Nature-Culture Relations Framework

Why is thinking about nature-culture relations important for educators?

The natural world makes human life possible. The ways that humans understand, interact with, and make decisions about the natural world has varied across cultural communities, as well as over history. From our everyday choices, to how we build communities (even in dense urban environments), to national and global policy, nearly every aspect of our sensemaking, decisions, and societal infrastructure are shaped by culturally constructed conceptions of human relations with the natural world–what we refer to as **nature-culture relations**. The complexity of nature-culture relations and the ways they permeate all aspects of life are studied across a wide range of fields from ecology and physics, to history and anthropology, to sociology and economics, and many others. Nature-culture relations are especially central to science and the ways in which scientists imagine, conceptualize, and investigate phenomena. Many 21st century challenges to social and ecological systems' health and resilience are caused by unsustainable and imbalanced human-nature relationships and practices. These imbalances are changing ecosystems across the earth to the point that scientists have called these a new era in the earth's history–the anthropocene. A key opportunity and need of the 21st century is for local and global communities' to adapt to changing lands and waters and develop sustainable relations with the natural world. Importantly, issues of power and historicity continue to shape nature-culture relations and our ability to cultivate just, sustainable and culturally thriving societies. It is important for educators to recognize how nature-culture relations and the demands of the 21st century pervade all aspects of learning in formal, informal, and everyday learning environments–particularly in science education.

This framework describes two predominant cognitive models of nature-culture relations 1) *humans **"apart from"** the natural world*, or what we call nature-culture divides; and 2) ***humans are "a part of" the natural world***, or what we call ***nature-culture complementarities***. There is a growing body of work demonstrating that "a part of" models support more complex understandings of the natural world and more sustainable decision making. However, research has demonstrated that in the United States "apart from" models are prevalent - particularly in educational environments and in educational materials (even in children's books!). The *Learning in Places* project is focused on developing learning environments that reflect and cultivate "a part of" models through intentional learning in and across places, lands, and waters to support learning about complex socio-ecological systems and decision-making.

This framework also highlights five dimensions of **nature-culture relations** across the types of nature-culture relations that structure everyday life for students, families, and educators and are played out in routine learning interactions.

Part 1: Core Cognitive Models of Human Relationships with the Natural World

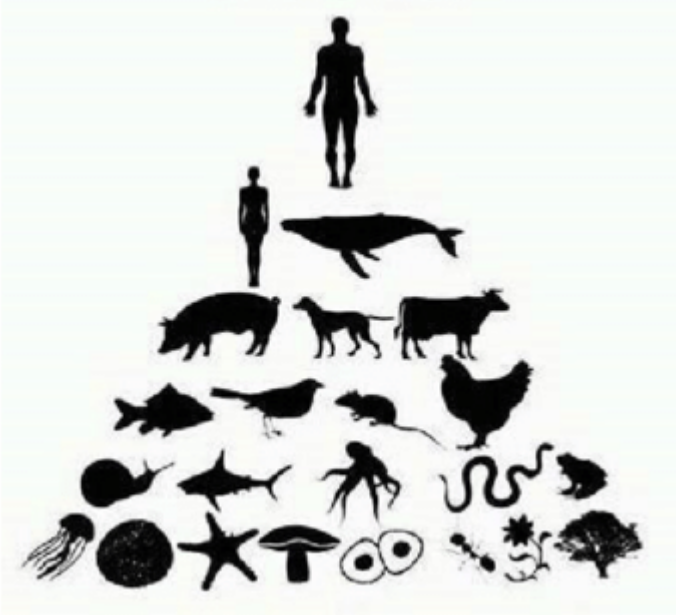


Diagram 'Ego-Eco'-Humankind is part of the ecosystem, not apart from or above it. This diagram depicts this simple fact clearly (diagram: S. Lehmann, 2010).

NATURE-CULTURE DIVIDES

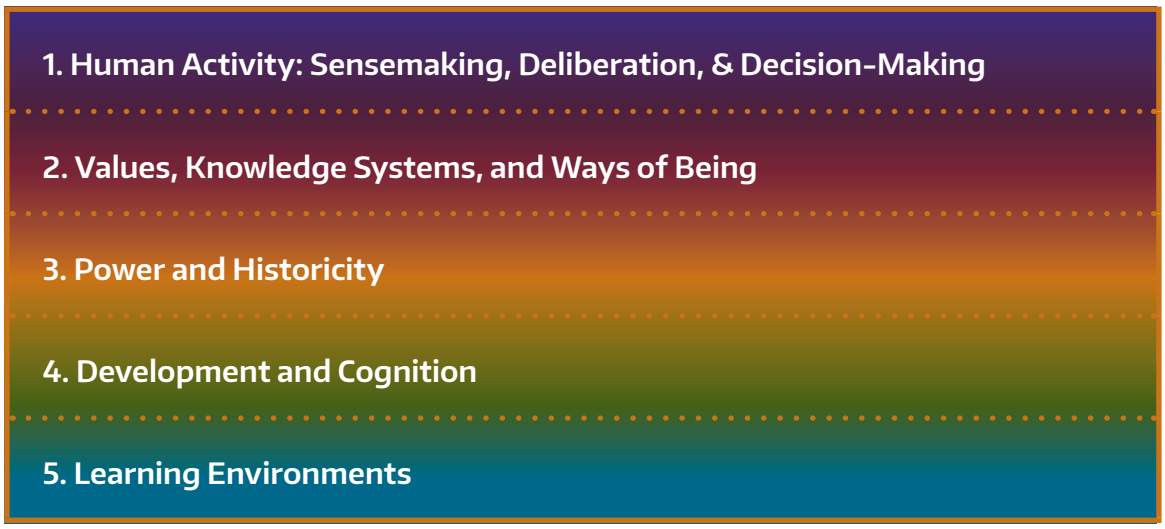
In nature-culture divides, humans are generally positioned as apart from or on top of the natural world. These "a part from" relationships tend to position humans in the powered position - and can have both positive and negative valances. Consider the national park systems in the United States. This system both values maintaining aspects of the natural world - but also does so by creating lands and waters where humans can not live - only visit. At a broader societal scale, our food systems or our energy systems increasingly reflect nature-culture divides that tend to privilege human relationships of consumption, extraction, and degradation of the natural environment. Importantly in nature-culture divides "non-humans" (including lands, waters, plants, animals, etc) are often positioned as resources - without agency, intentionality, or rights - that humans are entitled to. In many ways colonization, industrialization, urbanization, and globalization have been predicated on nature-culture divides and have created challenges for ecological systems as well as our social systems. The image above reflects how apart from models also tend to reflect powered social systems particularly with respect to gender and race.

