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Perspective Essay

# Exploring empirical typologies of human-nature relationships and linkages to the ecosystem services concept



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#### HIGHLIGHTS

- Positionality, character of bond, and understanding of nature are three dimensions of perceived human-nature relationships.
- Empirical human-nature relationship typologies are found in English and German, but not in Japanese language literature.
- The anthropocentric and utilitarian ecosystem services framework contrasts with the diversity of human–nature perceptions.
- Context-specific human-nature relationships can help operationalize the ecosystem service concept for planning processes.

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#### ABSTRACT

The ways people relate to their environment are recognized as relevant to landscape sustainability efforts and policies. Contemporary human-nature relationship concepts have historical and philosophical roots and frame empirical explorations. An increasingly dominant paradigm guiding landscape assessment and management is the notion of ecosystem services, describing benefits humans obtain from ecosystems. This paper reviews literature in multiple languages (English, German, and Japanese) on empirically grounded types of human-nature relationships. The dominant dimensions used to differentiate various types are highlighted, particularly those related to positionality of humans and nature with respect to each other, character of the bond between humans and nature, and perspectives on understanding of nature. Empirical explorations of human-nature relationships follow both deductive and inductive reasoning, use both quantitative and qualitative methods, and reveal wide variation in typologies. Ecosystem services as a theoretical concept is linked to dimensions of empirically grounded human-nature relationships concepts. The ecosystem services concept is situated quite clearly in the nexus of anthropocentric and utilitarian dimensions of human-nature relationships with notions of nature as separate from humans, though more inclusion of cultural perspectives and intrinsic values are emerging. More explicit attention to broader, diverse interpretations from local stakeholders may inform the operationalization of the ecosystem services concept for landscape planning processes. Context matters greatly, as people may hold multiple, even competing perspectives on their relationship with or role in nature, and they may change across different circumstances or time. Further research is needed to understand communication and mobilization strategies for sustainable action within landscapes.

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#### 1. Introduction

The sustainability of landscapes and their natural and cultural elements is increasingly the focus of environmental policies and resource management strategies. Concomitant with this landscape emphasis has been a shift in natural resource management thinking toward the notion that people within ecosystems should be integrated into planning and management (Schroeder, 2007). In other words, how people relate to the natural environment is increasingly recognized as relevant to landscape sustainability efforts and policies.

The ways in which people relate to and engage with the natural environment are diverse and "embedded in daily life" (MacNaughton & Urry, 1998, p. 2). While this heterogeneity is

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philosophically and theoretically appreciated, more clarity is needed to empirically understand the array of human-nature relationships (HNR) and to assess their implications for environmental actions in general and landscape-oriented activities more specifically. Our literature review focuses on empirically grounded human-nature relationship concepts, while recognizing key linkages to the realm of values, attitudes, concerns, and worldviews dominating contemporary environmental literature (Schultz et al., 2005). The empirical HNR concepts are also distinct from the vast work on images of nature (Buijs, 2009; Thompson, Ellis, & Wildavsky, 1990). We link our inquiry into empirically grounded typologies of human-nature relationships with the contemporary theoretical framework of ecosystem services to explore implications for resource management and landscape engagement.

Throughout Western history, various cultural perspectives on human-nature relationships have dominated, from the pursuit of mastery over nature in the quest to "tame" wild nature, to notions of idealized or "Edenic" visions of nature, and the sense of stewardship responsibilities guided by religious doctrine or other ethical directions (Bourdeau, 2004; Simmons, 1993). The history of these and other social constructions of nature over time and their landscape or environmental management implications are summarized elsewhere (c.f. Cronon, 1996; Glacken, 1967; MacNaughton & Urry, 1998; Schama, 1995) and provide important background for examining contemporary human-nature relationship perspectives. In these historical narratives about nature, landscape and culture, there is a tendency to focus on shifts within societies from one relationship with nature to another (White, 1967). Yet the question emerges, are various historical notions of human-nature relationships represented among people in contemporary society? And, what role do the various relationships people may have with nature in general or in specific places play in the actions of people and social groups (Gosling & Williams, 2010)? We posit that not only are there multiple ways people relate to nature, some of which harken back centuries, but that people may hold multiple or even competing relationships and they may change in dynamic ways across landscapes and time-space contingencies.

