizations of threats and solutions are actively securitized; that is, converted into objects demanding extraordinary modes of response.

## SECURITY AND SECURITIZATION

Securitization theorists have also invoked the concept of articulation, albeit with relatively little explicit elaboration, to describe how phenomena, perhaps initially inchoate or not viewed as security-relevant, are converted into objects of extraordinary concern. Briefly, early concepts of securitization, associated with the “Copenhagen School” perspective (e.g., Buzan et al., 1998; Wæver, 1995), incorporated notions of performativity and constitutive agency drawn from speech act theory (e.g., Austin, 1962; Searle, 1969). Here, Balzacq (2015) distinguishes between a “philosophical” strand of Copenhagen securitization theory, which emphasizes the agency of speakers and their statements, and a “sociological” strand that (in Balzacq’s view) more fully recognizes dialogic interactions of statements with audiences and contexts. He extends that analysis to identify three key principles: (1) the active role of audiences; (2) interactions of statements with contexts; and (3) a post-Foucauldian notion of *dispositif*, the apparatus of speaking positions, persuasive tools, and other elements available to securitization actors.

These ideas resonate closely with scholarship in environmental communication and rhetoric. For example, Balzacq (2015) notes the prevalence in securitization discourses of arguments based on urgency, consequentiality, timeliness, irreparability, and responsibility. These are essentially the same tropes identified by J. Robert Cox (1982) in an essay widely regarded as foundational in the field of environmental rhetoric.<sup>4</sup> When the environmental communication research community established its own journal twenty-five years later, its editors chose another, related essay by Cox (2007) as the lead article in its inaugural issue. That essay’s core argument, addressing questions of crisis and ethical duty, also maps readily onto key tropes in securitization theory. Similarly influential scholarship by Killingsworth and Palmer (1996) on “apocalyptic narrative” in canonical environmental texts identifies another, related theme also highlighted by securitization theorists. Extending well beyond these examples, securitization theory and environmental communication appear to be coeval fields with strong commonalities. However, there has been little direct interaction between these fields to date, and opportunities exist to develop such connections further.

A key question in security theory, directly relevant to matters of ecology, environment, energy, and climate, involves the benefits and hazards for implicated stakeholders that arise when issues are securitized (Aradau, 2004; Buzan et al., 1998; Dalby, 2009; Deudney, 1990; Trombetta, 2011). Floyd (2007, 2010, 2015) adopts a normative, “consequentialist” approach to this question, linking it to another discursive activity, that of *politicization*. Here politicization is not understood in the colloquial, typically negative, sense, but as the articulation of topics as matters of broad public engagement. Floyd argues that securitization can often depoliticize issues, removing them from public debate and assigning them to an authoritarian and/or technocratic domain managed by security experts, military and intelligence professionals, and government authorities. Understood as matters of exceptional urgency and consequentiality, securitized issues can thus become the foci of extreme measures not subject to open debate or external intervention. Thus, the potential benefits of securitizing environmental issues, such as amplifying attention and (literally) securing resources and expertise, may be offset by new constraints on transparency and democratic deliberation legitimated through the act of securitization (Aradau, 2004; Buzan et al., 1998).

This perspective echoes the example, *par excellence*, provided by narrative theorist Walter Fisher (1989). Fisher examines how the risk of global nuclear war, a fundamentally moral concern and perhaps the most public of all issues due to the scope and severity of its threat (including its ecological threat), was reduced to a matter to be managed by technocratic and military specialists. Similarly, Goodnight (1982) differentiates “personal,” “public,” and “technical” spheres in public discourse, arguing that issues benefiting from democratic deliberation can be rhetorically shifted from the public to the technical domain. Securitization can be one pathway for such a depoliticizing shift. The continuing environmental consequences of Cold War nuclear weapons production exemplify how an endeavor securitized from its outset involved a containment of public discourse, first through secrecy and later through rhetorics of technical and governmental authority, with problematic outcomes (Kinsella, 2001; Taylor, Kinsella, Depoe, & Metzler, 2007).

Securitization does not require explicit use of the word “security,” or overt framing in security-related terms. Instead, Buzan et al. (1998, p. 33) suggest that the “grammar of security” involves “a plot that includes existential threat, a point of no return, and a possible way out,” articulated through the “particular dialects” of military, environmental, economic, societal, or political security sectors. This grammar constructs a state of exceptionalism with effects that can vary from elevated attention and commitment to action, to anti-democratic and authoritarian forms of control (cf. Aradau, 2004). However, not all securitization moves, whether explicit or implicit, are successful; accordingly, case-by-case analyses are prominent in securitization studies (Balzacq, 2011). Here again, parallels are evident with environmental communication, where case studies using rhetorical, ethnographic, critical, and post-positivist methods also figure prominently.

