

◆ Introduction

Environmental Cultural Studies as a Transdisciplinary Field: Latin American and Iberian Studies

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Environmental cultural studies (ECS) searches for a multidimensional understanding of pressing issues that affect human communities, material environments, and the larger biotic communities on which the reproduction of human life has always depended. ECS, like cultural studies, researches relationships between power structures and everyday practices of social and cultural reproduction, resistance, and transformation. However, ECS does this by widening and revising anthropocentric understandings of “culture” and “society” in cultural studies in order to account for human relations with nonhuman life and matter. In this way, ECS views “culture” and “nature” not as separate entities but as entangled and hybrid realms. This volume of *Hispanic Issues* retraces shifting historical reconfigurations of symbiotic and symbolic relations between the human and the nonhuman world, challenging this very division. ECS is particularly interested in how semiotic and material processes connect and transcend each other within these nature-cultural relations. We look at how culture and politics not only produce natures and environments (at once materially and semiotically), but also at how chemical organic and inorganic substances move through matter, ecosystems, and bodies, affecting the ways people think, act, and organize. This leads us to see that we cannot protect ourselves without protecting nature, and that we cannot protect nature by separating it from ourselves, because it is only through the understanding of the interconnectedness among the different constituents of the world (human and nonhuman, organic and inorganic) that proper conceptual frames and strategies can be elaborated. In the process of elaborating this understanding, different fields of inquiry meet.

In this introduction, we will first trace the basic contours of and then sketch a series of theoretical and thematic trends in research at the culture-environment interface.¹ These trends, various of which are represented by the

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essays in this volume, shed new light on complex cultural and environmental processes and relations in different parts of the Luso-Hispanic world. We hope that this brief map of the actual and potential territories of ECS (necessarily provisional and influenced by our own wayfaring as academics and living beings), as well as the excellent essays that make up the volume, may provide some help to envision or articulate present and future developments in the field. But, before proceeding to sketch our map of ECS as a transdisciplinary field, let us explain the reasons why this volume focuses on the natures and cultures of the Luso-Hispanic World.

Colonial Legacies and Transatlantic Fluxes and Dialogues

The essays of this volume focus on the Luso-Hispanic world: a diverse group of communities and nation-states that arose from comparable historical experiences of Iberian colonialism and that experienced first (and likely most deeply) the radical reshaping of cultures and environments that stemmed from colonial understandings, managements, and exchanges of minerals, soils, people, and lifeforms. While the influence and experience of colonialism have been very different in Latin American and Iberian territories, it is no less true that the extractivist-productivist management of national territories and ecosystems (and, particularly, of marginalized bioregions within them) have affected both regions in comparable ways. At the same time, the economic metabolism of modern Latin American and Iberian cities has deepened and extended its dominance over rural areas in the last centuries, transforming them into increasingly depopulated sources of cheap food, energy, and raw materials. In this way, the processes of transatlantic colonialism and substate “internal colonialism” that sustained capital accumulation at both sides of the Atlantic during the last centuries gave way to the globalized neocolonial and growth-driven bioeconomies of the twenty-first century. Contemporary globalized bioeconomies also make it difficult to ascribe distinct roles to particular countries and regions within the play of neocolonial globalization. In the Spanish-speaking world, for example, the capital of many transnational corporations in the agro-industrial, energy, financial, and publishing sectors originates in and circulates through spaces that link the interests of the capitalist classes of Spain and Latin America.² “National” actors become a part of globalized neocolonial processes that disrupt an easy separation between “colonizing” and “colonized” regions in the Hispanic world.

Similarly, many actions of resistance to contemporary neocolonial processes have developed through a dialogue between Iberian and Latin American thinkers and movements. The Portuguese thinker Boaventura de Sousa Santos, for example, is one of the leading figures in the theorization of a

“pluriversal” and decolonial approach to knowledge formation that vindicates the diverse non-Western epistemologies of the global South. These Southern epistemologies (many of which view ecosystems, plants, and animals as living partners of humans) have inspired different forms of environmental activism in both Latin America and the Iberian Peninsula. De Sousa Santos’s voice has also been heard in Mexican “intercultural universities,” among Argentinian antifumigation activism, as well as in Zapatistas’ institutions for educational reform (such as La Universidad de la Tierra in San Cristóbal). Environmental activism has merged partially with the agroecological movement born out of the interaction between U.S.-based and Latin American agronomists and ethnobotanists (such as Stephen Gliessman, Efraim Hernández, and Miguel Altieri) who were inspired by the food systems of the originary peoples of the Americas. The work of the Catalan ecologist Joan Martínez Alier (a seminal figure in the fields of ecological economics and political ecology) has also been very influential in both Spain and Latin America. Beyond academic circles, Martínez Alier’s work on “environmental conflicts” and the “ecologism of the poor” has become known among environmental activists in the Spanish-speaking world as well as in Latin American grassroots movements like *Vía Campesina*. Finally, alternative forms of agriculture, education, and social organization (such as solidarity economies, ecovillages, Towns in Transition, and alternative currencies) have similarly developed through a productive dialogue across continents. We will see other examples of these transatlantic entanglements among (neo)colonial processes and decolonial movements in the essays of this volume.

