

Paper summary

Living artefacts as organizing Growing living root bridges

Rethinking the relationship humans have toward living entities is a major contemporary challenge. Living artefacts are an exemplary category to reflect upon such a relationship. Living artefacts are living things intentionally brought to existence by human design intervention, in order for them to have certain properties and new functions (Siipi, 2003). Nevertheless, the uniquely human agency driving the evolution of ‘living things’ seems to forget important aspects related to the agentic forces of natural entities. Living artefacts are alive, and thus endowed with agency. The morphogenesis – lit. ‘the generation of form’ – of living artefacts is then the result of a relationship of humans vis-a-vis other non-human entities that can be read as an *organizing process* (Weick, 1969).

The purpose of this paper is to analyze the process shaping living artefacts as a case of organizing, involving multiple heterogenous agents, both human and non-human. Such a perspective shift is challenging on two complementary levels. First of all, it aims at offering theoretical means to ‘read’ the process shaping living artefacts, grounding and enlarging the definition of *organizing* (Weick, 1969) from a human-only perspective to one including non-humans. Secondly, it critically reflects on the methodologies needed by researchers to see the ‘point of view’ of non-human entities involved in this organizing process.

Rethinking living artefacts in terms of organizing can help in revealing the complex dynamics occurring between humans and non-humans while shaping them. A classical definition of *organizing* is ‘the resolving of equivocality in an enacted environment by means of interlocked behaviors embedded in conditionally related process’ (Weick, 1969, p. 91). In Weick’s words, the organizing process is based on the reduction of equivocality in terms of information: human agents try to make sense of the environment they dwell (Whiteman & Cooper, 2011), enacting processes and practices that allow them to do things they would not be able to do alone. The limit of this definition lays in the fact that humans are considered as the only actors in these organizing processes. The perspective shift I propose here is to extend such a definition from a set of homogeneous agents – humans – to a heterogeneous population that sees humans and non-humans organizing in giving shape to living artefacts. Living root bridges of the War populations of Meghalaya, in North-eastern India (fig. 1) are an emblematic example of living artefacts to illustrate such perspective shift as they are shaped by an ongoing organizing process between humans and plants. In this sense, living root bridges will be the trigger to discuss an extension of such a definition: in which environment do plants and Wars dwell in and how do they enact it? How do they resolve equivocality in the information exchange between them? What are the key interlocked behaviors between plants and Wars occurring in a living root bridge shape development? How are these interlocked behaviors conditionally related processes? These are the questions I will try to answer through this paper.



Figure 1 - A living root bridge grown in the East-Khasi Hills, Meghalaya, India. Photograph by the author.

The paper is structured as follows. First, I will report the current debate about living artefacts, showing how the artificial can be read as a continuous graded property of *artefactualness* (Sandler, 2012) and why living root bridges are a case of emblematic living artefacts to be studied in this context. Then, I will offer a theoretical framework of the interactions between human and non-human entities to read the ecological dynamics of shaping as *organizing*. Grounding on the notion of *Umwelt* (Uexküll, 2010) and the theory of affordances inaugurated by Gibson (1979), interlocked behaviors organizing humans and non-humans will be read in terms of stigmergy (Grasse, 1959) in an extended way. Afterward, I will present the case of living root bridges critically reflecting on the methodological challenges faced to reconstruct humans and plants' perception of their *Umwelten* and of the key affordances needed for the organizing generating the ever-evolving shape of living root bridges. Subsequently, I will discuss upon limits and advantages of such an organizing perspective shift, adopting the theoretical frame of an 'extended stigmergy' as 'a consensually validated grammar' (Weick, 1979, p. 3) to read organizing between humans and non-humans. To conclude, I will stress how living artefacts read as the result of an organizing process points to a different view of the relationship between humans and the other entities in their environment in terms of mutually interlocking behaviors. This view challenges the human-centric perspective on the morphogenesis of living artefacts, and indeed the broader perspective on organizing phenomena as uniquely human.