Christian A. Klöckner, **The Psychology of Pro-Environmental Communication: Beyond Standard Information Strategies**, London, UK: Palgrave Macmillan, 2015, 271 pp., $35.00 (paperback).

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Christian A. Klöckner's book, **_The Psychology of Pro-Environmental Communication: Beyond Standard Information Strategies_**, covers both theory and case studies on encouraging pro-environment behavior through environmental communication. It does so from a multidisciplinary perspective, taking into account communication, psychology, and sociology.

The book is divided into three parts. In Part I, chapter 1 defines environmental communication "as a process by which meaning about . . . environmental problems is exchanged" through "verbal and non-verbal communication activities" (p. 18). The author uses chapter 2 to argue that communication ought to be understood with respect to structural changes, technological developments, and policy changes. In chapter 3, at the beginning of Part II, he writes, "if being environmentally friendly can become part of an identity, we need to set the stage so that a green identity is accepted" (p. 67). This emphasis on identity is then linked to context in chapter 4: "Subjective representations of context" are often "more important determinants than objective constraints" (p. 89). Subjective representations give form to identity, and vice versa. An effective environmental communication strategy ought to address the "mismatch between perceived opportunities and objective opportunities" (p. 89).

Klöckner then lays out the comprehensive action determination model, with one assumption being that "habits develop over time by repeatedly performing a behavior successfully, linking habits to behaviors at earlier points in time" (p. 93). This model is a decision model, focusing on a decision at a point in time; however, it does not fully account for "how people *change* their behavior" (p. 94). He then explains the trans-theoretical model with the following phases: Pre-contemplation, Contemplation, Preparation, Implementation, and Maintenance. Communication is especially relevant to the "transition from Contemplation to Preparation," (p. 94) assisting with decision making between behavioral alternatives. Behavioral change can be a result of self-regulation, which lends itself to the stage model of self-regulated behavioral change (Bamberg, 2013), an extension of the transtheoretical model that is "specifically adapted to environmental behavior" (p. 95). The self-regulated behavioral change model is also a multiphase process: It includes Predecision, Preaction, Action, and Postaction. Intentions about goals, behaviors, and implementation are formed, with these intentions shaping new behavior in the Postaction phase.
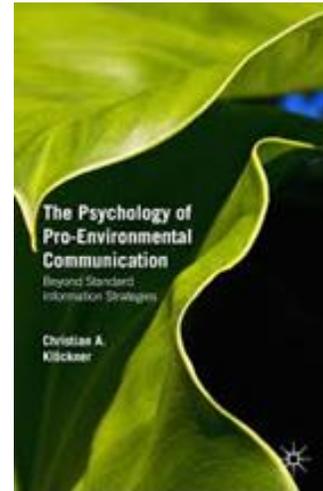
Throughout chapter 5, Klöckner covers the diffusion of innovation theory (Rogers, 2003), which takes into account changes over time. Klöckner accounts for various examples in which a specific innovation was adopted with varying levels of success. For instance, alternative fuel vehicles were diffused quite successfully; in contrast, diffusion was less successful with regard to sustainable housing, because of unclear communication channels and users' unfamiliarity with new sustainable technologies. The author also addresses the shortcomings of this theory. Diffusion theory assumes that innovations are invariably positive. Questioning this assumption, the author then proceeds to clarify what he considers as prerequisites for "good" innovation. An innovation should have a "clear relative advantage for the individual," being "compatible with established norms and practices as far as possible" (p. 113). This proposed requirement highlights how many environmental innovations in practice do not yield clear individual benefits, often being incompatible with pre-established lifestyle practices and norms.

Chapter 6 provides a platform for Klöckner to connect risk and environmental communication, as well as re-visiting the notion of uncertainty (chapter 5). "People with high environmental concern reported high risk perception" and those with "low environmental concern reported low risk perception if no uncertainty was communicated"; however, "both risk perceptions approached medium values when uncertainty was communicated" (p. 133; from Kuhn, 2000). Not planning how to include such uncertainty in environmental messages "might impair our trustworthiness, and doing so may lead to people neglecting the problem or doubting our competence" (p. 134). The author also concedes that "maybe uncertainty should only be communicated to people with low to medium concern" (p. 134). This is one of the weaker parts of his book, insofar as it appears unrealistic to separate audiences in such a manner.

He shifts to firmer intellectual ground in his discussion of risk. Risk perception itself is socially constructed, as shown by the fact that risk can be attenuated or amplified. For instance, it is difficult for people to perceive the risk of flooding, storms, or droughts as high, given that these risks have been around for a very long time. And many behaviors lead to environmental problems, yet have strong short-term benefits; perceived risk is thus diminished. Similarly, risk-related behaviors are often detached from the risk of the outcomes, also leading to diminished perceptions of risk.

