

## Half-plenary Roundtable: Elemental Empathies

Time: Thursday, 22 June, 11.00-13.00

Place: University Main Building, room: 117

### *Participants*

Bruce Clarke, Department of English, Texas Tech University

Phillip Thurtle, Comparative History of Ideas, University of Washington

Tyler Volk, Department of Biology, New York University

Louise Whitely, Medical Museum, University of Copenhagen (Chair)

### *Abstract*

As of May 2017, the current issue of *Theory, Culture & Society* is a special number on “Geosocial Formations and the Anthropocene.” The hybrid category of the “geosocial” names a version of what we are calling “elemental empathies” between material geological and biological formations and the conditions of human possibility. This panel explores multiple facets of elemental resonance among material, corporeal, and human ontologies. For Tyler Volk, “combogenesis” describes an elemental metapattern extending all the way from the emergence of attractive forces within the simplest physical particles to human cultural systems. Phillip Thurtle discusses geneticist Curt Stern 1954 article “Two or Three Bristles,” which asked, how could identical genetic processes create organisms as different as flies and humans? For answers, Stern turned to the elements: the key to differences in being between flies and humans, it turns out, is in their differing relationships to moisture. Finally, Bruce Clarke moves beyond an earlier focus on Gaia as “the sum of the biota” to view the interrelation of biotic with abiotic realms. Rather, all events within Gaia’s geobiological bubble are submitted to systemic contingencies of coevolutionary couplings between matter and life. Considered “geosocially,” from the Earth’s perspective, human beings are fundamentally Gaian beings.

#### 1. Tyler Volk, “Things, Relations, and Combogenesis”

Empathy as a form of bonding is crucial to human social relations. Bonding as an elemental metapattern extends from human cultural systems all the way down and back to the emergence of attractive forces within the simplest physical particles. In this talk, I make a case for a logic that defines these fundamental levels as they are nested in things and their relations. In this logic, a rhythmic process I call combogenesis links the progression in time from simple to complex, as smaller things on each prior level combined and integrated into new, larger things on each next level (*Quarks to Culture*, Columbia UP, 2017). Key to this sequence are the innovative relations at each level, which enabled the new things to interact and create subsequent, additional levels. These levels are: the fundamental quanta, nucleons (protons, neutrons), atomic nuclei, atoms, molecules, prokaryotic cells, eukaryotic cells, complex multicellular organisms, animal social groups, tribal metagroups, agrovillages, and geopolitical states. A further case will be made for three basic dynamical realms: physical laws, biological evolution, cultural evolution. Two of these realms are “evolutionary,” in that they operate with processes of propagation, variation, and selection. Thus it is possible to see human bonding relationships as rooted in shifts in types of bonding that went from physics and chemistry, to living things at various scales, and then into human cultures.

### 3. Phillip Thurtle, “Liquid Love: Flies, Forms, Feelings and the Importance of Moisture”

In a strange masterpiece of popular science, the 1954 article “Two or Three Bristles”, the geneticist Curt Stern argues for the importance of “responsive genes”. All parts of an animal have similar genes, contends Stern, yet these parts can look and act very differently. There must be something then that turns genes on and off at different times in the body; they must be regulated. Stern also carefully regulated his feelings toward the fruit flies that he studied so that he could make his argument. In his article, he strategically vacillates between identifying with their biological processes, common amongst all animals, and a fascination with their sleek alien forms. How could identical processes create organisms as different as flies and humans? What was the key to how the development of these bodies were regulated? In answering these questions, the geneticist turns to the elements before he turns to genetics. The key to the difference of how flies and humans inhabit the world is in their relationship to moisture. The small size of the flies means they need an exoskeleton to wall them off from the world to protect their moisture. The large size of humans, on the other hand, allowed them a responsiveness to the world expressed through moisture, as denoted by the sheen of liquid on one’s lips or the tears in one’s eyes. Stern’s paper reminds 21<sup>st</sup> century scholars that not all geneticists were determinists and that something as insubstantial as liquid can link materials to forms in living things.

### 3. Bruce Clarke, “Gaian Being”

Gaia theory can be further developed through a theory of cognitive systems that couples biological dynamics to non-biological modes of operation. This metabiotic description of Gaia’s particular complexities moves beyond a sole focus on “the sum of the biota.” With an eye on Darwin’s own biotic bias, Lovelock has recently articulated this wider-angled vision of Gaia: “organisms and their environment form a coupled system . . . what evolved was this system, the one that we call Gaia. Organisms and their environment do not evolve separately.” All events at or on Earth’s surface are submitted to this fundamental Gaian contingency, what has recently been termed the “Gaian bottleneck” through which, to maintain its viability on any given planet, the continuation of life must pass. However, humanist scenarios of personal autonomy still resist this formulation of Gaian being, this logic of material contingencies, or, as we are calling them today, elemental empathies. Contrary to the holistic bent of much previous Gaia discourse, that logic does not state that all things planetary are “parts of one great whole,” but rather, that the Gaian system is externally bounded, that is, operationally self-referential in the final instance, while internally differentiated all the way down. The discourse of autopoiesis in its full neocybernetic development, from which this formulation of differentiated self-reference derives, can help us to compose the recursive geobiological participation of selected Earthly and living elements in the coevolutionary coupling of matter and life.