Transdisciplinarity and “Knowledges from Below” at the Culture-Environment Interface

ECS is located within the academic area of the environmental humanities and connects cultural studies and environmental studies in the context of various intertwined crises that define the current post-1945 historical era.³ These crises include not only global climate change and its devastating effects on the Earth’s ecosystems and human communities, but also the crisis in the conceptual frameworks, imaginaries and modes of perception that, in the last centuries, have propped up the ideals of progress, development, economic growth, and technological innovation as the cure for humanity’s troubles and conflicts. ECS suggests ways to call into question the discourses and imaginaries that normalize capitalistic exploitation of the Earth’s organic tissues and inorganic matter. At the same time, it develops new conceptual tools and richer modes of perception, feeling, and thought in order to put forward alternative config-

urations of culture, as not separate from nature, and economy transformed by teaching of ecological economics that prioritize sustainability and respect for life (human and not). These configurations run contrary to greed, consumerism, and socioenvironmental degradation. (See the essays by Luis Prádanos, Béquer Seguín, and John Trevathan and William Viestenz in this volume.)⁴ Rather than a bounded field, ECS purports to be a transdisciplinary network's node for storytelling, conceptual reflection, and activism at the society-environment interface where the ultimate goal is to provide tools to solve the real issues of socioenvironmental degradation (Bernstein).

Our own work in ECS is also inspired by key theoretical insights developed in the intellectual tradition of Science and Technology Studies and, particularly, in the postconstructionist or "hybrid" models of social, cultural, and geographical analysis pioneered in the work of Bruno Latour (*We Have Never Reassembled*), Donna Haraway (*Women; When Species Meet*), Karen Barad, Daniel Kleinman, and Sarah Whatmore. Other intellectual traditions that have influenced ECS's theoretical perspectives and inspired our current research agendas are the multispecies ethnographic research proposed by anthropologists such as Anna Tsing (*Mushroom*), Marisol De la Cadena, Eduardo Kohn, and Tim Ingold (*Perception; Being Alive*); chimo-ethnographers such as Nicholas Shapiro and Michelle Murphy; the historiographical tradition focused on the interrelations between social and environmental processes in local and globalized contexts, or political ecology (McNeill and Engelke; Cronon; Leal et al.; Robbins); the new ways of understanding social movements and global capitalism illuminated by Martínez Alier's concept of "environmentalism of the poor" and Jason W. Moore's "world-ecology"; the "metabolic" understanding of economic fluxes and agents put forward by ecological economists (Constanza; Daly and Farley); the research on epistemological diversity and conflict developed by decolonial scholars (de Sousa Santos; Mignolo; Escobar); and the critical analyses of human-nonhuman relations developed by environmental philosophers (Riechmann *Mundo; Tiempo*; Alaimo; Daston and Mitman; Donalson and Kymlicka; Casal), ecofeminists (Orozco, Puleo, Herrero), and ecocritics (Morton *Ecology; Ecological*; Heise; Nixon; Hefes). These are some of the intellectual traditions that have influenced and inspired our own work. Yet, as the essays in this volume show, ECS is both a transdisciplinary open house (*oikos*) and eco-logical way of understanding the creation of knowledge that invites scholars and activists from diverse disciplinary backgrounds.

ECS welcomes everyone who shares the project of understanding present and past human-nonhuman relations (human relations with the environment, with other species, and with the technologies, discourses, narratives, and imaginaries that perform a mediating role in these relations) equipped with

a consciousness of the current planetary crisis and a future-oriented critical gaze. It welcomes all those scholars and activists for whom global warming and ocean acidification, the massive extinction of species, the growing piles of toxic landfills, the growing economic inequality within and among regions, and the increasing movements of migrants and refugees constitute interconnected phenomena and good reasons to change dominant anthropocentric epistemologies and worldviews. The essay in this volume by Michael Ugarte, which narrates the life story of a committed Spanish communist during the 1930s who became a Greenpeace activist at the end of his life, can be thought of as a parable of how the struggle for a more just and livable world has evolved during the twentieth century; the struggle for social justice and the struggle for the environment became one.

The humanities in the twenty-first century are also changing. Hyperspecialization and disciplinary autonomy (including the isolationist separation among scientific, technoscientific, social-scientific, and humanistic “expertise”) do not seem to make much sense if we want to understand the complexities and contradictions of a “modern” world in which social, cultural, economic, and environmental processes continuously co-shape one another. It makes even less sense if we want to envision and debate collectively possible solutions to today’s dual socioenvironmental crisis in which social inequality and ecological degradation are different symptoms of the same problem (Nixon, “The Great Acceleration”). These inevitable changes in the humanities, however, seemed to be slowed down and even contained by institutional barriers (Kitch). ECS aims to bring down at least some of these barriers and bring about new symbiotic academic cultures beyond traditional disciplinary and administrative boundaries.

Like cultural studies, ECS examines relationships between power structures and everyday practices and engages in the critical tradition of semiotic-contextual analysis of social practices, texts, and cultural objects. However, ECS’s main concerns are socioenvironmental problems and injustices (understood as material-semiotic processes and events) rather than their representations. Even though (because of its transdisciplinary character) the theoretical underpinnings of ECS might be broad, in general terms, it tends to understand socio-environmental processes, events, and actors from a perspective that is, at once, material-corporeal and semiotic. That is, a perspective that recognizes that all knowledge (human or not) is situated and embodied and that life and material processes on Earth cannot be separated from the meanings, social practices, and conceptual frameworks through which life and matter is understood, partitioned, inter-acted with, managed, or transformed (Haraway *Simians*; Wilson; Barad).

ECS is particularly interested in the intimate material and semiotic entanglements of power structures, human practices, and cultural processes with

ecosystems and technologies made up of diverse nonhuman constituents. ECS, therefore, broadens (and, as we will see next, also radically revises and complicates) the conceptions of culture inherited from the intellectual tradition of cultural studies. For ECS, culture includes not only artistic, scientific, economic, political, and religious practices, forms, and knowledges, but also collective modes of perceiving and feeling environments and lifeforms, strategies that are part of community life, and life-supporting practices such as those connected to the use of resources, the production and consumption of food, and the care of one's and others' living bodies (including the bodies of animals and plants).

