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Biological simplicity and cognitive heteronomy

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ABSTRACT

Heteronomy informs parts of human sense-making including perceptual and linguistic activities. This article explores Berthoz's (2012) notion of simplicity in relation to heteronomous aspects of human cognition while it criticises proponents of Active Externalism for presuming that cognitive activity is based in strong autonomy. Specifically, its negative target is the problematic aspects of Varelian Enactivism and Extended Cognitive Functionalism which are linked to the assumption that cognition is conditioned by the cogniser's strong autonomy. Since active externalists presume that cognition has a clear agent-to-world directionality, they prove unable to account for cases where cognition is informed by novel sensuous inputs. The article presents a positive argument that acknowledges the embodied basis of human sense-making as well as the weak autonomy of the cogniser. It argues that biological simplicity not only enables human enacted perception, but also underlies the embodied habits that shape the perceptual horizon that grants us being-in-the-world. This horizon has a heteronomous dimension which allows us to set up habits, orient ourselves towards unknown parts of our surroundings and engage in conversations. In fact, we are able to communicate with others because linguistic activity originates in enacted perception and sense-saturated coordination.

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1. Introduction¹

This article seeks to place simplicity against the backdrop of the Active Externalism² that characterises recent contributions to 4E Cognition (see [Rowlands, 2010](#)) as well as other anti-representational approaches to human cognition and language. In so doing, the article challenges the widespread assumption amongst active externalists that the cogniser is strongly autonomous. Instead, drawing on Alain Berthoz's view of *simplicity*, I emphasise how autonomy can be coupled with heteronomy and sense-saturated experience. In so doing, I argue in favour of weak autonomy in human sense-making by critically expanding Berthoz's notion of simplicity. More on this later. First, I establish the connection between, on the one hand, Active Externalism and, on the other, simplicity.

Proponents of Active Externalism consider the cogniser as the originator of her own mental activities. Cognition is thus ascribed a clear agent-to-world directionality. Moreover, these externalists are critical of cognitive internalists (see, for instance, [Fodor \(1975\)](#) and [Searle \(1992\)](#)) who reduce cognition to computation schemes and representational mental states.

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² Active Externalism was proposed by [Clark and Chalmers \(1998\)](#) as an alternative to the Passive Externalism of [Burge \(1979\)](#) and [Putnam \(1975\)](#).

On the externalist view, cognition is constituted through interchangeable agent-environment and agent-agent dynamics as an agent makes sense of her surroundings (Noë, 2009). Consequently, they hold that mental processes are not confined to the brain, but, rather, arise as an agent manipulates external structures and artefacts to accomplish certain tasks. Berthoz introduces simplicity as an evolutionary phenomenon that underlies complex cognitive processes including enacted perception (so-called *perçaction*) and social cognition (Berthoz, 2012: 12–17). More specifically, it relies on principles such as *inhibition*, *specialisation* and *probabilistic anticipation*. Simplicity thus extends beyond the brain of the agent, meaning that Berthoz's view on cognition is in basic accordance with active externalists including Clark (1997), Sutton (2006), Noë (2010), and Hutchins (2014). In regards to simplicity's general evolutionary traits, Berthoz holds that

[t]hroughout evolution, solutions have been devised to permit living organisms to act rapidly and efficiently. My hypothesis is that incredibly numerous and varied solutions – the diversity of life – are found in very different organisms (Berthoz, 2012: 23).

These solutions express simplicity in that an organism has come to develop capacities for reducing the complexity of its surroundings in the sense that it acts – or organises itself – in simpler ways, with fewer constraints, using less energy etcetera. Furthermore, Berthoz's contribution is closely related to accounts that supplement Active Externalism by allowing cognition to extend in a genotypically defined population. On this construal, cognition extends in history as a collective phenomenon that reaches beyond any particular individual or species. Rather than take an anthropocentric perspective on cognition as do Clark, Sutton, Noë and Hutchins, Berthoz agrees with those externalists who commit themselves to a strong view of life-mind continuity, thus presupposing that “[m]ind is life-like and life is mind-like” (cf. Thompson, 2007: 128).³ Put differently, all biological beings are taken to be “mental”. But despite these fundamental similarities that all mental life seems to have in common, active externalists recognise that cognitive phenomena may vary in body-world entanglement such that human cognition is more complex than that of, say, fleas or bacteria.

*Varelian Enactivism*⁴ and *Extended Cognitive Functionalism*⁵ are active externalist positions that endorse strong versions of life-mind continuity and therefore share several positive features. For instance, they are to varying degrees anti-representational and place comparable emphasis on how phenomenology plays an active role in cognition. But their proponents also hold that the cogniser is strongly autonomous in the sense that agents draw on their own cognitive powers when engaging with the environment. To put it differently, autonomy implies that agents cognise on the basis of intrinsically defined values. In general, an autonomous agent can be defined

as a system composed of several processes that actively generate and sustain an identity under precarious conditions [...] By precarious we mean the fact that in the absence of the organization of the system as a network of processes, under otherwise equal physical conditions, isolated component processes would tend to run down or extinguish (De Jaegher and Di Paolo, 2007: 487).

By presuming that cognition relies on such a form of strong autonomy, however, Varelian enactivists and extended functionalists alike fail to embrace key heteronomous elements in human phenomenology.

I substantiate this critical point in the following sections by showing that we may only come to terms with certain aspects of epistemic evolution if we give up the assumption that human phenomenology entails strong autonomy. Berthoz's concept of 'simplicity' is useful when it comes to investigating the heteronomous nature of human sense-making. First, this is because it does not commit itself to either Varelian Enactivism or Extended Cognitive Functionalism. Second, although Berthoz presents simplicity as a concept with strong ties to biology, its properties allow it to couple with experience. Cowley states that what

simplicity adds is the view that neural functionality can draw on repeated tricks of nature. Not only does this allow behavior to be multi-scalar but, in so doing, lived experience takes on a functional role (Cowley, 2016: 71).

Thus, simplicity can be extended by human phenomenology without losing touch with its biological roots. In this article, I argue that simplicity provides a broader frame for coming to terms with several heteronomous aspects of human cognition. Moreover, it allows for further clarification and development since Berthoz introduces it as a rough sketch and not a “final drawing” (Berthoz, 2012: 12). The purpose of this paper is thus to clarify how simplicity can be used to elucidate the relation between heteronomous and autonomous aspects of human cognition.

³ According to this thesis, life and mind are definable on the same basis, meaning that there is a mere difference in degree (rather than in kind) between the cognition of different types of biological agents (cf. Godfrey-Smith, 1996). Cognition and life is explainable by the same theoretical concepts, or, as Clark writes: “the thesis of strong continuity would be true if, for example, the basic concepts needed to understand the organization of life turned out to be [...] central to a proper scientific understanding of mind” (Quote in Thompson, 2007: 128–129).

⁴ As De Jesus (2015) mentions, there are two other kinds of Enactivism, namely Sensory-Motor Enactivism which focuses almost exclusively on human perception and sensuous phenomena (see, for instance, Noë, 2004, 2009; O'Regan, 2012), and so-called Radical Enactivism of Hutto and Myin (2013). Radical Enactivism sets aside strong life-mind continuity by arguing that there is an epistemic difference in kind between human cognitive phenomena and cognition of other species. In addition, Lowe (2016) has recently argued in favour of a Cybernetic Enactivism. It is currently unclear, however, how it looks upon the relation between life and mind.

⁵ In regards to the extended cognitive functionalist accounts, we are talking about two theories in particular, namely Sterelny's (2010) theory of *scaffolded cognition* and Clark and Chalmer's (1998) *Extended Mind*-hypothesis.

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