

GEOLOGICS

COMPARATIVE EPISTEMOLOGIES OF THE EARTH

December 7–8, 2018
Rhode Island Hall 108
Brown University

This symposium explores “geologics”: systems of thought that have accounted for the relation between humans and what modern scientists consider geological features (caves, volcanos) and geomorphological processes (weathering, erosion, deposition). Bringing together an interdisciplinary group of scholars, we mobilize the insights of the literary and visual arts, archaeology, anthropology, and history to excavate deep histories and sculpt speculative futures of the earth.

Friday, December 7

3 PM

OPENING REMARKS

Felipe Rojas and Jeffrey Moser

3:30–5:30 PM

PANEL 1

Thinking with Mountain-People

Felipe Rojas, Brown University

Continent in Dust: China in Aerosol Phases

Jerry Zee, UCSC

Geologic Intimacy/Physical Geology: A Core Sample from a Geologic Art Practice

Ilana Halperin

Saturday, December 8

9:00 AM

COFFEE AND REFRESHMENTS

9:30–11:30 AM

PANEL 2

What is Bedrock? Geo-Logics of Community in the Indigenous Highland Andes (Cusco, Peru)

Steven Kosiba, University of Minnesota

Picture-Rhythms of Mixing Rivers, Termite Mountains, and the Repeating Earth

Holly Shaffer, Brown University

Snail Cinema: Ecologies of Poetic Forms of Attention in the Chthulucene

Ada Smailbegović, Brown University

11:30–1:00 PM

LUNCH

1:00–2:30 PM

PANEL 3

“Upon this rock”: Medieval Attitudes to Geology

Sheila Bonde, Brown University

Sand-Spitting Stones and Blue-Green Soils: Mesoamerican Geologies

Sarah Newman, University of Vermont

2:30–2:45 PM

TEA & COFFEE

2:45–4:15 PM

PANEL 4

The Cup of Time: Fossils, Beds and “Photography” in the Early Anthropocene

Matthew Hunter, McGill University

Revelatory Sculpting: Three Iterations of a Chinese Geoaesthetic

Jeffrey Moser, Brown University

4:15–4:30 PM

TEA & COFFEE

4:30–5:30 PM

ROUNDTABLE DISCUSSION

Sponsored by the Program in Early Cultures, Hsiao Family Fund and Joseph Edinburg Fund in the Department of the History of Art and Architecture, Joukowsky Institute for Archaeology and the Ancient World, Cogut Institute for the Humanities, and Brown Arts Initiative.

OVERVIEW OF THE SYMPOSIUM

Modern science understands geomorphology as the study of the Earth's topography as formed through the intersection of climactic, hydrologic, biologic, and geologic processes. The value of thinking in geomorphological terms at this moment in the humanities and social sciences is that it focuses our attention on questions of scale. As theoretical discussions of the Anthropocene have argued, the temporal and spatial scale of geomorphological processes—the time it takes for rivers to wear down mountains or for organisms to become stone—operate outside the scope of ordinary human experience. By reconsidering classically anthropocentric questions of ethics and politics from the perspective of geological time, contemporary theorists are endeavoring to recalibrate human systems of value to the immense scales of geophysical being.

But in order to undertake this endeavor critically, we must grapple with the fact that modern geological science is itself a human construct. Although the ontological being of the earth seems to precede the human, and although it largely resists our systems of understanding, prediction, and control, the existence of the earth as an epistemological object is necessarily anthropogenic. To recalibrate human systems to the being of the earth, we must reckon that being as an object of human calibration.

This conference contextualizes the tension between the being and the knowing of the earth by exploring reckonings with geomorphology other than those of modern science. We contextualize the modern dichotomy between the natural world and human artifice by probing into what we call “geologies”: systems of thought that have accounted for the relation between humans and what modern scientists consider geological features (caves, volcanos) and geomorphological processes (weathering, erosion, deposition). Our assertion is that the humanness of the earth and conversely, the earthiness of men and women can be questioned more fully when we step outside modern geological science to explore geologies in which, for example, human beings could be genetically related to mountains and lakes, or mountains could have refined musical tastes.

The radical alterity of these alternative modes of comprehending the earth parallels posthumanism's denaturalization of anthropocentric frameworks of analysis, and thus offers productive grounds for assessing and expanding the epistemic boundaries of contemporary theory. Our challenge is finding language that knits together the fragmentary material and documentary traces of these alternative geologies without subordinating those traces to our own inherited systems of knowledge production. We are confident that thinking collaboratively and comparatively across disciplines, regions, and periods is a productive means of seeking such language.

Bringing together an interdisciplinary group of scholars with shared commitments to history in the *longue durée*, we explore some of the various ways in which traces of human practice inscribe the presence of the earth. From the exposed stratigraphy of Inka pilgrimage routes to the mineralogical revelation of Buddhas in the mountain, we investigate the dynamic ways in which geomorphology *made* sense.

