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BOOK REVIEW

The myth of the value-free biological individual

Alison K. McConwell: Biological individuality. Cambridge elements in philosophy of biology. Cambridge: Cambridge University Press, 2023, 92 pp, £50.00 HB

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> There are these two young fish swimming along and they happen to meet an older fish swimming the other way, who nods at them and says "Morning, boys. How's the water?" And the two young fish swim on for a bit, and then eventually one of them looks over at the other and goes "What the hell is water?"
>
> —David Foster Wallace (2009)

What is water? Reading Alison McConwell's element on the biological individual (BI), reminded me of this question from Wallace's commencement speech. In its wide and rich ontological, methodological, and historical discussions on the BI concept, this book cannot help but present the question, or the need to ask, how perceptions of individuality in philosophy of biology casually swim within the water of liberal, Western Anglo-American background assumptions about nature and the natural world. Helen Longino (1990), in her book *Science as Social Knowledge*, starts with the premise that science and the production of scientific knowledge are deeply rooted within social, cultural, and political values. McConwell demonstrates this approach by constructing the book in three modulated sections, each discussing a different aspect of the BI: theoretical, methodological, and historical. The sections are in numerical order but written as three distinct essays, which as McConwell suggests to readers, can be read in a different order. This structure cleverly demonstrates the complexity of reality that is so much more leveled than our simple intuitions. Reading the sections in order gives a comprehensive review of the different aspects of the BI discourse and its historical background. But changing the order will facilitate another level of understanding, such as the intertwining of science and social, or epistemic and non-epistemic values.

Longino argues that the logical and cognitive structure of scientific concepts is the outcome of social interactions. Denying the claim that scientific integrity is

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based on its being free of social, cultural, and personal values, Longino analyzes scientific concepts by looking at their operationalization into objects of study following their cognitive and social purposes (Longino 1990, 16). Consistent with this framework McConwell starts the element by asking: what is the value of biological individuality for the production of scientific knowledge and its usefulness more generally? (1). BI holds different values in different disciplinary domains as discussed in the theoretical section, Sect. 1. Some are explored in more depth than others such as the epistemic values of simplicity and objectification in species definitions (Sect. 1), the practice of counting offspring (Sect. 2), distinguishing reproduction from growth (Sects. 1 and 3), or the non-epistemic values in attributing agency to ecosystems for political policy-driven purposes (Sect. 2). McConwell adopts the accepted division of values in science into epistemic-knowledge-seeking-values and non-epistemic-social-political laden values, attributing the first two theoretical and methodological sections to the epistemic kind and the last historical section to the non-epistemic kind (2). However, also consistent with Longino and others in the values and science field, McConwell bridges this epistemic/non-epistemic distinction when criticizing the philosophy of biology's turn to practice-based analysis for its unawareness or ignorance of the "pillars of modernism—a complex of enlightenment, colonial, and positivist ideals" embedded within the scientific practice taken as given (51). These intuitions, McConwell argues, are laden with these pillars as background beliefs or presuppositions regarding the individual in nature (49).

The theoretical section examines the 'Ontic Landscape' and maps the ways BI is conceptualized, perceived, categorized, or identified in different disciplinary domains such as evolutionary biology, immunology, or ecology. For example, an organism can be considered an evolutionary individual but for different reasons than its characterization as an immunological individual. The latter will include the organism with its microbial symbionts, while the former considers forms of reproduction and inheritance as individuation criteria. This elaboration on the criteria of individuality in different domains, such as the units of selection in evolution or the inside/outside distinction in immunology, is central to BI pluralism discourse. From this basic ontological picture, McConwell steps out of the fish tank and observes the water. The following sections explore questions concerning epistemic values and their ties with social non-epistemic values and the way they shape questions and hypotheses of individuality. In each of these sections, McConwell presents the epistemic and non-epistemic interactions as they create the boundaries of discussions. These boundaries limit the scope of questions and hypotheses regarding individuality in nature to the set of values and conceptions available in modern, colonial, and binary society. This leads to the closing sentence of the element with the conviction: "To the philosophers out there: biological individuality is not, and never has been, value-free" (79).