At the same time that ECS approaches the relationships between human and nonhuman constituents implicated in these cultural practices and social processes, it questions concepts and discourses that have structured our understanding of the world as a divided entity split in two distinct realms: culture and nature, society and the environment. As different authors such as Bruno Latour (*We have never*) and Jason W. Moore have shown, this division was established in the early-modern period and, from then on, it has enabled the subordination of life to power. By means of this historical process, nonhuman lifeforms and inanimate matter not only became objects of scientific observation and experimentation, but also the matter, fiber, and meat that made possible capital accumulation within the "world-ecology" of capitalism (Moore). This extractivist-productivist conceptualization and exploitation of the environment and nonhuman life has radically transformed, in turn, human lives and communities all over the world (McNeill and Engelke; Moore).

While ECS seeks to rethink the human as immersed in, and constituted by, the nonhuman, it also questions inherited discursive constructions and imaginaries of nonhuman entities as passive or mechanistic. We are, however, far from taking any significance away from conservationist efforts, and we are far from embracing an analytical framework that flattens differences between specific ecosystems and biotic communities (enduring different degrees of health, toxicity, and destruction). Research projects in ECS may seek to understand, for example, how nonhumans inter- or intra-act with people and their technologies, how they respond to human efforts to master them, and how they deploy strategies of growth, expansion, and resistance. ECS also wonders how ethical thinking (and, in particular, the notion of responsibility) changes when human societies take into consideration the flows of life, matter, and toxic substances (endowed with diverse degrees of complexity, sensitivity, and, in many cases, awareness) with which their bodies are entangled.

ECS seeks to draw attention to the temporal, spatial, perceptual, and affective dimensions of life. That is, the diverse spatial configurations, narratives of time, and patterns that structure *life practices*—the evolving inter- or intra-ac-

tions among living beings and among these and chemical substances—that have contributed to our present intertwined socioenvironmental crises. (See da Silva’s, Molinari’s, and Polanco and Beilin’s essays in this volume.) These configurations, narratives, and patterns include scientific narratives; the biopolitical definition and management of human, animal, and plant populations; the material and symbolic production and management of trash and toxic agents (see McKay’s essay in this volume); everyday bodily exchanges and currents of affect across human/nonhuman species boundaries; and economic systems of valuation, transformation, distribution, and consumption of lifeforms, energy, and inanimate matter that operate across urban and rural areas (Cronon; Moore; see also Beusterien’s and Prádanos’ essays here).

ECS seeks to elaborate new heuristic and analytic tools and a renovated critical vision across the nature/culture divide in order to reinterpret conventional narratives and discourses of “progress,” “growth,” “development,” “modernization,” and “well-being” that have dominated public ideas and ideals. It does so by crafting stories, critical analyses, and concepts that stem from place-based knowledges as well as from different traditions of radical thought and practice in literature, the arts, the sciences, and the environmentally oriented humanities and social sciences. These stories, concepts, and critical visions allow us to confront macrodiscourses with lived practices and to understand the transformations undergone by modern human and nonhuman lives in ways that numbers and statistics alone cannot express. This change of perspective makes us move between, on the one side, a global-planetary view and abstract discourse, and, on the other side, what Donna Haraway calls “knowledge from below” (*Simians*, 67) generating as a result knowledges based on complexity (Robin 4). These are knowledges that open up an alternative set of qualitative socio-environmental data—including a wider range of bodily sensations, feelings, and “skills of perception and action” (Ingold *Perception*)—that enrich or challenge transcendental satellite views and dominant biopolitical visions based on statistics. (See, for example, Paula Unger and Julia Premauer’s, Molinari’s, and Polanco and Beilin’s essays in this volume.)

Waste, Technology, and Bio-Cultural Diversity

“Knowledges from below” complicate visions of success measured in terms of economic profit and growth by shadowing them with environmental damage, contamination, and the deterioration of the capacity of humans and nonhumans to reproduce and sustain life. In the Anthropocene, capital accumulation has led to accumulation of trash and toxicity. Marco Armiero proposes to call the Anthropocene a “Wastocene” because our environment is transform-

ing into a gigantic garbage dump that produces “wasted people” and “wasted spaces” (“Garbage”; “Toxic Bios”). According to Armiero, “toxic narratives” justify toxicity as a necessary cost for ways of life and material well-being that include family vacations abroad, a car or two, and many other customs that rely on unsustainable production, consumption, and exchange. In these narratives, the material world is understood as something that enables people’s well-being but that seems disconnected from global flows of materials, energy, and organisms that have radically transformed the biosphere and the geological structure of the planet. As Angel Polanco and Kata Beilin’s essay in this volume discusses, various processes of destruction and illness of our world are justified by the conceptual framework (structuring both the economy and dominant humanistic thought) that posits an optimal level of toxicity justified by human well-being understood in terms of consumption. This essay, together with Luis Prádanos’s essay on energy flows and Eduardo Molinari’s essay on transgenic agriculture, attempt to make visible the normalization of socioenvironmental destruction through harmful concepts and imaginaries of toxic happiness.

ECS attempts to analyze and illuminate “toxic narratives” as well as stories of environmental health and illness. We envision various kinds of toxicity, such as those coming from extractive industries (mining and fossil fuel extraction, for example) and agro-industrial food production based on monocrop plantations and the intensive use of chemical inputs. Yet we should not see these socio-environmental processes as something that takes place in marginal rural areas within an increasingly urbanized world. From the early modern period, and most clearly in the Anthropocene, many socio-environmental processes have acquired a global dimension and are entangled with transformations that often very distant (Whatmore; Hinchliffe). For example, as Amy Moran-Thomas shows, the global production and consumption of sugar-based industrial foods are leading in places such as the United States, Mexico, and Belize to epidemics of diabetes, especially among working-class, indigenous, and African American peoples (O’Brien; Otero).

