ABSTRACT. In the early 1970s, Thomas Colwell argued for an “ecological basis [for] human community.” He suggested that “naturalistic transactionalism” was being put forward by some ecologists and some philosophers of education, but independently of each other. He suspected that ecologists were working on their own versions of naturalistic transactionalism independently of John Dewey. In this essay, Deron Boyles examines Colwell’s central claim as well as his lament as a starting point for a larger inquiry into Dewey’s thought. Boyles explores the following questions: First, was and is there a dearth of literature regarding Dewey as an ecological philosopher? Second, if a literature exists, what does it say? Should Dewey be seen as biocentric, anthropocentric, or something else entirely? Finally, of what importance are the terms and concepts in understanding and, as a result, determining Dewey’s ecological thought in relation to education?

In 1971, Thomas B. Colwell Jr. published an article in Educational Theory in which he argued for an “ecological basis [for] human community.” He suggested “naturalistic transactionalism” was being put forward by some ecologists and some philosophers of education at that time, but independently of each other. “I suspect,” he wrote, “that some ecologists are working out their own version of a naturalistic transactionalism quite independently of Dewey.” Dewey, argued Colwell, was often overlooked when it came to his ecological thought. Thirteen
years later, in a 1985 article in *Educational Theory*, Colwell argued, again, in favor of understanding John Dewey as an ecological philosopher. Colwell’s central claim was that Dewey’s theories of knowing, learning, and living are ultimately biocentric and transactive, not anthropocentric and unidirectional (that is, not a one-way avenue where nature is used by humans solely for their controlling and exploitative interests). Anthropocentrism situates humans as the arbiters of utility and exploitation over nature whereas biocentrism situates humans within a world that is symbiotic. Dewey’s conception of science, according to Colwell, “is distinguished not only by its ecological model of organism-environment interaction, but by the principle of continuity” (*EPD*, 262). Colwell, lamented, however, that much of Dewey’s thought had not been interpreted from the perspective of ecology and that references to Dewey’s ecological thought were “few and far between” (*EPD*, 256n).

I examine Colwell’s central claim as well as his lament as a starting point for a larger inquiry into Dewey’s thought. I explore the following questions: (1) Was and is there a dearth of literature regarding Dewey as an ecological philosopher? (2) If a literature exists, what does it say? Should Dewey be seen as biocentric, anthropocentric, or something else entirely? Is this terminology helpful or a hindrance, that is, are the terms used to evaluate Dewey better stated as his naturalism, realism, or something else? (3) Of what importance are the terms and concepts we use to understanding and, as a result, determining Dewey’s ecological thought in relation to education?

I begin with Colwell’s lament and identify literature across a relatively wide spectrum — in terms of time, discipline, and competing conclusions. I then

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5. There are variations on these two concepts and, as will be shown later in the essay, referring to Dewey’s biocentrism is not meant to restrictively “label” or “pigeonhole” Dewey; rather, this reference is only another means to use language to clarify Dewey’s mature thought. See Larry A. Hickman, “Nature as Culture: John Dewey’s Pragmatic Naturalism,” in *Environmental Pragmatism*, ed. Andrew Light and Eric Katz (New York: Routledge, 1996), 50–72, esp. 55.


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concentrate on aspects of naturalism and realism that pervade the discourse surrounding Dewey’s metaphysics and epistemology, with particular emphasis on the development of Dewey’s mature thinking. I conclude with stipulative support for Colwell’s central claim, using recent scholarship and Dewey sources beyond those originally provided by Colwell, and argue that Dewey’s work does, in fact, offer much to consider in the realm of ecology, perhaps especially relating to school classrooms.