Today, an increasingly dominant paradigm guiding global to local decisions about managing human relationships with the environment is the notion of Ecosystem Services (ES) that are described as the benefits that humans directly or indirectly receive from ecosystems (Dick, Smith, & Scott, 2011; MEA, 2003). The concept is based on the framing of ecosystems as "service providers" of benefits for the well-being of humans and society. This metaphor of nature as a stock of benefits flowing toward humans was developed purposely to address a perceived "total lack of appreciation of societal dependence upon natural ecosystems" (Daily, 1997, p. xv) and to guide policy decision making and ecosystem management (Daily et al., 2000). While the ecosystem services framework was explicitly designed with the intention to mobilize conservation and management to improve environmental conditions as well as land management and to justify nature conservation (Ghazoul, 2007), this concept has been applied and interpreted in multiple and often contested ways. ES is a concept to quantify the value of ecosystems for human use or at least to raise awareness of their economic value (Braat & de Groot, 2012; Costanza et al., 1997). It is not clear from extant literature how this concept fits with other perspectives on human-nature relationships available in contemporary empirical literature. In this paper, we review literature in multiple languages on HNR typologies derived from empirical research and assess the dominant dimensions differentiating their various types. We situate the ES concept within this array of HNR typologies and initiate discussion of the application of HNR research toward mobilization or engagement of citizenry in landscape sustainability or management efforts.

## 2. Review of contemporary human-nature relationship typologies

#### 2.1. Scope and methods

The literature on HNR covers a spectrum from highly philosophical and ethical perspectives to more empirically oriented social scientific investigations based on primary data collection with individuals or on discourse analysis of policies or other archives. We distinguish our review of empirical exploration of individual citizens' perspectives from scientific theories of human-environmental systems (c.f. Scholz & Brand, 2011) or management oriented frameworks and metaphors (c.f. Raymond et al., 2013). For our review of the literature, we included works in which empirical research with primary data (e.g. from interviews, surveys, focus groups, or policy and news documents) were analyzed and organized into distinct categories of human-nature relationship typologies. Furthermore, we were interested in the dimensions used or discussed in analyzing the empirical data and differentiating the types. Previously published literature overviews on human-nature relationship typologies (c.f. van den Born, 2007) focused on congruencies between typologies but did not specifically compare such analytical dimensions.

Works from academic literatures written in three languages were included: English, German, and Japanese. These languages are spoken by members of our research team and allow for inclusion of perspectives across English speaking countries, Central Europe, and a portion of East Asia. Research from these regions and beyond is often published in international English language journals; however, HNR seems to be a field where publication in the respective local language is still quite common. In other words, while this inquiry was not intended to be a cross-cultural comparison per se, the inclusion of work written in multiple languages allows for a broader exploration than might otherwise be the case with works in just one language. The literature search was guided by both keyword and citation searches using databases of scholarly literature in the three languages. Online databases such as Scopus or Web of Science were helpful, but classical library catalog search and personal referral by colleagues and experts were also necessary, as a significant part of the research had been published in books, often with low circulation and not included in electronic databases. We included works by the same authors as long as the pieces were based on different empirical contexts or data sources. The ultimate listing of 19 works discussed below is not meant to be exhaustive as there is no way to ensure complete coverage of this topic.

We selected empirical works where nature is understood as natural environment and where the explicit focus is on relationship between humans and nature rather than on perceptions, images, or values of nature. Hence we sought to exclude literature from the non-empirical philosophical and environmental ethics domains, religious traditions, and environmental social science on values, attitudes and worldviews that did not explicitly articulate typologies of human-nature relationships. However, these terms are blurry (see Fig. 1), and there is overlap in terminology that complicated the inquiry. It is symptomatic that one of the most frequently cited typologies of human-nature relationship concepts (Kellert, 1996) actually uses the term "values" to describe the types. We also sought to exclude prescriptive notions of what human-nature relationships should be, including notions of preferred landscapes that may be part of national identity or ideology. Theoretical approaches from developmental psychology in Germany and the US were also excluded for this reason (e.g. Esbjörn-Hargens & Zimmerman, 2009; Hoff, 1999). However, there is often a certain normative orientation to this domain and it is difficult, perhaps impossible, to isolate purely empirical inquiry from mission-oriented perspectives. There is also a very close connection between concepts of

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