### ANALYTICAL/CRITICAL INTERSECTIONS

I now consider some significant security-relevant themes articulated in—and articulating—discourses of ecology, environment, energy, and climate. The five broad categories offered here overlap substantially, are selective rather than comprehensive, and provide only one view of the ecology-environment-energy-climate-security terrain. In particular, this review follows a convention established by Taylor, Bean, O’Gorman, and Rice (2017) by focusing on materials that resonate with the field of communication studies, as distinguished from media studies. That distinction is clearly imperfect, but it helps to manage a broad and complex body of scholarship and to integrate the selected materials more closely.

Tensions between securitization and politicization, and their practical and ethical consequences, are implicit and sometimes explicit throughout the following review. Here securitization/desecuritization is not understood as a binary, either/or outcome, but as an ongoing process implicating rhetors, audiences, situations, and contexts. Securitization and desecuritization efforts may be successful to varying degrees for various audiences, with varying effects, and with varying degrees of closure and longevity (Balzacq, 2011; Buzan et al., 1998). Further, as considered below, alternatives exist to the securitization/desecuritization analytical frame.

#### Rhetoric, Public Argument, and Narrative

As noted above, concepts of rhetoric, public argument, and narrative have informed environmental communication scholarship since its emergence as a recognizable field. The “sociological” strand of securitization theory identified by Balzacq (2015) might be described, as readily, as

rhetorical in its focus, providing a conceptual link between these fields. If rhetorical theory and practice are concerned with public discourse addressing—or constitutive of—a community’s shared concerns (Hauser, 1987), then ecology, environment, energy, and climate provide some of the most compelling and inclusive common exigencies. To securitize these matters is to simultaneously *constitute the communities for which they pose a security threat*; thus, questions concerning the scale and scope of inclusion for affected stakeholders are essential in this regard (cf. Buzan et al., 1998). For example, as ecological threats increasingly transcend national boundaries and systems of regulation, Shelton (2009, p. 86) argues that “[t]he emergence of environmental protection as a common interest of humanity has altered the traditional role of state sovereignty,” broadening notions of agency and authority in security rhetoric.

Similarly, the critical rhetorical vocabulary of *figures, tropes, genres, and forms* of argument can help illuminate how (and for whom) issues of ecology, environment, energy, and climate become securitized or desecuritized. For example, apocalyptic tropes associated with Cold War security conditions (cf. Derrida, 1984) appeared concurrently in narratives of pollution (e.g., Carson, 1962), population (e.g., Ehrlich, 1968), resource depletion (e.g., Meadows, Meadows, Randers, & Behrens, 1972), and global warming (e.g., Schneider, 1989). At a minimum, these tropes acted metonymically to associate those issues with notions of security, potentially securitizing them while also broadening the scope of security as a discursive field. However, Killingsworth and Palmer (1996) argue that some of these apocalyptic narratives were more rhetorically successful than others. Rachel Carson’s *Silent Spring*, for example, has been lauded as a watershed statement, while Stephen Schneider’s *Global Warming* may have raised public awareness but had little immediate impact on policy or practices. Killingsworth and Palmer attribute these divergent outcomes to differences in authorial styles and strategies, audience responses, and contexts of reception. Their analysis exemplifies how rhetorical insights might contribute fine-grained analyses to “sociological” approaches to securitization in ecological contexts and beyond.

More recently, Schneider, Schwarze, Bsumek, and Peebles (2016) have expanded the genre of apocalyptic rhetoric, typically associated with environmental advocacy, to identify a mirror-image “industrial apocalyptic” narrative articulated by the U.S. fossil fuel industry. In that narrative, environmental regulation and efforts to promote alternative energy sources have threatened the security of the industry, regional and local communities, families, individuals, and thus, the nation. The narrative (e.g., assertions regarding an alleged “war on coal”) has achieved considerable success by linking the neoliberal economic interests of corporate actors with vernacular understandings of personal and community security, and with patriotic and nationalistic themes.

