Evolution as an Extended Metaphor of Education

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> [It is] like an aquarium (but unlike the ocean), the classroom is both real and invented: classrooms are real places, inhabited by real people, but the meanings that children – and adults – find there are meanings they create themselves.
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> – Julie Diamond, *Kindergarten: A Teacher, Her Students, and a Year of Learning*

In her ambitious and compelling essay, "Education as Cultural Inheritance: Using Oakeshott and Dewey to Explore the Educational Implications of Recent Advances in Evolutionary Science," Aline Nardo engages in two distinct yet deftly interwoven projects.[1] First, she introduces the "Extended Evolutionary Synthesis" (EES). This paradigm challenges the dominant "Modern Synthesis" (MS) – an evolutionary model that defines, and in turn delimits, inheritance as exclusively genetic transmission across generations. By contrast, Nardo explains that EES integrates the vital role of "soft" inheritance in evolution, involving the role of learning and teaching in the transmission of culture across generations. With this *extended* view, education is offered a scientific ground for its role in cultural inheritance. The second project is the use of Oakeshott and Dewey, whose visions of education prefigured aspects of EES. Nardo cites two salient reasons for the use of their philosophies of education: (1) they do not "use the term 'inheritance' metaphorically but as part of a larger evolutionary framework" and (2) their philosophies of education are "typically discussed in tension," which enables a broader exploration of the meaning of "education as cultural inheritance." The lessons from Nardo's earnest and novel contribution are significant in their implications with respect to "how we understand education" and in the inauguration of a "new vocabulary to discuss the role of teaching and teachers in society."

A few preliminary remarks are in order to clarify and justify my focus on certain aspects of this essay. First, Nardo has made it clear that EES is

part of a conceptual shift to *pluralize* our prior understanding of inheritance as conceived in the Modern Synthesis evolutionary model – a reasonable and worthy project. To understand inheritance as both genetic and non-genetic encourages new intellectual, practical, and descriptive avenues for teachers and philosophers of education to explore. Second, the comparative aspect of Nardo's essay, constituted by an analysis of Oakeshott and Dewey, is insufficient. This is not because Nardo's treatment of the thinkers is in question as such but rather that there is an unwelcome outcome of the comparison between two prolific voices that detracts from the valuable insights emergent from the larger project. Simply, the comparative project subsumes Nardo's broader inquiry of pluralizing our understanding of inheritance. Further, with specific reference to Dewey, the exclusive focus on *Democracy and Education* is understandable; however, considering his oceanic body of work, this project would greatly benefit from additional engagement with his thought on, for example, aesthetics as it directly pertains to cultural inheritance beyond genetic transmission. Lastly, it is noteworthy that recent literature on EES emphasizes the fact that the story of "soft" inheritance is still in the first act.[2] The scientific consensus is not yet clear, and evidence is still being gathered. What is unequivocal, as Nardo rightly argues, is the current hold of the Modern Synthesis and its gene-centred view of inheritance on the public imagination.

In this response, I wish to focus on the role of language and the development of a new vocabulary to discuss teaching and teachers in society engendered by Nardo's inquiry. To do this, I will be challenging a fundamental claim Nardo makes in the essay when interpreting Dewey and Oakeshott: "their use of the term inheritance is *not metaphorical* but part of a larger evolutionary framework" (emphasis mine). This claim spotlights two conceptual blind spots that emerge from its application. I will treat them separately.

The first blind spot is to look for explicit references in Oakeshott and Dewey on their use of "inheritance" as if they were building an "evolutionary framework." The contextual frames for evolutionary biologists and physiologists when juxtaposed with teachers exhibit meaningful differences. I say teachers, not philosophers of education, because Oakeshott and Dewey were *teachers* too.

Scientists focused on evolution are concerned (and rightly so) with the changes that they posit across generations. Their vision glimpses the present, but they ultimately embrace a much greater passage of time for the organism to change observably. Proponents of EES would point out that I am speaking in the tongue of the Modern Synthesis paradigm, as gradualist change in an organism is one of its basic assumptions. Nevertheless, the scientist holds a gaze that is different from that of the teacher.[3] Dewey and Oakeshott are looking at changes or, to borrow Nardo's delightful phrase, "transmissions and transformations" that can occur over a much shorter time span – a fundamental assumption in the EES model. Scientists have a distinct advantage of *waiting* to see across generations, but teachers have their own distinctive vantage point too. They are present and a *part* of the student's journey; the scientists remain *apart from* this journey.

The blind spot caused by treating Oakeshott and Dewey as conceptual architects of an evolutionary framework is that it not only absorbs education into a larger evolutionary blueprint that fails to perceive the metaphorical nature of evolution itself but also thereby misunderstands the fact that it is evolutionary models that have far more to gain from the descriptions and narrations of the first philosophers of education – teachers. Consider a central idea in the EES model: *reciprocal causation* – the idea that organisms shape, and are shaped by, their environments.[4] This returns agency to human beings who have hitherto been viewed as passive recipients of inherited traits as the sole form of their inheritance. The epigraph of this essay, drawn from Julie Diamond's reflective teacher-narrative *Kindergarten*, offers an evocative metaphor describing a classroom environment.[5] The classroom is *like* an aquarium but unlike the ocean. Its reality is contained in the desks and chairs, but the imaginative *possibilities* inhere in the social interactions emerging from the space. Diamond's description is written in a different register, but it underlines the idea of reciprocal causation. Teachers and students shape, and are shaped by, their classroom environments. However, the vital difference is that the journey of a student is *not necessarily* evolutionary. Evolution itself is but *one* of the many metaphors that contributes to the plurality of descriptions that vivify and revivify our narratives of education.

This brings me to the second blind spot precipitated by the claim that

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Oakeshott and Dewey do not use the term "inheritance" metaphorically but as part of a larger evolutionary framework. As biosemioticians have noted, the language of evolution and its accompanying concepts are itself *metaphorical*.[6] Taking the idea of natural (unintended) selection, it has long been an illusion that this is different from artificial (intended) selection. Darwin himself noted that "female birds in a state of nature, have by a long process of selection of the more attractive males, added to their beauty."[7] What this tells us is that scientists have had to wrestle with the descriptive burden of choosing the right metaphor to illustrate their ideas. It is no accident that this is a problem that philosophers, of education or otherwise, can identify in their own work. Nardo argues that it is the philosophers of education that have much to gain from an extended view of cultural inheritance; however, as my response has shown, it is the evolutionary biologists who have much *more* to gain and learn from descriptive accounts of education in the classroom by teachers who are witnesses of education – the cultural transmissions and transformations – every single day.

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1 Aline Nardo, "Education as Cultural Inheritance: Using Oakeshott and Dewey to Explore the Educational Implications of Recent Advances in Evolutionary Science," *Philosophy of Education* 78, no. 1 (same issue).

2 Russel Bonduriansky and Troy Day, *Extended Hereditary: A New Understanding of Inheritance and Evolution* (Princeton University Press, 2018).

3 Kevin N. Laland et al., "The Extended Evolutionary Synthesis: Its Structure, Assumptions and Predictions," *Proceedings B* 282 (2015): 1-14.

4 Laland et al., "The Extended Evolutionary Synthesis," 2.

5 Julie Diamond, *Kindergarten: A Teacher, Her Students, and a Year of Learning* (New York: New Press, 2011).

6 Denis Noble, "The Illusions of the Modern Synthesis," *Biosemiotics* 14 (2021): 5-24.

7 Charles Darwin, *The Descent of Man, and Selection in Relation to Sex* (London: John Murray, 1871), 246.