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Ochoa-Aria, Alejandro, Jerardino-Wiesenbor, Bruno and Paucar-Caceres, Alberto  (2022) Maturana's Ontology of the Observer and Cultural Biology: Understanding the Organization of Living. Constructivist Foundations, 18 (1). pp. 23-25. ISSN 1782-348X

Publisher: Vrije Universiteit

Version: Accepted Version

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Maturana's Ontology of the Observer and Cultural Biology: Understanding the Organization of Living

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Abstract: We focus on: (a) the implications of the ontology of the observer and the role of language as a type of structural coupling that opens up the idea of cultural biology as the final statement upon which Maturana relies to account for the dynamic of the human being as a living (cognitive) system; (b) the identification of some insights through the concept of structural coupling; and (c) the possibility of extending Maturana's ideas to other fields of knowledge, as suggested by Capra.

Introduction

1. Our main motivation behind this paper is to complement and enhance Fritjof Capra's "The Organization of the Living: Maturana's Key Insights," a fair and useful account of the philosophical implications of Maturana's work developed in the 1970s and earlier 1980s. In the late 1980s, Maturana incorporated his earlier ideas into a more extensive, comprehensive and sophisticated onto-epistemological framework that encapsulates his theory of the Ontology of the Observer (OoO, Maturana 1988b). In the following paragraphs, we will attempt to complement Capra's account by reflecting on Maturana's OoO and concentrating on four of Capra's sections: Biology of cognition; Structural coupling; Bringing forth a world; and Autopoiesis beyond the molecular level.

Biology of cognition

2. In §14, Capra indicates that Maturana's new conception of the nature of mind "[...] overcomes the Cartesian division between mind and matter that has troubled philosophers and scientists for centuries." Although we agree with this assessment, from the perspective of Maturana's OoO, we argue that beyond challenging the mind–matter dichotomy, Maturana's insights constitute a sort of Copernican turn concerning the role that knowing plays in biology and, consequently, the recursive construction that the deployment of a biology of cognition (BoC) supposes. In our view, Capra's assessment does not include the consequences of the development of OoO, which led to Maturana's proposed cultural–biology concept in which the biological and the cultural constitute separate domains of distinctions according to different human concerns that still exist as inseparably interweaving dynamics (Maturana & Dávila 2015). In order to fully consider the nature of this turn, we suggest that an exploration of the consequences of OoO could support and further complement the issue of Capra's mind–matter dichotomy. This dichotomy, incidentally, only becomes problematic when we consider it from a transcendental-ontology position, since according to Maturana, a *transcendental ontology* is just one way of considering knowledge. Instead, Maturana advocates the path of *constitutive ontologies* as a way of distinguishing when considering the point of view of the observer. He has described the two basic explanatory paths as fundamental ontological domains in his widely cited "ontological diagram" shown in Figure 1.

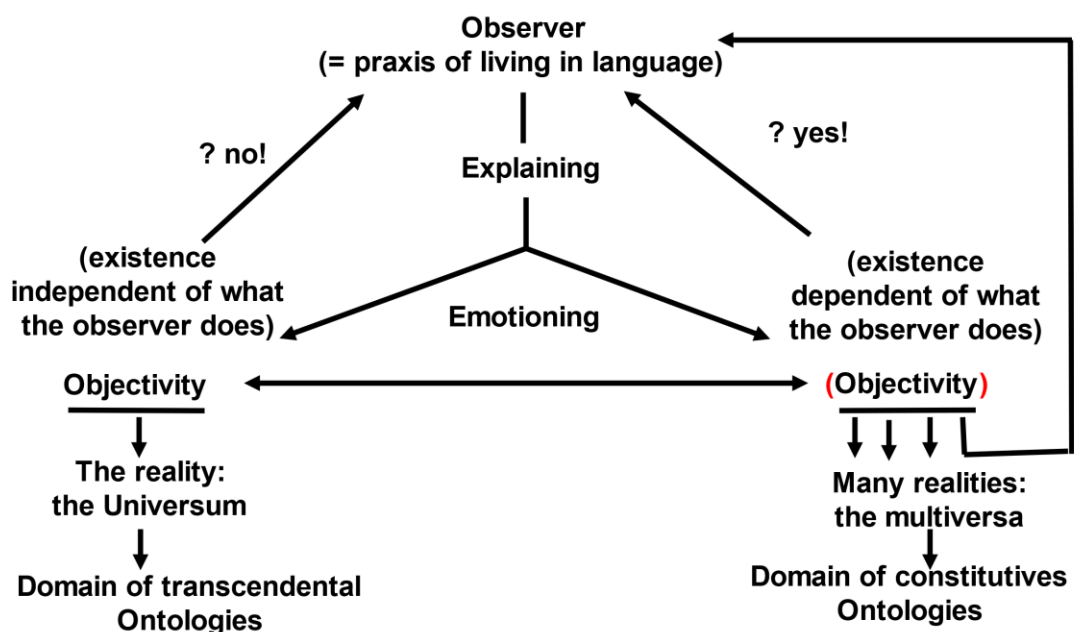


Figure 1: Maturana's ontological diagram (Maturana 1988b: 32).