The extinction of species is also a manifestation of a dual loss in biodiversity and cultural diversity. While the extension of monocrop plantations and pesticides is causing havoc among many local species of plants and animals, certain hegemonic discourses (which Vandana Shiva has called “monocultures of the mind”) are becoming uniformly accepted by a public sphere cultivated by corporate marketing and dominant economic discourses that promote increasing consumption rates and compounded economic growth.

ECS sees technologies not only as human tools or a means to an end, but also as active mediators with the capacity to transform the environment and act upon inter-human and inter-species relationships. Similarly, as Micah McK-

ay's and Oscar Pérez's essays in this volume show, wasted or discarded life and matter also have the capacity to regroup and act back in unexpected ways. In this way, technologies that transform life become a part of life processes themselves and, as such, they are subjected to transformations operated by life itself. From below, we can see many forms of technoscience as mediators of asymmetric exchanges between some groups of humans (endowed with particular forms of epistemological and social power), "discarded" humans (such as environmental refugees expelled from rural areas to city slums), and nonhuman lifeforms (GMOs, weeds, insects, lab animals, farm animals, microorganisms, protected species, and so on) From this perspective, scientists themselves, as historical actors and embodied living organisms, constitute an integral part of the experiments they perform. On the other hand, as Kata Beilin's essay on amaranth in this volume points out, the nonhuman animals and plants that are experimented upon may actively resist this experimentation by transforming their bodies, behavior, or reproductive strategies.

Cultural-Ecological Economies in a Lively-Material World

Ecological economics argues that hegemonic economic models are fundamentally flawed for not taking into account the material and environmental basis of all economic activity. According to ecological economists, all economic processes should be viewed as embedded in the Earth as a close metabolic system (only sunlight comes from outside) in which the circulation and transformation of energy and materials is subjected to the biophysical laws of thermodynamics (Daly and Farley). In a similar vein, other authors point to the impossibility of demarcating human bodies as something bounded and distinct from the environment and other lifeforms. Immersed in and constituted by air, water, organic matter, and microbial communities, all human activities (including breathing and eating) are conditioned by their nonhuman environments, which flow through them like water through soil.

Even the most sublime human ideas and ideals have emerged from entanglements with the material world in ways that we often fail to recognize due to inherited conceptual frameworks that define culture and society in opposition to the nonhuman or the not-sufficiently-human (Agamben). The Spanish writer Juan Goytisolo has argued that the distinction between body and spirit or mind—and the concomitant consideration of body functions as something inferior to reason and spirituality—opened the door to the exploitation and colonization of bodies and peoples considered as not-spiritual or not-rational enough. It has also led to the construction of spatial, historical, cultural, racial, gender, and species hierarchies that authorized "civilized" states and corpora-

tions to appropriate, “cheapen,” and exploit the natural world, nonhuman life, and those humans considered closer to nature (such as “primitives,” “Indians,” “Orientals,” people of African descent, women, and peasants) (Plumwood; Moore). According to Murphy, this process persists nowadays in “ethnographies of victimhood” that represent indigenous people as “less than human.”

From the perspective of ECS, the functioning of a capitalist economy not only requires a class-based social structure, a state-corporate nexus, the concentration of fixed and mobile capital in a few hands, and the availability of sources of cheapened raw materials, but also particular conceptual frameworks that validate and make sense of all the above (Harvey). Both capitalism and communism have required, for example, a modern anthropocentric understanding of humans as exceptional beings (because of their rationality, culture, or spirituality) capable of transcending, or emancipating themselves from, their earthly context: humans without limits and without duties toward their nonhuman others, humans that go *per aspera ad astra*. This understanding of the human led to defining human well-being as consumption. Yet historical experience has demonstrated that increasing rates of consumption are sustained by processes of socio-environmental destruction and by a widening social differentiation in terms of money-power and acquisition power. The socio-environmental perspective that ECS proposes allows us to understand how this power has been exercised (through a state-corporate nexus in the capitalist world) by means of geobiopolitical technologies such as huge dams (see Frye’s and Trevathan and Viestenz’s essays in this volume), overwhelming urban infrastructures (see Oscar Pérez’s essay) and energy extraction schemes that became particularly efficient in bioeconomy (Pavone; see Prádanos and Molinari in this volume).

ECS aims to challenge modernist conceptual models by viewing the economy not only as a cultural form (Polanyi et al.), but rather as an environmental and cultural form and, as such, as something subject to transformation within the biophysical limits of the Earth. Important steps forward in viewing economy in its ecological context have been taken by political economist Jason W. Moore and geographer Paul Robbins. For Moore and Robbins, global capitalism constitutes a world-ecology: a historical process through which nature and society have been mutually produced (both materially and ideologically). Robbins’s “political ecology,” similar to Moore’s “world ecology,” explores social-environmental changes “with explicit consideration of relations of power” (Robbins 20). In this line of thought, ECS sees cultural processes as something intimately connected with economic ones and, because of this, with microorganisms, minerals, organic matter, mutations of cells, movements of masses of air and water, and the planetary cycles of withering and renovation of life. This change of paradigm leads to recognizing that

animals, plants, soils, waters, and minerals have mediated modern cultural, economic, and political transformations for centuries. Because of that, we see *human* history and culture as a more-than-human process in which many species inter-act and intra-act through processes of different kinds (symbiosis, co-evolution, adaptation, conflict, destruction, and so on). John Beusterien's and Kata Beilin's essays in this volume are good examples of cultural analyses from this more-than-human perspective.

For ECS, modern discourses and imaginaries that construct culture, society, or the economy as closed systems mostly disconnected from nonhuman beings and environmental processes are toxic and misrepresent the materiality of the world in essential ways. To have a glimpse of these material-semiotic processes at work, we may think of the production, marketing, and consumption of objects such as diamond rings, coltan-based gadgets, chicken nuggets, and fur coats. We may also think of how the experience of virtual reality, shopping malls, suburban life, and car-driving are advertised. Conversely, Chris Jordan's photography of pelicans who died of starvation after ingesting plastic garbage may make us think of plastic as toxic food for agonizing birds.