Another potential critical resource is the concept of rhetorical “boundary work,” first used to examine how demarcations are constructed between scientific and non-scientific discourses, and between specific scientific fields (Lessl, 1988; Taylor, 1991; see Gieryn, 1983 for an earlier, sociological approach). The notion of boundaries is fundamental in many security discourses, evident in familiar vocabulary such as “border security,” “containment,” “interior ministry,” or “homeland security.” Boundaries articulated through such language serve to *environ*—that is, surround or delimit—territories, populations, resources, and administrative fields, while simultaneously producing them (Foucault, 1997, 2007; Luke, 1995). Such boundary work can be a key element in ecological, environmental, energy, and climate securitization processes.

### Ecological Discourses and Ecological Politics

Critical discourse studies approaches, sharing some features with rhetorical analysis but historically and methodologically distinct, provide another link between security studies and ecology,

environment, energy, and climate communication. Balzacq (2011) identified critical discourse analysis as one of four methodological strands in securitization studies (along with ethnography, process tracing, and content analysis), while recognizing the diversity of approaches within that broad category.

Adapting notions of governmentality originated by Foucault (1991), Luke (1995, 1997) and Agrawal (2005) have used concepts of “environmentality” to describe processes of enviroing articulated through discourses of neoliberalism, globalization, and sustainability. One example considered by Luke (1995, p. 77) is a “green panopticon” deployed by the Worldwatch Institute, an influential nongovernmental organization focused on global environmental sustainability. Luke (1997, pp. 79ff) argues that the institute’s discourses and practices reduce sustainability to a matter of instrumental “resource managerialism,” rather than questioning problematic fundamental logics of environmental governance. Examining forest management practices in India using discourse analysis and ethnography, Agrawal (2005) links such logics to the production of individual subjectivities through dispersed but systematic regulatory practices, through which both ecologies and populations are enviroined. These and other post-Foucauldian analyses (e.g., Darier, 1999), each mapping out a particular *dispositif* in context, suggest directions for exploring further how ecological and human security are jointly articulated within a system of neoliberal, global institutions.

Ecological discourses operate in a co-constitutive relationship with ecological politics. For example, Markovitz and Klaver (2012, pp. 18ff) have examined the Green Party’s role in German politics, identifying ecology as one of “four pillars defining Green identity,” articulated together with “feminism and women,” “peace and pacifism,” and organizing strategies emphasizing “democracy from below.” While the first of these pillars is ecological by definition, each of the others also suggests an ecological sensibility incorporating notions of equity, care, and interdependence. Cold War-era protests against nuclear weapons based in Western Europe were central to Green Party origins in a number of European nations, linking traditional security concerns with ecological and feminist politics in formative and enduring ways. Here, the state’s military apparatus has itself been depicted as an existential threat to ecological, human, and societal security.

Nongovernmental organizations play important roles in ecological politics, with positions ranging from radical critique and direct action tactics, to legal interventions, to collaborative engagement with corporate and government actors. The very names adopted by some groups, such as Earth First! (where the exclamation point is an integral element) and Environmental Defense, signal urgency and securitization. Sea Shepherd Conservation Society (formerly Earth Force Society) deploys a flotilla known as “Neptune’s Navy,” flying skull and crossbones flags enacting a piracy-as-resistance motif. After separating from Greenpeace over strategic and tactical disagreements, Sea Shepherd has taken a particularly aggressive position as a self-identified defender of marine species’ security. Meanwhile, Greenpeace itself was the target of violent state action when its flagship vessel, the *Rainbow Warrior*, was bombed by French agents in 1985 while protesting nuclear weapons testing in the Pacific Ocean (Robie, 2007).

These examples illustrate a complex dynamic of securitization and “counter-securitization” (Aradau, 2004) as organizations claim positions speaking for, and corporeally defending, environmental subjects while challenging state and corporate authority in national and international contexts. One aspect of those efforts has been the innovative use of “image politics,” a rhetorical genre characterized by DeLuca (1999b) as involving dramatic visual imagery, often strategically staged, and message dissemination using popular media channels (cf. McHendry, 2012). Acts of “ecotage,” or direct action involving destruction of corporate or government property, have been labeled as terrorism by traditional security actors, while conversely, violent repressive actions



as in the *Rainbow Warrior* case have been characterized as state-sponsored terrorism in international courts (Robie, 2007). Competing articulations of objects of security and of legitimate (or legitimated) agents of security are evident in these settings. Aradau (2004, p. 399) argues, however, that counter-securitization may be problematic when it “leaves intact the logic of security that shapes social relations” and the “enmity and exclusion constitutive of securitization.”