ABSTRACTS

PANEL 1

Thinking with Mountain-People

Felipe Rojas, Brown University

Diverse and scattered evidence from at least the Bronze Age through Late Antiquity demonstrates that some mountains in ancient Anatolia were people. Not only were they alive, they literally behaved in human-like fashion. Some were the forefathers of kings or kings themselves. Others, though mineral, begat mountain-progeny through human-like sexual activity. Others yet had been human-people, but, for various reasons, had turned into mountains. Among the latter was at least one Christian saint. This paper reflects on the challenges of studying ancient and modern conceptions of landscape according to which some mountains were and are people. Through a series of case-studies I tackle the following questions: Who were mountain-people in ancient Anatolia? How have scholars explained Anatolian ontologies of landscape that allow for intermixing of human and mountain? What, if anything, can this evidence contribute to current discussion in anthropology and archaeology about the possibility of rethinking seemingly basic distinctions between human and non-human and, more generally, mind and matter?

Continent in Dust: China in Aerosol Phases

Jerry Zee, UCSC

As the headiest days of meteoric economic development steady into an official new normal, the Chinese government has found itself confronted with a fifty-fold increase in major dust storm events. Dust events register massive land degradation in China's inland and upwind regions as bad weather, wherein Chinese land has become a worrisome constituent of Chinese air. In the worlds forming through dust and experiments over its control, China disjoins from its territory, materializing at home and downwind as a complex parade of phases in the substantial dynamics of an aerosol process. Geology, in a dust storm, phases into meteorological concern, wherein the terrestrial solidities that bedrock modern political action and philosophy for a territorial state have given way instead to a country made and undone in economic transformation, environmental and meteorological engineering programs, and the relentless spring wind. Geology, with dusts, is a science of political and physical transformations.

This paper explores modern Chinese geology as a shape-shifting proposition for a politics taking shape through phase shifts. It moves from early modern political thought in China that likened the disorder of the Chinese socius to a sheet of loose sand, requiring the geophysical stabilizations of a modern state, figured as a cement, to several ethnographic encounters of state and sand as sites through which China's Reform and modern land must be figured through all that passes into air and all that settled out of it. The geo-logics of a continent in dust, I argue, offer a site to ground an earthy and earthly thinking in which melting into air might mean something more and less than dissolving.

Geologic Intimacy/Physical Geology: A core sample from a geologic art practice

Ilana Halperin

Almost half of my life ago in New York I was walking down the street near the now unrecognizable Bowery. There was a man selling old books on the sidewalk, laid out on a sheet. One caught my attention, a book called Volcano about volcanoes from around the world. There were volcanoes from Iceland, Hawaii, Italy, Scotland. In retrospect, every project I have ever undertaken can be traced to a picture in this book. It features the places I have gone to meet volcanoes (alive, dormant and extinct), to understand what it means to be human and rock and both at the same time.

For over twenty years my work has explored the relationship between geology and daily life. Drawing parallels between very personal events, for example when I was born or when my father died, with the birth of a volcano, has allowed for a space to think about our place within the geological time continuum from a more intimate perspective. I spend time with earth scientists and in natural history collections, in my studio and working in remote geological field environments. Within my work, I have celebrated my birthday with a volcano born the same year; boiled milk in a 100 degree Celsius sulphur spring; talked with geologists inside a lava tube inhabited by life-affirming bacteria; spent time with geology collections formed inside the body; and held the Allende Meteorite, the oldest known object in the solar system, in my hands.

To articulate a corporeal sense of geological time, I form sculptures with natural geological processes that change within our own lifespans – from high velocity calcifying springs in France to geothermal pools in Japan. New limestone sculptures formed in a petrifying cave in the Auvergne sit alongside objects submerged in the Blue Lagoon in Iceland, encrusted in fresh mineral deposits. These new geological artefacts have formed in 18 days; in a year; over 10 years. This constellation of culturally occurring landmass continues to grow. As I write this, new sculptures are growing a geological skin - Scottish limestone composed of remains from an old cement works in an Anthropocene petrifying spring on the outskirts of Glasgow.

When objects are left to rapidly encrust in new layers of stone, they become part of a unique geologic cultural alliance. Recent work brings Scottish sandstone, French limestone and Japanese and Icelandic mineral life together, to form new geological conglomerates - sculptures composed of minerals and rocks, originally from one side of the earth and the other. My work deals with geological intimacy, vivacity, and the uncanny fact that something as apparently inert and certain as stone was once liquid, airborne, ash and alive. My hope is that through merging a more daily and geological sense of time, we may begin to understand ourselves as part of a deep time continuum. We are part of a very long geological family tree. My presentation will focus on recent geologic collaborations, which aim to articulate through culture, new ways of cultivating our understanding of and relationship with our fragile ecological world.