Alternative Epistemologies and Multi-Species Worlds

ECS learns from nonacademic knowledges, including the diverse conceptions of human relations with nonhuman life and the environment developed by non-Western peoples. According to Boaventura de Sousa Santos, "there will never be political justice without epistemological justice" (6). That is, the racial hierarchies and political oppression of colonialism went hand in hand with hierarchization of knowledges and a discursive violence aimed at colonized peoples' ways of understanding the world (and themselves) (Mignolo; de Sousa Santos). ECS follows this claim and suggests that the ways in which other cultures classify, perceive, and interpret reality should not be placed *a priori* below the knowledge of scientists, engineers, social scientists, or philosophers trained in Western universities (Scott). Rather, there should be a more open and "pluriversal" dialogue among different traditions of knowledge (de Sousa Santos): for example, between so-called traditional, indigenous, or ethnic knowledges, on one hand, and the scientific or expert ones, on the other. In this way, the most convincing and beneficial knowledges for all the communities involved in a conflict (as it unfolds in a particular cultural-environmental context) have a chance to be discussed fairly and implemented.

Inspired by indigenous conceptions of nature, recent research in environmental humanities shows that humans and nonhumans can form alliances and build or defend their worlds together (Tsing; De la Cadena). Many environ-

mental humanities scholars, anthropologists, and philosophers who rethink materiality have shown in their work that nonhumans possess particular kinds of historical agencies that mediate cultural, political and economic undertakings (Haraway, *When Species*; Tsing; Morton; Bryant; Kohn; Bennett; Müller; Marder).⁵ While Haraway's concepts of "companion species" and "naturecultures" describe the material-semiotic entanglements between human and non-human animals and their mutual co-shaping (*When Species*), Tsing uncovers interspecies histories in which cereals are co-responsible for feminine subjugation, sugar cane becomes an agent of imperial domination, and mushrooms and fungi defy prevalent models of production and private property. These multispecies ethnographies and stories show that, as Karen Barad and others have pointed out, historical processes and agency are always the result of relations. In Barad's "agencial realism," rather than individual agency, there is always a hybrid agency resulting from what she calls "intra-action" of living things that is also constitutive of their very being. In this line of anthropological inquiry, Kohn and De la Cadena reflect upon indigenous peoples' understanding of forests and mountains, whom they envision as acting, and even thinking (Kohn), in order to consider their cultural and political impacts. In doing so, they are highlighting otherwise invisible transformations of life on both cultural and molecular level (Myers).

Distributed Agency and Ethics in Labyrinths

ECS questions the inherited certainty that only we humans are able to move things around, have interests, and act on them strategically. In doing so, it suggests an understanding of interests and strategies as they appear in networks of relations where agency is always distributed and contingent among humans and nonhumans. To clarify this idea further, let us take our own bodies and lives as an example. We (the authors) are not just "we," since billions of microbial communities live inside and outside of us and contribute to shaping our moods and thinking. The food we eat also alters these biotic communities that have already been modified by the substances that seep into food from water and soil, which, in turn, have been transformed by pesticides, antibiotics, radioactivity, and other by-products of our more-than-human economies. Thus, we can say that our interests and strategies are not only ours, but also result from our place within these material processes, inter-actions, and exchanges. Our agency is, therefore, distributed among the biotic communities we host, the organic matter we eat, and all the human and nonhuman forces that shaped them. Our agency is also distributed among the networks of humans in which we are immersed (children, partners, parents, friends, employ-

ers, students, and so on) who are also shaped by the material configuration of their unbounded bodies and by their companion-biomes. Finally, we are also conditioned by our relations with larger living beings that share our living spaces (Wisconsin mice, bats, squirrels, cardinals, and raccoons for one of the authors; Southern Californian cockroaches, bees, rats, and coyotes for the other) or to whom we are connected not only through the dense flows and networks of agro-industrial production, consumption, and trade, but also through a cohabitation of the same space. The fact that we humans are amalgamations of organisms and relations, that our actions are always inter- and intra-actions, and that *our* power and capacity to make an impact in the world is spread through networks composed of other objects and beings places ethical questions under a new light.

From the late-eighteenth century and, much more significantly, since the mid-twentieth century, ethical debates in the West have been broadened and revised through concerns with the destruction of the environment and the suffering of sentient animals. ECS shares this tradition of ethical thought and practice, not only by means of the inclusion of animals, plants, and ecosystems as objects of ethical consideration, but also by situating them within material-semiotic webs of relations and inter-actions. ECS calls for a rethinking of the concept of ethical responsibility by moving away from the simplified vision of freedom that does not know of the planetary connections and toward what Jorge Riechmann calls “action in labyrinth” (*Un mundo*). This concept considers the indirect impacts that power structures and material conditions have on our choices as well as the impacts that our choices, consumption habits, and everyday actions have on people and other lifeforms around the planet. This is a highly challenging notion of ethical responsibility because it requires awareness of how global connectivity functions. This includes the tracking of invisible energy flows and labor conditions (see Prádanos’s essay in this volume) and environmental consequences of the agro-industrial production of food and commodities (see Molinari’s and Polanco and Beilin’s essays). This labyrinth of moral responsibility could lead us, for example, to the plastic patches on the oceans and to the landfills where children scavenge toxic materials.