In other settings, nongovernmental organizations and institutionalized politics have evolved together symbiotically. Eder (1996), Blühdorn and Welsh (2007), and others have examined processes of institutionalization as environmental protest actors transition from dissident roles to become established participants in routinized politics. While offering opportunities for political legitimation and influence, institutionalization can also blunt more radical forms of critique.

Discourses of “ecological modernization” (see Hajer, 1995) provide one example, in which visions of endless technological advancement promise to address ecological threats without impeding commitments to ever-expanding growth and consumption. Recent versions of this view, under the banner of “ecomodernism” or “eco-pragmatism” (see Dalby, 2016), have sought to securitize the problem of climate change to promote investment in particular technological solutions. The securitization grammar identified by Buzan et al. (1998) is evident in the ecomodernist narrative: climate change presents an existential threat and imminent point of no return (cf. Russill, 2008), while technological innovation offers a possible way out. However, the ecomodernist narrative has largely favored centralized mega-technologies such as nuclear energy, emphasizing their low-carbon benefits while minimizing their own ecological hazards. Here a neoliberal economic logic favors expanding energy production to accommodate continued and increasing consumption, rather than promoting strategies of conservation and demand reduction. Some ecomodernist thought leaders have framed alternatives such as solar and wind power as existential threats to their preferred technologies and the way of life they presumably enable, thus securitizing prevailing modes of energy generation and use. In contexts such as these, critical analyses might examine further how issues of ecology, environment, energy, and climate are securitized/desecuritized, which governmental and nongovernmental actors engage in those processes, what effects ensue, and whose interests are promoted or constrained under conditions of securitization.

### Risk, Precaution, Regulation, Uncertainty, and Trust

Security discourses intersect in complex ways with concepts of risk, precaution, regulation, uncertainty, and trust. Famously, the sociologist Ulrich Beck (1992, 1995) characterized risk as a fundamental principle organizing contemporary society: Along with the age-old (security) problem of equitably distributing scarce resources, society now confronts a parallel (security) problem of equitably distributing its self-produced risks (Beck, Giddens, & Lash 1994; Lash, Szerszynski, & Wynne, 1996; Rosa, Renn, & McCright, 2014). Perhaps ironically, many of those risks are recursive products of technological solutions to problems of scarcity; for example, in addressing issues of energy security, society produces greenhouse gas emissions, nuclear wastes, and other ecological threats.

As with the securitization plot described by Buzan et al. (1998), a prevailing grammar appears to organize discourses of risk. Arguably, risk discourses exhibit a similar three-part form: A threat is recognized, deemed sufficiently urgent and consequential to require management, and subjected to a managerial discipline. Practices of risk analysis, risk communication, and regulation (including industry self-regulation as well as regulation by government entities) have become institutionalized as authoritative means of environing such threats. Parallel (or perhaps “inverse”) discourses of precaution have emerged as well (see Di Salvo & Raymond, 2010; Science for Environment Policy, 2017), but while *risk* suggests managing hazards in ways

that preserve and protect the status quo, with inherent tradeoffs between safety and economics, *precaution* suggests limiting activities in ways that may threaten the prevailing order. Thus, antiregulatory and neoliberal discourses often frame precautionary approaches to risk as themselves existential threats to the values of innovation, progress, and prosperity.

Concepts of risk also involve the related principle of *uncertainty* (Renn, 2008). The sociologist Niklas Luhmann (1993) distinguished between “danger”—an external threat to a system—and “risk,” a framework for making decisions about how to respond to such threats. However, knowledge about those threats is invariably incomplete, making trust and confidence in institutions that evaluate and manage risk essential (Kinsella, 2012, 2016). In matters of ecology, environment, energy, and climate, science plays a key role as one such institution (Beck, 1992; Buzan et al., 1998). However, as with the dynamic of securitization, assigning threats to the regime of risk can potentially depoliticize them, transferring them from the public to the technical sphere of argument (Goodnight, 1982; Renn, 2008).