The focus of chapter 7 shifts more to providing practical clarifications on the design and implementation of environmental communication campaigns. The author advocates the benefits of segmenting target groups along demographic, geographic, behavioral, and psychometrical dimensions. A section of chapter 7 is devoted to discussing applications of new technology (e.g., dynamic webpages, GPS trackers integrated into smartphones, and tablet PCs) into market segmentation.

This discussion transitions nicely into chapter 8, the start of Part III. Here, the author discusses two sets of intervention techniques (communicative and noncommunicative, respectively). For communication-based techniques, his reference to social models is especially noteworthy, as the author relates them to studies that encouraged pro-environmental behavior by strengthening descriptive and injunctive norms. Noncommunicative intervention techniques (e.g., structural changes, product bans) are most likely to have a significant impact when behavior is highly habitualized and is context-dependent. Communication-based techniques, which primarily take on the form of information- and education-based interventions, are most effective for behaviors with "low habit strength." For habitualized behavior, he

argues that context changes are necessary, and they can be brought about via noncommunicative techniques.

Chapter 9 shifts the focus from individual to group behavior, with specific group-centered intervention techniques also outlined. After outlining the differences between individual and group decision making, the author then draws upon insights from group psychology. The author points out how groups of people can also be "in different stages of their development" (p. 186). In accordance with his previous emphasis on the need to tailor environmental communication to individuals with regards to the different stages they are in (Chapter 4), he makes a similar argument for reaching out to groups of individuals. As an example, more mature groups with more clearly established and embedded norms and practices must be approached differently from those that have been formed more recently.

Group dynamics are highly pertinent to environmental communication, and the author spends a good part of chapter 9 discussing Petty and Cacioppo's (1986) dual-process model of persuasion, which states that "majority influence . . . leads only to superficial attitude change or public conformity, whereas minority influence triggers active thinking and permanent attitude change" (p. 189). Applying this model, "if one (or better two) members in a group," he writes, "can be convinced to consistently behave and argue for the environmental cause, their impact can be strong and lasting even if the majority is against them in the beginning" (p. 189). These individuals may very well initially be on the outside of a given community or group, thus making their "pitch" less likely to be adopted by the mainstream; one solution is to "recruit group members as confederates that then pursue the environmental communication from the inside" (p. 190).

Consistent with the diffusion of innovation theory (chapter 5), in-group individuals "have a better chance of becoming an influencing minority than externals because they are part of the group and have a higher likelihood of being consistent" (p. 193). Klöckner equates the concept of the "influencing minority" with organizational "champions," who play the role of reconstituting social practices in the interplay of people, structure and behavior. Organizations play an enabling and structuring role for these champions, serving as "both a context for their members and a product of their members' constructive processes" (p. 194).

Chapter 10 is devoted to computer games (e.g., *Fate of the World*), board games (e.g., Settlers of Catan), and role plays (e.g., Climate Diplomat). These recreational activities, the author claims, can stimulate social interaction and learning about issues related to the environment. With future computer games increasingly designed around interplayer connectivity and collaboration, the author also highlights the possibility of participation and interaction shaping individual (and group) behavior. Echoing previous scholarship on collaboratively designed games and their impact on behavior (Benkler, 2011), this chapter offers much insight on how repeated virtual exposure to such collaborative environments can structurally alter behavior. In this respect, Klöckner's findings reinforce what Williams (2006) had discovered with respect to how participation in online games can alter perceptions of real-world dangers.

Board games enable shifts in problem framing, structuring pre-existing knowledge and stimulating deep discussions about the mechanisms behind the game. Similarly, role plays also aid

environmental learning, especially when accompanied by additional exercises such as concept-mapping, which helps people to better understand the concepts learned. Chapter 11 provides space for the discussion of "spillover effects." Effects of pro-environmental behavior "spill over" from one domain to others over time; however, there is also a trade-off effect in the opposite direction, or a "negative spillover" (p. 233). For instance, people who purchase a fuel-efficient car become less willing to reduce their car use. This means there is reason to doubt whether purchasing a fuel-efficient car truly leads to a net benefit for the environment, if it is counterbalanced by a nonreduction in the use of such cars.

Multidisciplinary in nature, this book offers a comprehensive overview of theory and case studies. The parts of this book dedicated to accounting for the role of intraorganizational dynamics and innovation are arguably the most useful. These insights are applicable not only to environmental communication, but also organizational communication and management. The author's assessment of the role of computer games, board games, and role play also illuminates further research to be done on the intersection of recreational activities, pedagogy, environmental communication, and cultivation effects.

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