Structural coupling

3. In §35, Capra indicates that according to Maturana “[...] a structurally coupled system is a learning system.” Yet, to fully understand the power of the structural-coupling concept, we might ask: What does a learning system mean?; and What does it imply for human beings? We argue that although Maturana’s conceptual framework on living being centres on structural coupling (the continual structural changes while preserving the patterns of organization of living networks such that it preserves itself as a living system), we need to emphasize that in the case of human *beings*, one of those structural couplings is language. Hence, the notion of structural coupling becomes specific to human beings as a species and also as a cultural lineage. A human being is capable of making sense of her own perceptions and of explaining them to others. It is precisely in language that a very particular type of structural coupling occurs. Knowing is the ever-changing result of structural coupling. At the same time, it is the ability to “account for” (through the operation of distinction), or to make sense of what happens and explain experiences (in any given domain). In keeping with Maturana’s constitutive ontologies, language facilitates explanation and debate about experiences (as possibilities among others). We consider that this is crucial for understanding (from the perspective of OoO), that what science does is to explain experience and not “the reality” (as depicted in Figure 1).

4. What is innovative in Maturana’s account of the constitutive ontologies (and not highlighted in Capra’s account) is the provision for a continuity between human beings and any other living system, driven by structural coupling. In this context, a living being responds to any disturbances in its ontogenetic drift and simultaneously opens up the framework for a *cultural* world. As a closed network of conversations that a human community generates, this cultural world “carries out” and “conserves” (Maturana & Dávila 2015). This is possibly the radix of the most basic interactions that are transforming and reconstituting us as biological–cultural beings. It might also explain how we have become what we are; in this now that we are.

5. The insight that this explanation is now centred on the condition of possibility that unfolds from the corporeality of the human being (through an account of itself according to what has been biologically–culturally constructed as species and as observers), clearly refers us to the continuity of mind and matter. Neither mind nor matter is an entity, but each is rather an explanation that the observer has been elaborating (through the network of scientific and systemic thought). Perhaps, rather

than expanding the idea of autopoiesis towards other scientific disciplines (Maturana refused to use it beyond biology), what is worth examining is the extent to which language (that has allowed us to understand the organization of human life), can also facilitate space for further research. This would be to explore how the human being unfolds her life *before* others, *with* others and essentially, according to Maturana (1988b), in the practice of the foundation of the social as Maturana conceived it. This is the practice of interaction from the emotion of love, understood as “[...] the domain of those relational behaviors through which the other arises as a legitimate other in coexistence with oneself” (Maturana & Verden-Zöller (2018: 223).

6. Studying language in its role of bringing forth a world with others provides us with a framework for the comprehension of how human beings coordinate actions with others. This framework could be useful for understanding human organizations as structural couplings. These structural couplings would allow us to explore the appropriateness of organizational settings in their own ecological niche and to grasp the cultural paths upon which the praxis of living could be considered to be driven by a willingness (or not) to become a social system. As Maturana affirms –

“[...] we human beings participate in many different communities that are constituted under different emotions as different networks of conversations that, although independent as domains of co-ordinations of actions, affect each other through the intersection of their realisations in our bodyhoods.” (Maturana 1988a: 70)

Bringing forth a world

7. In §47 and §49, Capra discusses biology of cognition and the relationship between mind and brain. As we understand it, Maturana has never referred to these two elements as separate. In our view, OoO establishes that what we call “reality” cannot be identified as observer-independent. At the same time, it states that the observer is the necessary constitutive condition for claiming the existence of anything. Also, what we call “real” emerges as an interaction between an observer and an environment in a recursive and recurrent dynamic. Maturana calls this the praxis of living in language (Maturana 1988b: 27). In other words, what we call “reality” is constituted by what the observer as a living system does, and what we name as “knowledge” results from the operations of distinctions that arise in the praxis of living in language. Consequently, OoO recognizes the observer as a living system who lives in a multiverse. Maturana defines a multiverse as –

“[...] many different, equally legitimate, but not equally desirable, explanatory realities, [in which] an explanatory disagreement is an invitation to a responsible reflection of coexistence, and not an irresponsible negation of the other.” (Maturana 1988b: 32f)