### Ecological Security and Conflict Across Sectors and Levels of Analysis

Buzan et al. (1998) have identified five key sectors in their securitization model, encompassing military, environmental, and economic security; the maintenance of social structure and values; and the preservation of political order and authority. In the domain of ecology, environment, energy, and climate, regulatory and governance institutions are often sites of communication across these sectors, or alternatively, boundaries between them. For example, Kinsella, Kelly, and Kittle Autry (2013) have examined the regulatory process for commercial nuclear power in the United States. There, issues of public health, safety, and environmental protection are addressed by one authority, the U.S. Nuclear Regulatory Commission, while economic aspects such as financing, cost, and profitability are assigned to state-level regulatory agencies or to open market competition. This boundary helps manage the complexity of the nuclear regulatory enterprise, and as Luhmann (1990) has observed, complexity reduction is a fundamental aspect of sociotechnical systems. At the same time, this division of regulatory activities can also affect the management of important tensions between safety and profitability. Energy issues are often sites of such cross-sectoral influence and boundary work as energy security, environmental security, and economic security interact with multiple antagonisms and tradeoffs.

In a study by Zagacki (2008) of the U.S. military’s effort to build an airfield in a coastal community in North Carolina, the military, political, environmental, and social sectors intersect. Despite the state’s history of support for the military sector, and post-9/11 appeals to patriotism and security, local residents argued successfully against the project. An environmental impact study was one site of engagement in the dispute, but residents also emphasized broader threats to their community’s established way of life. Redefining “homeland security” at a more local level became another significant feature of the residents’ arguments.

Along with security sectors, Buzan et al. (1998, p. 6) also distinguish a number of levels of analysis including international systems; subsystems of regular interaction within the international systems; units such as states, nations, and transnational corporations; significant entities within those units; and individuals. Within that framework, issues of ecology, environment, energy, and climate provide sites of conflict and/or collaboration across levels. For example, protecting marine fisheries from pollution and overharvesting involves intergovernmental engagement, often facilitated by nongovernmental organizations and often affecting the operations of corporate actors. Other examples include the changing situations for international shipping, oil and gas exploration, and oil and gas production as arctic ice grows thinner due to global warming. Drought in some locations, flooding in others, evolving constraints for

agriculture, and new patterns of insect-borne disease transmission are among the other effects of climate change. As disruptions of the prevailing global system, these phenomena contribute to a changing context for understanding and enacting security.

### The Scope and Ethics of Security Inclusion: Environmental, Climate, Interspecies, and Intergenerational Justice

An additional—and essential—concept implied by security is *justice*. Not only is there an ethical imperative to extend security broadly and fairly, but as a practical matter, failures to do so can promote conflicts that threaten multiple parties. Aradau (2004, p. 399) argues that the logic of securitization, grounded in notions of urgent threat and division, entails “enmity and exclusion,” suggesting distributive rather than integrative understandings of security. Accordingly, Aradau argues for desecuritization as emancipatory democratic practice. One approach to security justice might be to expand the boundaries of inclusion, understanding both threats and resources as phenomena shared by, and thus constituting, a broader community. Concepts of environmental justice (Malin, 2015; Sandler & Pezzullo, 2007; Schlosberg, 2013), energy justice (Jenkins et al., 2016), and climate justice (Sovacool, 2013) have the potential to inform further thinking about expanded ecological security.

The work of rhetorical critic Kenneth Burke provides additional insights that might contribute to such a vision. For Burke (1969, pp. 21–58), social divisions may be addressed through *rhetorical identification*, grounded in a speaker’s references to shared “substance”; that is, “consubstantiality” between their interests and those of their audiences (see Roorda, 1997). Tracing the word’s roots as “sub-stance,” Burke notes that paradoxically, substance denotes an essential element constituting a human subject, while also denoting an external foundation—a part of one’s “environment”—on which that subject stands. Ecology, environment, energy, and climate are among the most basic modes of consubstantiality that can unite individuals, groups, nations, and cultures.

Here, concepts of justice might also be expanded to rearticulate conflicts between human security and the security of non-human species. For example, naval uses of sonar systems, deemed essential to military security, pose existential threats to marine mammals (see Callister, 2013). Utility-scale solar power projects sited in desert ecologies respond to climate and energy security concerns, but threaten fragile tortoise species. In a final example, African elephants and rhinoceros are endangered by poaching, driven in part by illegal efforts to fund human conflicts, while some governments, organizations, and individuals make extraordinary commitments to their protection. These and other interspecies security conflicts have generated substantial controversy and have prompted significant public and institutional responses, suggesting possible directions for reconsidering human relationships with other-than-human creatures (cf. Plec, 2013).