**Ignored, Misinterpreted, Revised?**

Colwell claimed that Dewey was doing ecology before ecology became popular \(\text{\textit{EPD}}, 265\).\(^7\) “That Dewey was a naturalist is well known,” wrote Colwell, “but the interpretation of his work has focused almost exclusively on social experience and has ignored the relationship of education to nature” \(\text{\textit{EPD}}, 255\). In interpreting Dewey’s thought, particularly in philosophy of education, Colwell believed Dewey to be a “pioneer in ecological thought” \(\text{\textit{EPD}}, 265\). His lament, however, was that Dewey may have been overlooked because he “had one foot in the pre-ecological world and one in the ecological” \(\text{\textit{EPD}}, 265\). Taken as a whole, Colwell posited that Dewey’s ecological thinking — that is, his naturalistic philosophy — was forward-looking and oriented toward practical action and organic change. In support of this view, Colwell noted a number of philosophical works dealing with ecology.\(^8\) His concern was that Dewey was only rarely mentioned, and when Dewey was mentioned, it was in a disparaging manner.\(^9\) Those who made use of Dewey were

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criticized by Colwell as misinterpreting or limiting their analyses. For example, Colwell criticized Roderick French and D.C. Phillips: the former treated Dewey too briefly and the latter did not make explicit the “connection between organicism and ecology” (EPD, 256n). Colwell suggested that James Bowen was a rarity in seeing Dewey’s ecological merits, though Colwell claimed that “it is curious that in his otherwise accurate and sympathetic account of Dewey, [Bowen] finds that Dewey excluded humanity from nature, even though he quotes Dewey to the contrary” (EPD, 256n). The degree to which Colwell may have been correct in this assessment will be explored later, in the sections dealing with naturalism and realism. For now, I wish to highlight a consequence of Colwell’s article, explore implications from it, and identify literature Colwell did not cite but that might be helpful in examining Colwell’s (and others’) interest in Dewey’s ecological thought.

One consequence of Colwell’s article was a 1995 essay by Paul Morgan in which he reflects on Colwell’s work and claims that Colwell’s interpretation of Dewey had merit, but only if Dewey was read selectively. Morgan begins his analysis with Colwell’s work but turns to C.A. Bowers and George Sessions for criticism of Colwell and Dewey. In citing Bowers, Morgan is persuaded that Dewey had, as Bowers articulates it, a disguised cultural agenda that disqualified him from being seen as an ecological leader (RFE, 298). Morgan goes on to determine that Dewey’s naturalism was his Achilles’ heel. He writes that the “potential problem for Dewey is that those who proclaim a naturalistic philosophy and see nature as a unitary, dynamic whole, still have questions to answer if they see that same nature as primarily a source of problems to be overcome or an unruly force to be subdued” (RFE, 297, emphasis added). Morgan’s stipulation within the claim (noted in italics) led him immediately to George Sessions’s rebuke of Dewey. Morgan cites Sessions as follows: “Many naturalistic philosophies, from the Enlightenment to Marx and Dewey, claimed that humans were a part of Nature. But they seem to have meant this in a somewhat superficial sense for they still pictured humans as dominating the rest of Nature, as manipulating, controlling,


or managing the biosphere.” What I find interesting about the progression of Morgan’s essay is that he acknowledges Colwell’s line of reasoning in support of Dewey’s naturalism, but then questions whether Dewey saw “nature as primarily a source of problems to be overcome or an unruly force to be subdued.” If put this way, Dewey’s naturalism holds that nature provides two, and only two, possible consequences and both of these consequences are negative: either it is a source of problems to be overcome or it is an unruly force to be subdued. On this view, to “overcome” and “subdue” nature appears to separate nature from those who would “overcome” and “subdue” it. This sets up a dualism that is inconsistent with Dewey’s antidualist stance. Such reasoning also seems fallacious on the basis that it creates a straw man. Whether Morgan misrepresents naturalism to make it easier to attack is not the focus of this work, but it does raise a central concern. What is naturalism?

Morgan is persuaded by Sessions’s conclusion that Dewey “wanted to overcome nature and not cooperate with it” (RFE, 297). Morgan maintains that

What is needed is a commitment to ensuring that human creations and practices complement and conserve the rest of nature and promote the long-term existence of communities, human and other, including all the qualitative aspects of life that make for thriving. This is where Dewey begins rating poorly as an ecological pioneer, and where Colwell, given his opposition to viewing nature as “an object of control, alteration, and exploitation,” should have been more cautious about painting Dewey as a visionary ecologist. (RFE, 297)

As part of his conclusion, Morgan takes a quote from Colwell as an indictment of Dewey. He presumes, in other words, that “viewing nature as ‘an object of control, alteration, and exploitation,’” is Dewey’s view and one that Colwell rejected and, therefore, should be justification for criticizing Dewey rather than advancing him as an ecological pioneer. The question recurs: What is naturalism? Did Dewey in fact anthropocentrically regard nature in the way that Sessions and Morgan claim? I suggest that the answer is “no” and that support for this conclusion is best found in Dewey’s integration of naturalism and realism, particularly in his mature thought.