8. Capra, in §59, does not fully explain Maturana’s contribution to the understanding of mind and matter (body) and how these notions are unified. Indeed, Maturana (1988a: 6) distinguishes two disjunct domains from the OoO: the domain of explanation and the domain of the explained. In the domain of explanation, mind and body are shown separately and from transcendental ontologies both notions are signalled independently of the observer. This exemplifies the Cartesian perspective, since it is intended to account for the thing in itself and there is no way to unify them. However, from the perspective of constitutive ontologies, an explanation does not replace what is explained, since they belong to a domain different from that of experience (Maturana 1988b: 30). In constitutive ontologies, an explanation is a generative mechanism that accounts for the experience and not for the thing itself or “the reality. We bring forth the existing in our operating as observers in describing and explaining our living from an epistemological substrate that Maturana calls unitary epistemology:

“[W]e exist in the unity of what our explanatory history has separated and separates to bring together and evoke, again, in the non-analytical understanding of the unity of the consciousness of our living in the cosmos that arises when explaining our living with our living.” (Maturana & Dávila 2015: 279, our translation).

Autopoiesis beyond the molecular level

9. In §57, Capra encourages the exploration of “the extensions of the concept of molecular autopoiesis to the cellular, social, ecological, and planetary levels.” This is a fair and possibly justified call. Maturana and Francisco Varela’s work on the nature of the living, and the biological nature of cognition and knowledge (Maturana & Varela 1980, 1987; Maturana 1988a, 1988b, 1997) has had a far-reaching influence on systems theory and various other fields (Mingers 1995: 1–3). However, despite Maturana’s own view that autopoiesis relates only to living systems, the theory of autopoiesis seems to have acquired the status of a general systems theory (Jackson 2000, cited in Reynolds 2004). In our own research, we have been extending the use of Maturana’s ideas in the field of management sciences/operational research (MS/OR) to inform and complement organizational studies in MS/OR practice. Paucar-Caceres & Jerardino-Wiesenborn (2019) argue that, for example, Peter Checkland’s Soft Systems Methodology (SSM) and Maturana’s OoO feature sufficient paradigmatic similarities to make a case for developing a bridge between these two approaches. Briefly, SSM is a systemic-based

methodology that aims to develop accommodation between stakeholders' different (and sometimes conflicting) perspectives in a problematic situation. We argue that some of Maturana's ideas (structural determinism, structural coupling, and organizational closure) can be grafted into the phases of Checkland's SSM seven-step learning process to enhance and expand understanding of the SSM application process. In Jerardino-Wiesenborn, Paucar-Caceres & Ochoa (2020), we revisit Checkland's SSM learning process through a conceptual framework grounded on Maturana's OoO. The argument is that the SSM learning process can be enhanced, for instance, when it is regarded as a *structural coupling* process.

10. We agree with Capra's call for researchers to extend Maturana's insights into other scientific disciplines. However, in addition to expanding the idea of autopoiesis to other instances from the dimension elaborated by Maturana himself, what seems appropriate is to explore the extent to which the language that enabled us to understand the organization of life is capable of providing us with the means to explore the way in which a human being unfolds her life before others, with others and, essentially, in the practice of the possibility identified by Maturana as the foundation of the social, the practice of interaction from the emotion of love. Maturana argues that emotioning is at the base of all our actions in the praxis of living. The emotion of mutual acceptance (love) in Maturana's onto-epistemology is explained as a biological phenomenon. Indeed, Maturana speaks neither of feelings nor of kindness when referring to love:

“I speak of the emotion that specifies the domain of actions in which living systems coordinate their actions in a manner that entails mutual acceptance, and I claim that such operation constitutes social phenomena.” (Maturana 1988b: 63f)

Furthermore, he states that –

“when love is denied in the attempt to give a rational fundament for all our relations and actions, we dehumanize ourselves, becoming blind both to ourselves and to the other.” (Maturana, Paucar-Caceres & Harnden 2011: 306)

Conclusion

11. It is paramount to emphasize the value of *constitutive ontologies* and the role played by language as a mechanism upon which a unitary epistemology emerges. When we consider the human being as a unity based on the recursive relation of biology and culture, languaging emerges as the ground upon which human beings learn. This languaging allows us to bring forth a world and to build up coordinated actions of coordinate actions in a recursive loop of learning. It is clear that to comprehend human

organizations from such learning, their milieu and the associated knowledge could be grasped as a structural coupling that demands new frameworks for understanding.

Funding

No external funding was received while writing this manuscript

Competing interests

The authors declare that they have no competing interests

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Received: 14 July 2022

Revised: 2 September 2022

Revised: 10 September 2022

Accepted: