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Habeas Corpus: the ins and outs of autopoiesis

Open Peer Commentary on: "Are living beings extended autopoietic systems?"

By Villalobos, M. and Razeto-Barry, P.

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## *Habeas Corpus:* the Ins and Outs of Autopoiesis

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Though my motives may differ somewhat, I agree with the target article Villalobos and Razeto-Barry (VR; 2019) in rejecting the tentative claims of Virgo, Egbert and Froese (VEF; 2011) and others that the relevant boundaries for autopoietic systems may extend beyond their *physical* boundary. I appeal to a *habeas corpus* principle: the boundary that matters is that which allows an individuated self-maintaining entity to survive transfer from one environment to another.

A scientific framework should (a) be well-defined, consistent and non-self-contradictory, but also (b) usefully carve the phenomena of study at its natural joints, enabling predictions such as 'if we change *this*, what happens to *that*?' For me, the best candidate version of autopoiesis is that which carves the boundary between the *physical* body and its environment; an asymmetric split in which the body is *individuated* (we can give it a name) but the environment is *generic*. The legal writ of *habeas corpus* requires the authorities to bring the physical body of the prisoner from the jail to a public courtroom; the prisoner survives this change of environment with identity preserved. A company, though often legally considered a person, has no such body.

VEF's concern is why or how one should differentiate between those homeostatic feedbacks within and those outside the body. This reflects the 'extended mind' confusion (Wheeler, 2012): the search for alternative answers, beyond "boundaries of skin and skull", to the question "where does the mind stop and the rest of the world begin?" (Clark & Chalmers, 1998). But that question is badly formed. Mind and cognition are relational entities, they refer to the relationships between subjects (agents) and objects (matters of concern to the agents). It makes no more sense to talk of physical location of such a relationship than asking "where is the East Pole" or "where is the property of being-a-twin located". Brains and bodies have locations, minds and cognition do not.

I agree with both VR and VEF that autopoietic theory has used ambiguous terms, has been open to different interpretations of the line between *inside* and *out* — since any boundary choice still leaves some transport of material, energy, cause and effect across it. A choice defines a subject inside a world of objects and hence defines what counts as cognition. But where to choose? Defining in terms of homeostasis alone is too low a bar, since any domain of overlapping causal circuits allows countless ways to carve out homeostatic sub-systems; identifying negative feedback circuits is trivially easy. My personal temperature homeostasis includes internal feedbacks (shivering, increased blood flow to extremities) and external ones (lighting a fire). I want a choice that excludes the fire.

Pragmatically, it would be convenient if we could individuate the individual 'inside the boundary' so as to maintain its identity when we move it to another environment; what I call the *habeas corpus* test. Fortunately, contingently, this choice is conveniently available in our world, with relatively few challenging problem cases. If this journal were to be largely written for and read by slime moulds, and they chose differently, I would respect their choice of what works best in their world. The natural joint at which I choose to carve is that of autopoiesis interpreted as a self-

maintaining bodily 'concrete unity' that satisfies the *habeas corpus* requirement, and is therefore *useful*. Animals pass easily, plants need more subtle consideration but still pass, obligate mutualism offers scope for disagreements.

Cyclones may meet most such requirements yet are not really relocatable without losing their identity (that is based on little more than location). Gaia likewise is not realistically relocatable. Multicellular entities (extreme obligate mutualism?) apparently fail some purists' requirements for autopoiesis, but my rough and ready pragmatism is happy to include them. I am in basic agreement with VR in the choice of picking autopoietic entities that constitute bodies and I recommend the *habeas corpus* test: an individuated self-maintaining entity should survive relocation in a different environment without losing its identity, and in that sense be autonomous. Appropriately to the courtroom metaphor, such an entity is by default responsible for its actions.

## References

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