14. For more on Dewey’s antidualist stance, see John Dewey, Experience and Education (New York: Collier, 1938). Dewey employed a form of dualistic representation in Experience and Education as a way to implode dualisms themselves — that is, he laid out traditional and child-centered approaches to understanding schooling and argued that both are wrong in their extremes. Instead, Dewey offered a meliorist “third way.” Dewey’s version of progressivism does not indulge in student whim, but it also does not start from the premise that a priori “steps” for curriculum imposition are justified.


16. Before focusing on those aspects of Dewey’s philosophy, I want to point out that Colwell was likely correct that there was a dearth of literature relating to Dewey and ecological thought, at least in the specific terminology of ecology and in the timeframe to which Colwell was referring. What I mean is
Naturalism

Michael Eldridge’s analysis of the development and varieties of naturalism in the nineteenth and twentieth centuries in the United States provides important context for understanding Dewey’s naturalism. In short, Eldridge points out that naturalism in nineteenth-century America meant materialism and empiricism in opposition to idealism. Theorists such as George Santayana, William James, F.J.E. Woodbridge, and John Dewey debated the meaning of “naturalism.” While each theorist can be broadly defined as a naturalist, distinctions nonetheless developed over time. “[These distinctions] are the Aristotelian orientation of F.J.E. Woodbridge, and his prominent student, John Herman Randall, Jr., the pragmatic naturalism of John Dewey, and the non-pragmatic (or refusal to privilege the human) approaches of George Santayana and Morris Raphael Cohen.” There was a notable exchange between Santayana and Dewey that is instructive insofar as it helps clarify Dewey’s position.

In the now-famous exchange, Santayana accused Dewey of not being a naturalist at all. He charged that Dewey’s views in *Experience in Nature* could be summed up in the phrase “the dominance of the foreground”:

> In nature there is no foreground or background, no here, no now, no moral cathedra, no centre so really central as to reduce all other things to mere margins and mere perspectives. A foreground is by definition relative to some chosen point of view, to the station assumed in the midst of nature by some creature tethered by fortune to a particular time and place. If such a foreground becomes dominant in a philosophy naturalism is abandoned.

Dewey replied to Santayana’s critique by claiming that Santayana had dualistically separated humans and nature. “In short, [Santayana’s] presupposition is a break between nature and man…. The former is real, substantial; the latter specious, related to the next sections on naturalism and realism: while there may be a dearth of literature relating to Dewey and ecological thought prior to Colwell’s 1985 article (and even granting Colwell’s 1971 essay), there is a fairly substantial literature debating Dewey’s version of naturalism and realism, and I turn to some of that literature next. In it, Dewey is cited and philosophy and ecology are not wholly excluded, to be sure. My point is that there is more literature on naturalism and realism relating to Dewey than on ecology. For an example of Dewey linked to ecology, see Eduard C. Lindeman, “Ecology: An Instrument for the Integration of Sciences and Philosophy,” *Ecological Monographs* 10, no. 3 (1940): 367–372. See also Amos H. Hawley, “Ecology and Human Ecology,” *Social Forces* 22, no. 4 (1944): 398–405.


deceptive, since it has centers and perspectives.”20 The crux of the matter, according to Eldridge, is that both men’s lives were lived in distinctly different ways, and those differences account for at least part of their views on nature. Santayana was, at the end of his life, essentially a recluse in all ways except his mental pursuits. According to John Lachs, he had “given up the attempt to lead a life of reason in a social setting: he was isolated in every way but intellectually.”21 Dewey, on the other hand, was deeply embedded in “the life of his family, university, profession, city, and nation, and his metaphysics reflects this situatedness.”22