Temporalities and Questions of Time

Rob Nixon’s oft-quoted book *Slow Violence and the Environmentalism of the Poor* brought attention to the role of time in environmental destruction. The fact that many processes that lead to environmental damage occur over long spans of human time makes it difficult to place responsibility on particular

people. Who is responsible for the unnatural extinction of a species, the desertification of once-fertile land, or the death of a forest? In some cases, apparently invisible processes of destruction are traceable to the first oil pit or mine opened in a particular territory. Yet in other cases, such as in numerous territories of Latin America and the Caribbean, these processes date back to the beginning of the colonial exploitation of these territories by Europeans.

ECS calls for stories in which planetary time and human time establish productive dialogues that reveal important links between contemporary events and centuries-long socioenvironmental processes. Thinking through time in this way often requires a combination of focalizations (see Beusterien's and Pérez's essays in this volume). For example, the concentration on a particular moment or short time period needs to be combined with a much broader historical (and even geological) perspective in order to understand ongoing socio-environmental processes.

In the *long durée* individuals get lost. Since the beginning of the colonial period, the Americas (and also many regions of the Iberian Peninsula) have witnessed how states and corporations—with their armies of soldiers, private guards, administrators, and engineers—have expanded through territories as if the people who originally lived there were weeds in need of removal to make room for agricultural plantations. After periods of triumphant expansion, they shrink and sometimes disappear for good or for a few centuries, after which the subjugated resurface as if from the seeds of a burnt forest. The dynamics of human species in the *long durée* might be similar to those of plants and other nonhuman species. From there, connecting metaphors emerge such as grassroots movements or, in Spanish, *plántate*, literally “plant yourself” to mean occupying space or resurgence. In a long-term contemplation of collective human life on the planet, individual human agency dissolves, giving visibility to processes in which other species' agency or strategy can be visible. Each form of life has its own ways of being successful. In the scale of hundreds of thousands of years, human planning may very well turn out to be inferior to the planetary system's adaptive capacity.

Perceptions and institutions of time in different cultures can be also a fascinating object of research. Clocks may have contributed more to the anthropogenic crisis that we experience today than the steam engine accelerating environmental destruction (Mumford; Riechmann *Tiempo*). Furthermore, slower internal time of various colonized peoples made European colonizers judge them as lazy, which in turn served as an argument for colonization and racial hierarchies (Shahjahan). Today's neoliberal corporate time (O'Brien) leaves no room for critical and creative thinking from those expected to just work efficiently. Incrementing our efficiency at the expense of our thinking (together with stupefying infotainment that takes up our remaining waking time)

is a factor contributing to the crises of democracy and environmental destruction (Riechmann). New social hierarchies are constructed through distribution of time in which those on the bottom have none to reflect on and transform their lives, plant their gardens, cook healthy food, and talk to their children. For many, the exaggeratedly accelerating rhythms of life lead to such levels of stress that their bodies are not able to resist since corporate time and biological time do not match.

According to E. Meyerhoff et al., there are two great metaphors of time. The first is *Kronos*: the time that consumes implacably and takes life from human flesh (for example, the working time in neoliberal *maquilas* or sweatshops).⁶ The second is *Cairos*: the time that opens up circular adventure-loops providing risk-takers with special opportunities. This second time requires a rebellion against the first one, giving up the corporate time training of productivity and efficiency and stepping out to *shadowtime* (Beilin and Suryanarayanan). This is a time that Kapfhammer and Winder, in their research on fair trade production in the Amazon, conceptualize as “patches of slow disturbance.”

Different Cultures and Different Natures

In his work on Iberian environmental cultural studies, Ares-López has proposed the concept of “cultures of nature” as a way to understand the diverse modes in which humans experience their environments and engage with living beings and the nonhuman world. He defines cultures of nature as sets of material-semiotic practices (of work, leisure, care, inhabitation, and so on), which involve attentive interactions with nonhuman living organisms or inanimate matter, and which weave together cohesive ways to conceive, perceive, inter-act, and intra-act with the nonhuman world. In this way, cultures of nature produce different natures that are both historically situated and open to change, mainly because the contours of these natures (such as one that makes some humans perceive wildlife as “game,” for example) depend on the continuous actualization of material-semiotic practices (such as all those involved in sports-hunting) that change historically for different reasons. This concept draws attention to the significance of socio-environmental practices (including the corporeal skills required to perform them) for the emergence and transformation of distinct ways of understanding, feeling, relating to, and inter-acting with living beings and environments. It also explains the particular ways that different sets of material-semiotic practices put forward different understandings of life and the environment and frame them at different geographical scales (as national wildlife, global environment, private hunting reserve, village commons, and so on). In some cultures of nature, people view themselves as distinctly separat-

ed from the nonhuman world and focus on how to use nature for pleasure or natural resources for profit. Other cultures of nature, on the contrary, promote relations with nonhuman life based on affect across species' boundaries or on strong sentiments of belonging to a place or ecosystem (See Paula Ungar and Julie Premauer's essay).

Many indigenous peoples of the Americas have established distinctive set of relationships with the animals, plants, and lands that have defined their identities and ways of life for many generations. Drawing from precolonial traditions, these worlds have been particularly rich in alternative cultures of nature in which humans act and view themselves as part of the place they inhabit and as closely related to the plants and animals of the area. For example, as Marisol de la Cadena points out, for Quechua-speaking peoples, *ayllu* is at the same time a community and a place that includes human and nonhuman life. They say "I am ayllu X" rather than "I am from ayllu X" (De la Cadena). In Mexico, community bonds between people and the maize they cultivate have been particularly strong (in precolonial times, this human-plant relationship also developed with other plants such as amaranth). Similarly strong and important has been the coexistence between Yucatec Mayas and *Melipona* bees and between Andean peoples and potatoes, quinoa, and mountains. According to Eduardo Viveiros de Castro, for some of the native peoples of the Amazon, plants and animals are considered persons from cultures related to humans in different degrees. In the first colonial chronicles, European invaders were amazed by the human and nonhuman lifeforms of the New World, and American Baroque can be studied as an exceptionally self-conscious culture of nature. *Pachamama* is still today worshiped as an Earth Deity, but it is viewed at the same time as the material Earth to whom everyone owes care and protection. Contiguous ethics, known as *buen vivir* or *Sumac Kawsay*, extends human responsibility throughout the whole ecosystem. As Ungar and Premauer's essay in this volume shows, time and space extend themselves differently in each culture of nature.