The volume provides insight into thinking critically about the connections between the modern Western-colonial-liberal experience of individuality and its scientific theories and practices. Particularly, in the historical section discussion of the path taken where the meaning of biological individuality facilitates the science and political movements of eugenics as a cautionary tale. The cautionary tale follows Darwin, the Huxleys (grandfather and grandson), and Asa Gray

discussing how individuality entangled with progress characterized individuality in terms of agency, autonomy, and perfection (62). This narrative comes out nicely in the story of the Huxleys generational difference approach to individuality. Thomas Huxley (1825–1825) was troubled by the enigma of distinguishing reproduction from development and growth. This morphological challenge led him to describe a Sisyphean process of developmental life cycle "to distinguish growth of the same individual from the origin point of a new one" (69). This Sisyphean cyclical picture of individuality in evolution contrasts with the young Julian Huxley (1887–1975) who emphasized complexity between species as an indication of progress (See Fig. 8 on p. 70).

The methodological section first indicates the philosophical motivation for a practice-based analysis asking about the role of individuality in reasoning about the object of study: "to investigate the connection(s) between individuality concepts and/or individuation techniques and the empirical results that follow" (47). Then, McConwell warns us these practice-based approaches might be "haunted by" scientific positivism, colonial logic, and objectification shaping the background beliefs about individuality in nature (47). For example, the metaphysical tendency to see the world as composed of essentials, clearly delineated individuals, or to ask binary questions to characterize individuality compared to characterizing individuality by relationships and interdependence (48). Another example is the ethics of settler-colonialism background beliefs regarding individuality, which frames the need to identify ecological systems as individuals to claim their "rights" for protection (48). Also, using such argumentation against the lack of individuality of these systems fosters a conservation view of management, where the agency belongs to humans caring for the land as a one-sided relationship (48).

In Sect. 1, McConwell discusses the usefulness of the BI concept in settling the innate tension between the dynamic and changing nature of living entities and the scientific/epistemic need for the categorization and classification of organisms, species, and units of selection (4–28). Reading the element by starting with the history, moving to the methodology, and finishing with the theory section, outlines the connections between the historical agency, methodological objectification, and epistemic classification/categorization of the BI. This outline frames our Western intuitions regarding individuality and the tension between objectification and viewing individuals as active and interactive subjects. From this critical view, McConwell also suggests a way of forward-thinking that helps identify and challenge these intuitions (51–60). Here she discusses Haraway's suggestions of combining an agential way of thinking about individuality by reconstruction and redefinition of boundaries as part of the relationship dynamic between science and nature and between humans as biological beings and their technological creations (56). This takes me again to the first theoretical section discussing the metabolic individual which is the least delineated and objectified individual of all domains (30). Metabolism, being a practice of consumption and decomposition, is also the practice of building and growth. Metabolism keeps redefining boundaries, inside and outside distinctions, and can change intuitions regarding individuality from that of independent objects to relational, interdependent interactive subjects. McConwell could have given more consideration to new and alternative questions about individuality by connecting the

notion of a metabolic individual to the emphasis on relationships in indigenous logic and Haraway's biopolitics (48).

After reading the element in its original order, I have decided to write the review in a way that suggests other reading orders in the hope of provoking readers to try the element's modularity as well. There are many debates, stories, and questions in this element that I did not address, not for lack of interest or relevance, but for the sake of space and narrative. Just to name a few, in the element you will find a good summary of the plurality debate on biological individuality that is both clear and thorough for those who wish to get a better understanding of this important philosophical debate (see Sect. 1). Also, the interesting and enlightening discussion of Darwin's duality regarding individuality concerning internal and external forces, and how this was eventually connected to agency (see Sect. 3), as well as an excellent review and discussion of the practice-based analysis in Sect. 2. All sections separately and together framed within the science and values discourse make this element unique in its overview of BI within the field of philosophy of biology. This element is useful for learning or teaching purposes, and also as a framework for further philosophical research into biological theory, practice, and history. So, come on in, the water is fine!

References

Longino, Helen E. 1990. *Science As Social Knowledge*. Princeton: Princeton University Press.

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