NATURE-CULTURE COMPLEMENTARITIES

In nature-culture complementarities, humans are generally positioned as a part of the natural world. These "a part of" relationships tend to position humans as one of many actors in the natural world and often reflect deferential or reciprocally powered relationships and tend to extend dignity and rights to more than human life. Gardens and other human efforts to grow geographically and ecologically sound flora and fauna can be an example - particularly restoration or perma-gardens that are cultivated in densely populated areas. At broader societal scales, 80% of the world's biodiversity is found in Indigenous controlled territories and their systems of governance tend to reflect reciprocal nature-culture relations. These systems have enabled human communities to thrive with the natural world. There are growing efforts to develop new systems that reflect nature-culture convergences for example in Bolivia and New Zealand more than humans have legal standing and are part of the each nations constitution. In addition to these societal infrastructures, increasing evidence is showing that people who have "a part of" models of human-nature relations tend to have more sophisticated reasoning about ecological systems, support more sustainable decisions and policies, and are invested in collective and just wellbeing.

Part 2: Dimensions and scales of nature-culture relations

The core cognitive models of nature-culture relations are also systemic and are reflected across different scales and dimensions of life. In this framework we highlight five key dimensions including: 1) Human Activity, 2) Values, Knowledge Systems, and Ways of Being, 3) Power and Historicity, 4) Development and Cognition, and 5) Learning Environments. Understanding these different dimensions is important for educators to understand how culture, learning and identity are importantly intertwined with learning science. Understanding that teaching specific kinds of nature-culture relations is never a neutral endeavor - culture, power, and historicity are always present and thus matter for the kinds of learning opportunities we create and for whom. Science education has typically adopted a nature-culture divided orientation. This often persists even when learning about ecosystems and conservation. Learning in places is working towards learning environments that engage all of these five dimensions in order to create just and equitable learning environments that prepare young people for the challenges and opportunities of the 21st century.



1. **Human Activity: Sensemaking, Deliberation, & Decision-Making:** What we do, with whom, and why are shaped by nature-culture relations. These include the everyday human interactions - going to the grocery store or walking your child to/from school - as well as our policy decisions at local, national, and global levels - such as energy sourcing or lands management. School often privileges nature-culture divides. For example, most school-based science learning takes place indoors, away from the places where phenomena occur in the "real-world." Being outdoors, making relationships with lands, waters, and more-than-human others, and learning about healthful human impacts to the natural world are all human activities that can support nature-culture relationality.

2. **Values, Knowledge Systems, and Ways of Being:** Humans across the globe develop **culturally varied relationships** with the natural world that reflect our 1) values - what we hold to be right and ethical; 2) knowledge systems - what we hold to be true and how we know things; and 3) being - how we live our lives. Schools often do not recognize that they are predicated on western knowledge systems and they routinely fail to recognize the knowledges and expertises of families and communities.

3. **Power and Historicity:** Nature-culture divides reflect historicized power imbalances between humans and the natural world (i.e., resource extraction, habitat destruction for human use); and between humans (i.e., slavery, forced removal of people from homelands, exploitation of immigrant labor). Unexamined nature-culture divides routinely reinforce and serve unsustainable and unjust systems. In the United States, and other settler-colonial nations, nature-culture divides serve settler dominance and entitlement. Cultivating nature-culture complementarities is both about **repairing systemic injustices** between humans and the natural world and between human communities.

4. **Development and Cognition**: **Mental models are organizational frameworks** that help us make sense of what we observe and learn and make decisions. Our mental models are learned, beginning at birth and developing across the life-span and across multiple generations through participation in routine activities across multiple places. Our mental models of how the world is organized and works are shaped by nature-culture relations and part 1 of this framework(divided or complementarities) is a specific version of this dimension.

5. **Learning Environments:** All learning environments facilitate particular nature-culture relations (divided or complimentary) through **curricular choices, pedagogical decisions, and interactions between learners, educators, and the materials of the environment.** Many students, particularly students of color, come to schools with nature-culture relations that are robust and cultivated through intergenerational human activity on and with lands, waters, and places, but encounter schooling as a place where their values, knowledges, and ways of being are unwelcome, discouraged, or punished.

Suggested Citation

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