PANEL 2

Cornerstones and Bedrock: The Geo-Aesthetics of Timelessness in the Indigenous Andes

Steven Kosiba, University of Minnesota

Scholars of ancient and modern landscapes have long been enthralled with how people move mountains and shape stones in an attempt to manifest beauty, emblemize community, and freeze moments of time in monuments. But how do stones move and shape people? This question may seem to resonate with materialist explanations old and new, whether a determinism that suggests human society is a product of its environment, or a post-humanism that seeks to decenter, but often erases, the human from the social. It may also appear to reverberate with constructivist explanations of the signs and concepts by which people may build or perceive an environment. In this paper, I suggest that these explanations are unsatisfactory for an emergent study of “geo-logics,” primarily because their focus on determinative forces, human actors, or non-human actants tends to partition the world into kinds of entity or representation, rather than flows of action. I draw on my recent historical and ethnographic research in Cusco, Peru to suggest a different way of seeing relationships between humans and the environment that recognizes a landscape in motion rather than a taxonomy of stone, plant, animal, and human bodies. For many Southern Quechua speakers stone can be a fluid substance, a speaking subject, a dividual person, a worker, and at times... a stubborn and unresponsive rock. These are not solely properties or personalities of stone, but kinds of geological agency that are contextual and contingent on situated environmental processes. Drawing on collaborative conversations with the Quechua *curandero* Ambrosio Ariza, I discuss contemporary Andean and ancient Inca interactions with the land in an effort sketch how distinct “geo-logics” might emerge from both material affordances and human perceptions of stone, specifically the bedrock. In particular, I examine how distinct flows of rock (differences in the affordances and actions of sandstone, andesite, and granite) have played roles in shaping current indigenous communities, in as much as these stones underpin people’s perceptions of environmental problems and concerns in Cusco, past and present.

Picture-Rhythms of Mixing Rivers, Termite Mountains, and the Repeating Earth

Holly Shaffer, Brown University

Do rivers, mountains, the earth bend to rhythm, or are they its constitution? In this talk, I will discuss the curious circumstance of picture-rhythms, or *tala-mala*, painted in nineteenth-century western India to personify cycles of beats. Derived from earlier musical treatises, the texts inscribed on the paintings offer little except the names and syncopations of rhythms to inspire artists. Thus the painters played with each name, beat, and tempo to make regional and imagined landscapes coterminous with nature as with art.

Snail Cinema: Ecologies of Poetic Forms of Attention in the Chthulucene

Ada Smailbegović, Brown University

Time is not experienced evenly by living organisms. As the ethologist Jakob von Uexküll writes, a moment or “the shortest segment of time in which the world exhibits no changes” varies in duration wildly between different species so that while “a human moment lasts one-eighteenth of a second” “the perception time of the snail takes place at a speed of between three or four moments a second”

(52, 72). In other words, if one were to make “snail cinema” one would have to take this difference in the experience of time into account in order to generate a sense of a representational space that would move at an accurate pace. This variegated sense of time between organisms is further complicated by the sense that “physiological time” is a compound entity of other variables such as temperature, so that developmental processes, such as egg hatching or pupation, are literally sped up and slowed down by the temperature at which they occur. One of the consequences of climate change is that such microtemporalities, which have emerged through coordinated evolutionary rhythms, can fall out of synchronization: a boundary of a forest may move northward leaving some of its inhabitants behind, larva may hatch out of eggs before the leaves on which they feed have emerged from their buds, flocks of birds may abandon their migration patterns never returning to their usual nesting grounds. This paper will theorize how poetic forms of attention may allow us to sense such microtemporalities of change, which directly affect non-human organisms but are often unfolding at non-monumental rhythms of time imperceptible to the human sensorium and are thus often missed by the more teleological and monumental temporalities of ecological catastrophe associated with the Anthropocene.

PANEL 3

“Upon this rock”: Medieval Attitudes to Geology

Sheila Bonde, Brown University

This paper will examine the varying attitudes toward the use of stone in foundations and standing walls in medieval church construction. Despite scriptural and contractual exhortations to situate buildings upon bedrock, in fact, archaeologically confirmed foundations reveal that various foundations solutions were used. (The evidence for foundations is limited, given the relatively rare instances where walls have been excavated to the base of their foundations.) While the visual effects of local stone is celebrated in modern descriptions, here too the evidence reveals a different picture. Petrological analysis allows us identify numerous instances in which stone is quarried far from the building site. In addition, walls were most often covered with plaster and then, ironically, decorated with a pattern of false joints. I will bring together archival, material and archaeological evidence to investigate the varying medieval attitudes to stone.