Environmental Justice Movements and Solidarity Economies

Various experiments with noncapitalist economies established by utopian thinkers and revolutionaries, such as Emiliano Zapata's *Arcadia*, also had roots in indigenous environmental thinking. Today, deep environmental concerns are present in the *Zapatista* movement and other social movements for alternative economies throughout the South American continent. Since the 1990s, various Latin American communities, and some political movements (such as Citizens Revolution in Ecuador and the labor and social movements that brought Evo Morales to power), reached for indigenous conceptualizations of life to address

deprivation and disempowerment. Indigenous movements adopted Bolivian Aymara leader Takir Mamani's seek to name America *Abya Yala*, a term that comes from the Kuna language and means "land of living blood." In various indigenous manifestos, this land is visually represented as an image of South America upside down, looking like a heart traversed with the veins of the rivers (Figure 1). The image suggests a deep interrelation between human flesh and the land but not in the deterministic sense that was given to it by Heidegger. Rather, it is represented as a body or person in relationship with others, similarly resourceful and vulnerable, and requiring protection (or even rights, like in the Constitution of Ecuador). The representation of *Abya Yala* in Figure 1 is inspired by the classic political essay *The Open Veins of Latin America* by Eduardo Galeano. The upside-down positioning of the continent is also obviously disputing the role of European mapping practices as the objective and hegemonic representations of the world. In the image, South America is represented as an uprooted but still living tree that sustains the life of the continent. This tree (a frequent motif in indigenous imaginaries) symbolizes the harmonious and giving qualities of life.



Figure 1. Gabriela Podestá "América of Eduardo Galeano" (2015) inspired by Joaquín Torres García. "América Invertida" (1943). Suplemento Cultural de *La Jornada*, 26 April, 2015, Courtesy of Gabriela Podestá.

Since it was first formally defined in Lima in 1996, “solidarity economies,” based on cooperation rather than competition, have been attempting to combine social change with environmental awareness. During the first decade of the twenty-first century, solidarity economies have developed with particular strength in Brazil, Ecuador, Bolivia, and Colombia. Following the 2008 economic crisis, variations of solidarity economies also arose vigorously in Spain. In fact, the Iberian Peninsula is the European territory with the largest density of alternative economies, most of which are concerned with transforming their relations with the environment.

Vía Campesina is an international peasant organization founded in 1993 by diverse rural groups from around the world, but particularly active in Latin America. *Vía Campesina*’s teachings of agroecology are inspired by pre-colonial indigenous practices. This movement has managed to return pride and dignity to peasants as defenders of the health of the planet, healthy food production, and, ultimately, as those that feed the world. Through various allied movements (such as CONAMURI in Paraguay and *Defensa del Maíz* in Mexico) agroecology begins to spread over rural communities of the Luso-Hispanic world. *Vía Campesina*, for example, even cofounded a university focused on agroecology, from which many teachers and activists proceed to spread the knowledge of sustainable rural practices throughout the continent. In Spain, the Towns in Transition Movement, Ecovillages, communities based on local currencies, Co-ops, and the Degrowth movement are more akin to permaculture, which, notwithstanding, shares most of the agroecological principles.

Permaculture constitutes a systems approach to the environmental crisis in both rural and urban settings. It is a practice framework, worldview and movement aiming at constructing an economy that would work with nature rather than attempting to master it. Its first principle is an interactive observation of the environment that allows for a high-quality design of habitat that would conserve energy and benefit all of its members. Its biomimetic approach involves learning from ecosystems to construct one’s own. Permaculture is a model of a transdisciplinary endeavor as it connects various kinds of knowledge and know-how, such as engineering, design, construction, architecture, water management, agriculture, and nutrition as well as education, art, and narratives. Permaculture’s emphasis on whole system design is heavily influenced by the work of the ecologist Howard Odum, who represented relations between diverse ecosystems by analyzing the flow of energy between them.

In Latin America, environmental issues are among the most contentious ones with a growing citizen support. The dark side of the environmentalist activity in Latin America is the violence exerted against environmental activists and movements in this region. Well-known victims of this violence include

Chico Mendes and, more recently, Berta Cáceres. (See Christopher Kelly's essay in this volume.) The complete list, however, would be depressingly long. Almost two hundred environmental activists were killed in Latin America in 2017 (Global Witness). According to Jonathan Watts and John Vidal, "Latin America remained the most dangerous region for anyone wanting to protect rivers, forests, mountains and oceans, accounting for 60% of the global total of killings of environmental defenders even though it is home to less than a tenth of the world's population." As neoliberal politics take over Latin America, and even though "environment" and "sustainability" are frequent props of corporate discourses, violent attacks against "environmentalism of the poor" (Martínez-Alier; Guha; Nixon, *Slow Violence and the Environmentalism of the Poor*) have become a standard practice to further corporate interests in the extraction of natural resources and in pushing the frontier of agro-industry through indigenous peoples' lands and forests. With these corporate interests at stake, in just one year (2016), state security forces were behind of at least forty-three killings in Latin America—thirty-three by the police and ten by the military—while other actors such as private security guards and hitmen were responsible for fifty-two deaths (Watts and Vidal). According to Global Witness data, fifty activists were murdered in Brazil just in 2015, making this country the most dangerous for environmental activists.⁷ In Colombia, the situation has also worsened dramatically during 2017 (Watts and Vidal).

