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## Sympoiesis

Recently, the debate on the relationship between complexity and ecological crisis has been enriched by the concept of “sympoiesis”, elaborated by the Canadian ecologist Beth Dempster (2000). The word derives from ancient Greek and consists of a suffix, *συν*, meaning “with”, and a noun, *ποίησις*, that is “activity”, “making”. Literally, sympoiesis means “making with”. Dempster formulated the concept of sympoiesis in generative friction with the model of autopoiesis, theorized by Humberto Maturana and Francisco Varela (1980), in order to offer an alternative heuristic tool for conceptualizing all the systems which do not present clear and definite boundaries and that, nevertheless, have a proper identity, such as ecosystems and natural-cultural systems. In these systems, the heterogeneity and complexity of their components challenge traditional analytical tools, especially those which insist on the importance of boundaries, as in the case of autopoietic theory. As Dempster puts it,

sympoietic systems recurrently produce a self-similar pattern of relations through continued complex interactions among their many different components. Rather than delineating boundaries, interactions among components and the self-organizing capabilities of a system are recognized as the defining qualities. “Systemhood” does not depend on production of boundaries, but on the continuing complex and dynamic relations among components and other influences. The concept emphasizes linkages, feedback, cooperation, and synergistic behaviour rather than boundaries (2000, p. 4).

From this perspective, sympoiesis, as a concept, intends to develop Maturana and Varela’s work (1980), which distinguished between two different kinds of systems, by analysing the degree of their organizational closure within them, namely allopoietic and autopoietic systems. Allopoietic systems are

defined as non-living systems whose main feature is that their internal organization depends on external causes. On the contrary, autopoietic systems, such as cells and organisms, are living systems which are organizationally closed, that is, self-organizing and self-making. Following the classic definition given by Maturana and Varela, an autopoietic system is a system “organized (defined as a unity) as a network of processes of production, transformation and destruction of components that produces the components which: (i) through their interactions and transformations regenerate and realize the network of processes (relations) that produced them; and (ii) constitute it as a concrete unity in the space in which they exist by specifying the topological domain of its realization as such a network” (1980, pp. 78-79). Therefore, autopoietic systems could be defined as autonomous, individual, self-referential living systems.

In this context, the main conceptual contribution the concept of sympoiesis has introduced is the possibility of thinking of organization not only as the result either of external forces or of internal ones, but as the result of a dynamic interplay between them. This shift in thinking organization is not confined to the natural sciences realm but has important ethical and political consequences. In fact, according to Dempster (2007), natural systems have traditionally been understood through reductive and organicist lenses, which have applied a boundary logic to manage their complexity. However, relying on boundaries enables separation of a system from its environment, promoting a tendency to disregard all the complex relationships that make up the environment as irrelevant. In this sense, introducing organizationally ajar systems permits to blur a clear-cut splitting between the system and the environment and to conceptualize hybridity and heterogeneity as relevant features of complexity. Therefore, it comes out that thinking without boundaries is a way of overcoming both the economic and anthropocentric logic that pervades ecology theory and practice.

The features of heterogeneity and complexity that the concept of sympoiesis emphasizes have been recently quoted and engaged with by Donna Haraway (2016) in her effort to overcome the human exceptionalism that permeates the Anthropocene master narrative. Far from having only one main character, such as one finds in the stories of the Anthropocene and Capitalocene, her proposal for Chthulucene sympoietic stories affirms complex worldly entanglements and assemblages that are generally neglected or subsumed. It is not simply the Anthropos that did it all, but a multiplicity of bacteria and critters who make up the world (Margulis & Sagan 2002). These multispecies stories cannot be told adopting traditional mimetic and organicist narratives, they need to be told differently: “It matters what matters we use to think other matters with; it matters what stories we tell to tell other stories with; it matters what knots knot knots, what thoughts think thoughts, what descriptions describe descriptions, what ties tie ties” (2016, p. 12).

Thus, such as in the presentation of the rhizome by means of the wasp-orchid relationship image given by Gilles Deleuze and Félix Guattari (1987), sympoietic stories aim to unveil the moment in which indiscernibility is not reduced to identity. Criticizing the mimetic and reductive visions of evolution that employ this image to prove a functionalist and teleological paradigm (cfr. Ansell Pearson 1999), Deleuze and Guattari wrote that the wasp and the orchid do not form an organism, they are not functional parts of a greater whole which subsumes them, rather they are in a relationship of differential becoming:

The line or block of becoming that unites the wasp and the orchid produces a shared deterritorialization: of the wasp, in that it becomes a liberated piece of the orchid’s reproductive system, but also of the orchid, in that it becomes the object of an orgasm in the wasp, also liberated

from its own reproduction. A coexistence of two asymmetrical movements that combine to form a block, down a line of flight that sweeps away selective pressures. The line, or the block, does not link the wasp to the orchid, any more than it conjugates or mixes them: it passes between them, carrying them away in a shared proximity in which the discernibility of points disappears (1987, pp. 293-294).

In a similar vein, Carla Hustak and Natasha Myers (2012), drawing on the work of Deleuze and Guattari, focus on the *involutionary momentum* of this relationship, amplifying the playful, creative and affective dimensions of the encounter between plants and insects. Engaging with these aspects, which are not recorded by the evolutionary memory, permits working “athwart” to the dominant functional and economic logic of ecology, restoring other narratives of the natural world and multispecies relationships. For Hustak and Myers, this is a way of elaborating alternative affective ecologies, “in which ecological niches and the milieus that contour the gaps between bodies teem with energies, affects, and propositions” (2012, p. 105).

Following this path, sympoiesis is a way of seeing the world that overcomes the idea of organismic unity, while producing a shift in the direction of an entangled ontology (Barad 2007). If traditional ontologies have ordered the existent by adopting anthropocentric lenses and resorting to a binary logic that foregrounds human agency only, a sympoietic approach has the potential to restore multiplicity. Sympoietic stories, then, concern the critters that comprise the world, disaggregating and diffracting the human exceptionalism that permeates our narratives. Hence, sympoiesis is not merely about defining a system (may it be natural or not) as sympoietic. It is rather about elaborating a different way of engaging with the existent, becoming-with the multiple, heterogeneous, and amorphous agencies that de/compose it.

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