Sand-Spitting Stones and Blue-Green Soils: Mesoamerican Geologies

Sarah Newman, University of Vermont

In Mesoamerica, ancient hieroglyphs marked fertile soils by depicting their pungent smell. Colonial-period pictorial cadastral records illustrated land qualities using stones pierced by spines or rocks sitting atop reed mats. Contemporary interviews with traditional agriculturalists yield qualifiers for productive soils as “warm” or “blue-greenish.” Such descriptors do not easily accord with the ways that soil scientists, geographers, anthropologists, and archaeologists usually understand geological processes, despite a long and ongoing history of efforts to equate “folk” categories with established soil classification systems. In this paper, I examine Mesoamerican (mostly Nahuatl and Mayan) depictions and descriptions of lands and soils in hieroglyphic texts and pictorial codices, chronicles and dictionaries, and 20th and 21st-century ethnological studies to offer two counterpoints to that common practice in ethnopedology. The first is that “natural” (i.e., non-cultural) soils are rare in Mesoamerican classifications. This precludes some of the fundamental tenets of modern soil science, including distinctions among, for example, histosols (formed organically), anthrosols (formed by humans), and arenosols (formed from sands). The second is that by thinking in terms of comparison, rather than translation, engagement with Mesoamerican geologies might incite soil scientists, geographers, anthropologists, and archaeologists to reconsider our own classifications in the time of the Anthropocene. Somewhere between the universalism implied in trying to match indigenous categories to international standards and the radical relativism or multiples worlds of the ontological turn, Mesoamerican taxonomies offer subtle understandings of variation in land and soil as both products and agents in human interactions with the earth.

PANEL 4

The Cup of Time: Fossils, Beds and “Photography” in the Early Anthropocene

Matthew Hunter, McGill University

Beds, bottoms and grounds: all were central to the imagining of fossils by leading British geologist of the 1790s, James Hutton. Against contemporaneous catastrophists, Hutton’s planet was a study in paradoxical stability. Altered profoundly by natural forces, the earth’s apparent deterioration was also offset by constant, if unseen, regeneration. And in place of the charismatic survivals of deep time as seen by his geological predecessors, fossils were important for Hutton not as singular messages, but as plural masses of materials from which life has been and can be remade infinitely. “At a gross computation,” so Hutton argued in his *Theory of the Earth* (1795), “there may be a fourth part of our solid land composed from the matter that had belonged to those [fossilized] animals. Now, what a multitude of living creatures ... must have been required for producing a body of calcareous matter which is interspersed throughout all the land of the globe, and which certainly forms a very considerable part of that mass!” Hutton marvels at his predecessor’s “natural monuments” crushed, parceled, circulated back en masse into a terrestrial economy whose temporality is without bounds. “Time,” as Hutton puts it, “is to nature endless and as nothing. The progress of things upon this globe ... cannot be limited by time, which must proceed in a continual succession.”

This paper explores the analytic potential of bed, bottom and ground to reconsider the well-worked figure of the fossil in the history and theory of photography. I focus on the notion of the “cup of time” advanced in unpublished manuscripts by Thomas Wedgwood (1771-1805), youngest son of industrialist Josiah Wedgwood. Situating the younger Wedgwood’s temporal conceptions amidst his extensive chemical training and the relentless, geological investigation of soils’ at his father’s Etruria manufactory, I show how countering the standard reading of Wedgwood as “first inventor” of photography implanted by William Henry Fox Talbot since 1839 reopens a repressed history of research binding the combustion of fossil *fuels* to the making of photography’s “fossil ontology.”

Revelatory Sculpting: Three Iterations of a Chinese Geoaesthetic

Jeffrey Moser, Brown University

Throughout the long history of stone sculpture in China, we witness repeated expressions of a normative aesthetic premised on the idea that good sculpture reveals the internal structure of the stone from which it is shaped. This paper examines three manifestations of this “geoaesthetic,” in Neolithic jade *bi*-discs, medieval rock-cut Buddhist sculpture, and late imperial scholars’ rocks. In each instance, the exposure of the stone’s internal structure created distinctive meanings depending upon the discursive and material contexts in which the sculpting occurred. And yet the appeal of sculpture as a mode of revelatory practice—as a mode of revealing that which the weathered surface of the stone conceals—remained consistent. By privileging revelation over representation, this underlying and consistent aesthetic coheres stone and sculptor in a manner that inhibits their incorporation into frameworks of subjectivity, agency, and relationality. In so doing, it gestures toward a mode of acting in and as the world that refuses the tension between human and nonhuman beings. By articulating the mechanisms through which this refusal operates, I aim to show how the revelatory geoaesthetics of premodern Chinese sculpture encourages reconsideration of the Anthropocene as a worthwhile figure for environmental concern.