Ecological, environmental, energy, and climate security also involve profound questions of *temporality* and *intergenerational justice* (Adam, 1998; Skrimshire, 2010). Decisions made in the present, deliberately or by default, constrain and enable the security of future generations. Present threats prompt urgent calls for action, but the effects of solutions adopted can unfold unpredictably over long durations. Adam (1998) and others have noted that neoliberal economic perspectives, which so deeply inform technological and policy choices, typically discount the value of future security in favor of maximizing present security. The effects of that approach are exacerbated when long-term risks are inherently uncertain. Security legacies now being enacted for future generations include threats recognized broadly, but still involving substantial uncertainty, such as greenhouse gases, nuclear wastes, and accelerating species extinctions. Other risks, associated with emerging technologies such as genetic engineering or proposed

geoengineering and climate interventions, present even greater levels of uncertainty. How to balance present expectations of ecological, environmental, energy, and climate security with the security of future generations—over a wide range of conceivable time frames—is both an ethical question and a question of imaginative capacity.

### NUCLEAR ENTANGLEMENTS

I now provide a brief case study illustrating further some of the issues considered thus far. The material phenomena known as “nuclear energy” are as old as the universe itself, but nuclear energy was discursively constituted only at the turn of the twentieth century. Nuclear knowledge was quickly envired—surrounded, contained, and subjected to managerial regimes—as its urgent existential threat was articulated (Kinsella, 2005, 2007). A key speech act in that securitization process was the historic letter to U.S. President Franklin Roosevelt, signed by Albert Einstein, which was written and received in a context of global security threats. Secrecy, followed later by technocratic logics, secured much nuclear knowledge from that point forward, placing it in tension with norms of scientific and democratic transparency (Hamblin, 2008; Kinsella, 2001; Kinsella & Mullen, 2007).

A partial desecuritization effort began during the 1950s, promoting civilian uses of nuclear energy (reframed as the “peaceful atom”). New discourses articulated nuclear power as a solution to global energy security challenges in a context of expanding population, industrialization, and consumption, within master frames of technological progress and sustainable development. Nevertheless, civilian nuclear energy programs are fraught with tensions among military, environmental, economic, societal, and political security imperatives (Kinsella, Andreas, & Endres, 2015; Malin, 2015).

In the military sector, civilian nuclear power is linked materially and symbolically to weapons technologies, although the “dual use” boundary is a matter of perpetual debate. Article IV of the Nuclear Nonproliferation Treaty asserts “the inalienable right of all the Parties to the Treaty to develop research, production and use of nuclear energy for peaceful purposes,”<sup>5</sup> embedding the dual use dilemma in international relations by articulating nuclear technology as a matter of state sovereignty. Japan exemplifies a nation that has acquired large inventories of plutonium by operating a civilian atomic power program, while building a nuclear fuel reprocessing facility capable of making that material available for weapons use. Here, domestic energy security efforts present a latent military threat to other nations, potentially prompting regional cycles of nuclear weapons proliferation (Volpe, 2017). An expanding potential for such cycles exists as additional nations consider nuclear power programs in Asia, the Middle East, Africa, and South America.

The Japanese example also illustrates entanglements between civilian nuclear energy and environmental security. One argument for reprocessing, in Japan and elsewhere, has been to address the ecological (and other) threats posed by accumulating nuclear waste, although the economics of that approach have proved daunting. Meanwhile, the 2011 Fukushima Daiichi nuclear power plant disaster, while triggered by a massive earthquake and tsunami, was also a product of failed regulatory and political oversight. The long-term environmental and public health consequences of the Fukushima disaster remain unpredictable.

In the economic security sector, nuclear power has long been promoted as a driver of economic growth and the expansion of human security understood as energy security. Current ecomodernist narratives emphasize the low-carbon benefits of nuclear energy in a context of urgent, existential threats posed by climate change. However, commitments to nuclear power involve substantial economic subsidies such as cost-shifting to electricity consumers, risk-shifting

from corporate owners to government-funded insurance programs, tax credits, and other mechanisms varying by national context. These arrangements threaten investments in alternative low-carbon technologies that may offer better long-term environmental, economic, and climate security futures (Sokolski, 2010).