ECS pays close attention to all those processes of environmental injustice. By means of narrative and cultural-environmental analysis, ECS brings to light the violence (both abrupt and slow) in which environmental destruction and injustice are grounded as well as the structures of power and historical agencies that make them possible. The aim of ECS is not only to question dominant ways to feel, perceive, inter-act, and intra-act with the world and its beings, but also to contribute to the transformation of these ways hand in hand with the actions of new social movements. In various places of the Luso-Hispanic world, for example, new social movements are attempting to construct communities in which the concepts of justice and inclusion embrace as many lifeforms as possible, in which alternative systems of economic exchange operate successfully at a local level, and in which unconventional understandings of human flourishing and good life thrive. One of the goals of ECS is to learn about, and learn from, initiatives and experiences like these in order to enrich our connections, transformative practices, and practical solutions to real-world troubles and conflicts. Borrowing the concept from the work of anthropologists Kapfhammer and Winder, we see this process as the building of "an ontology of empowerment."

Following the ideals and goals of transdisciplinarity pointed out in the first section of this essay, this volume focuses on key socioenvironmental

and cultural-environmental issues that cannot be effectively addressed by using conventional modes of inquiry. Rather, these issues require new ways of transdisciplinary intellectual labor that traverse not only disciplinary divisions, but also the divide between academic inquiry and nonacademic forms of knowledge production. This transdisciplinary perspective is reflected in the structure of the volume: instead of ordering the essays according to the geographical area or disciplinary inheritance on which they focus, they are ordered by the socio- or cultural-environmental problems that they attempt to think through. Even though most of our essays use conceptual frameworks that are related to particular disciplines, these frameworks consistently address broad questions on the relations between human communities, the rest of biotic communities, and our common environments. For example, Prádanos's essay focuses on how to connect various humanities fields that had already worked on environmental questions, such as urban studies and energy humanities, in order to achieve a better understanding of how energy is flowing through everyday work and life, and in the configuration of narratives and perceptions. Micah McKay's essay makes us aware of how the product of human cultures' metabolisms become trash that acquires its own life and forms *sui generis* ecosystems of human and nonhuman waste. The following essay by Oscar Pérez looks through contemporary environmental film production on the landscapes of a deteriorated modernity, searching for ways forward through new social movements that attempt to recycle leftover matter. Paula Ungar and Julia Premauer attend to "landscape" from "below," applying their own ethnographic experience while participating in the negotiations of the borders of a national park in Colombia. In their vision, landscape transforms into a territory pulsing with conjoined human and nonhuman rhythms. Claiton Marcio da Silva's essay analyzes land not as a landscape or territory, but as it is formed by particular chemical components. It tells the story of how the science-driven change of the chemical composition of the soil in the Brazilian *Cerrados* has transformed human life and national culture. While Da Silva analyzes the mediating powers of nitrogen, Eduardo Molinari focuses on the mediating powers of a plant—transgenic soy—that has mutated the culture and politics of today's Argentina. Angel Polanco and Kata Beilin discuss an array of poisonous substances inscribed into toxic discourses (Buell) and that penetrate from pesticide-ridden fields into ground water and human bodies causing cancers and ailments and normalizing economies in which profit is obtained at the expense of life. Continuing on the political ecology of water, Timothy Frye talks about the destruction and repression caused by the mega-dams in postwar Spain. In their essay, John Trevathan and William Viestenz think through ecological catastrophe in Galicia, Spain, pondering on how it results from a disintegration of political governance and how this governance should

be transformed. Sarli Mercado's essay looks for solutions to the tension between the city and country that emerge from Central American poetry and art. John Beusterien's piece reminds the reader that urban territories are shared between human and animal inhabitants and problematizes their relations as they are depicted in stories from Early Modern Spain. Bécquer Seguí thinks through discourses of crisis, at once political and environmental, criticizing apocalyptic rhetoric and suggesting the need for collective action. (This essay introduces the last section of the volume focused on activism.) Michael Ugarte reflects on the story of his uncle, a well-known Spanish communist and republican fighter who became a Greenpeace activist, understanding that political progress cannot take place without changing human cultures of nature. The final essay, by Christopher Rodríguez Kelly, similarly criticizes the idea of progress as decoupled from nature and from indigenous people's cultures of nature by analyzing Berta Cáceres's death as one of many indigenous people's murders in the context of the neo-imperial patterns of today's socio-environmental struggles.

Notes

1. We dialogue here with the special issue of the journal *Ecozone* (vol. 8, no. 1, 2017), titled *South Atlantic Ecocriticism* and edited by Luis Prádanos-García and Mark Anderson.
2. For details about the neocolonial presence of Spanish businesses in Latin America, such as Repsol, Endesa, Fenosa, BBVA, and others, see *La deuda ecológica española. Impactos ecológicos y sociales de la economía española en el extranjero*.
3. Referred to as the Anthropocene or the Great Acceleration by environmental historians (Hamilton; Genenne and Bonneuil; McNeill and Engelke).
4. Our previous volume, *Ethics of Life*, published in 2016 in this same series, also dealt with questions of life ethics from a transdisciplinary perspective and focusing on a contemporary Iberian context (Katarzyna Beilin and William Viestenz).
5. These have been called, for example, *agentivities* (Müller), *vibrancies* (Bennett), or *gravitational forces* (Bryant).
6. The film *Sleep Dealer* (2008), directed by Alex Rivera, explores this issue.
7. See the graph at Global Witness, "Killings of Land and Environmental Defenders by Country in 2016," https://www.globalwitness.org/en-gb/campaigns/environmental-activists/defenders-earth/?gclid=CjwKCAiA9f7QBRBpEiwApLGUiuTYEAUfYRuy-HXvaB1Nismy4hwxusoDNXPXoEMgauVP-4UYnspE2JR0CFMQQAvD_BwE.

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