In the social structure and values sector, commitments to nuclear power have long aligned with “Promethian” visions (Dryzek, 1997) of technological optimism and entelechy (i.e., developmental imperative; see Kinsella 2005), and with discourses of neoliberalism and globalization. Global institutions such as the International Atomic Energy Agency and the Organisation for Economic Co-operation and Development’s Nuclear Energy Agency, influential in framing understandings of international development and sustainability, play key roles in articulating those visions. However, national-level responses have varied. Some countries have embraced nuclear power programs as symbols of national identity (Hecht, 1998), while others have resisted their adoption for the same reason (Felt, 2015). In many nations, nuclear programs have been sources of deep division. Germany’s reexamination of nuclear power following the Fukushima disaster was organized via an “Ethics Commission on a Safe Energy Supply,” explicitly articulating energy security choices with national values.<sup>6</sup> The Commission’s recommendation to phase out nuclear power has been one element in a national commitment to alternative low-carbon energy choices.

In the final domain identified by Buzan et al. (1998), political stability and legitimacy, institutions of nuclear regulation and governance are important sites of concern. National governments and commercial facility operators are challenged not only with the material aspects of nuclear safety and security, but also with the problem of maintaining public trust and confidence (Kinsella, 2016). The spatial dissemination of radioactive hazards via atmospheric, marine, and hydrological pathways makes their containment a problem transcending national systems of governance. The temporalities of nuclear waste defy the logics of institutional control and predictive risk management that are so central to discourses of nuclear safety. Emerging cybersecurity concerns (see Van Dine, Assante, & Stoutland, 2016) provide yet another example of the complex landscape for nuclear security threats.

### CONCLUSION: COMMON GROUND FOR SECURITY STUDIES AND COMMUNICATION STUDIES

As this chapter illustrates, ecological, environmental, energy, and climate security are closely entangled phenomena. The material and discursive co-constitution of these phenomena has received considerable attention in security studies, particularly in securitization theory. Meanwhile, scholars of environmental communication, rhetoric, and discourse have grappled with parallel theoretical and practical questions, with less explicit attention paid to their security dimensions. Recent projects (e.g., Taylor, forthcoming, in the area of nuclear weapons communication) have begun to forge closer and more fine-grained links between questions of communication, materiality, and security, offering avenues for further development.

Questions of language and discourse have become prominent in security scholarship and invite closer attention in the ecology, environment, energy, and climate domain. The material dimensions of security in that domain are evident and essential, but subjects, objects, and practices of security are inevitably constituted through communication. Security sectors and levels of analysis are valuable analytical constructs, but the ontology they represent is articulated through language as well. Security inclusions, exclusions, antagonisms, and commonalities, and fundamental notions of security itself, are not given, but produced discursively.

At the same time, ecology, environment, energy, and climate provide essential, material points of reference for discourses and practices of security. If communication processes are about addressing matters of common concern, and constituting communities of concern, then those points of consubstantiality are among the most fundamental. Accordingly, communication studies and security studies share important common ground, and a foundation for further productive dialog, in the ecology-environment-energy-climate domain.

## NOTES

1. The relationships between notions of ecology and environment cannot be developed here in detail. One difference involves ecology's holistic emphasis on connections between organisms and their environments, dating to Ernst Haeckel's first use of the term, versus a perspective on environment informed by twentieth-century systems theory that places a greater emphasis on organism-environment distinctions (cf. Luhmann, 1989). Arguably, "environment" aligns more closely with technocratic, resource management views, while "ecology" aligns more closely with concepts of emancipatory politics (as suggested by the term "political ecology"). To help preserve these nuances, as well as implicit distinctions involving "energy" and "climate," I use the admittedly cumbersome term "ecology, environment, energy, and climate" throughout this chapter.
2. The field of security studies encompasses distinctions among "traditional," "realist," "critical," "poststructural," "securitization," and other approaches, some associated with academic communities such as the "Copenhagen," "Welsh" (or "Aberswythe"), and "Paris" schools. Here I engage with these distinctions only as needed.
3. A peer-reviewed journal established in 2014, *The Anthropocene Review*, is one indicator of the institutionalization of the Anthropocene concept.
4. For clarification, environmental communication scholar J. Robert Cox and political scientist Robert W. Cox (often cited in the security literature) are different authors.
5. See [www.un.org/disarmament/wmd/nuclear/npt/text](http://www.un.org/disarmament/wmd/nuclear/npt/text).
6. See [www.bundesregierung.de/ContentArchiv/EN/Archiv17/Artikel/\\_2011/04/2011-04-04-ethik-kommission\\_en.html](http://www.bundesregierung.de/ContentArchiv/EN/Archiv17/Artikel/_2011/04/2011-04-04-ethik-kommission_en.html).

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