Dewey claimed that the “broken-backed” naturalism of Santayana divided humans from nature, was actually unnatural, and reminded Dewey of transcendental “supernatural beliefs.”23 Dewey’s naturalism spanned the gulf by imploding the dualism between humans and nature. “In other words,” wrote Dewey, “I have tried to bring together on a naturalistic basis the mind and matter that Santayana keeps worlds apart.”24 What is important to underscore about this quote, and part of the focus of this essay, is both what Dewey said and when he said it — 1927. When Dewey notes that he is bringing together “mind and matter,” he is reflecting a move from two earlier periods in his life to a third, more “mature” position: (1) his early career indicative of idealism; (2) his middle work, before 1925, where he can accurately be said to defend a version of naïve realism; and (3) his work after 1925 when, according to John Shook, he “elaborated a thoroughgoing naturalism.” As Shook paraphrases the development, “Dewey’s idealism located the meaning of all reality within a universal consciousness; his naïve realism stated that things are what they are experienced to be; and his naturalism described experience as the product of environmental-organism transactions.”25 Dewey’s development, then, led from naïve realism to transactional realism because his view of naturalism grew to encompass a symbiosis between humans and objects.

Consistent with this development, and thirteen years after he replied to Santayana, Dewey responded to papers in a symposium regarding experience and nature published in The Philosophical Review.26 Significantly, he also answered the charge that his view is anthropocentric. “In order to be understood,” Dewey

24. Ibid., 62.
wrote, “what I have said about genesis and function, about antecedents and consequences, has to be placed in the perspective suggested by this emphasis upon the need of formulating a theory of nature and of the connections of man in (not to) nature on the basis of a temporal continuum.”\(^\text{27}\) Dewey was thus making the distinction between human application and human embedding. Humans are part of nature, not set apart from it. Nature is not a fully formed entity set apart from humans, either. “Nature,” as Larry Hickman puts it, “as a complex of objects of knowledge, is neither complete in itself apart from human interaction, nor the locus of extra-human deliberation.”\(^\text{28}\) Dewey’s theory of nature is similar to his epistemology in his eschewal of the spectator theory of knowledge that separates the object of knowledge and the subject who knows. By emphasizing “in nature,” Dewey echoed Eduard Lindeman’s definition of ecology as “a relational discipline,” one that integrates science and philosophy.\(^\text{29}\) Dewey’s naturalism merges rather than separates; conjoins rather than bifurcates. Relating Dewey’s naturalism to the question of anthropomorphizing, Hickman writes the following:

> To speak of non-human species or non-human individuals as the possessors of intrinsic rights would in Dewey’s view amount either to anthropomorphizing non-human nature or to opening up a chasm between human and non-human nature by positing a domain of moral rights that does not involve moral agency and is therefore entirely separate from what human beings understand by the term. Does this mean that Dewey’s naturalism regresses to a modernist anthropocentrism? Does his naturalism open the door to treating non-human species in any way we choose? It does neither.\(^\text{30}\)

Hickman provides a bridge between Dewey’s view of realism and how it informs his broader theory of naturalism. In order to connect this point with the larger purpose of this essay, I now turn to a brief exploration of realism (better, realisms).\(^\text{31}\)

**Realism(s) and Transaction**

As a general definition, realism holds that objects exist outside of our perceptions. This seems simple enough, at first blush; importantly, however, there are a series of distinctions that help clarify which version of realism Dewey held, how it informs his naturalism, and, thus, how to evaluate his ecological thought and standing. Realism is distinct from idealism in that idealism claims that no external reality exists apart from our knowledge or consciousness of material objects. Mind, for idealists, is central. Realism is also distinct from phenomenalism in that phenomenalism regards groups or sequences of actual

\(^\text{27}\). Ibid., 249 (emphasis in original).

\(^\text{28}\). Hickman, “Nature as Culture,” 53.


\(^\text{30}\). Hickman, “Nature as Culture,” 64–65. Hickman also adds that “Dewey’s naturalism is capable of promoting a piety with respect to non-human nature that is not encumbered by the epistemological problems of transcendent views of nature” (65).

\(^\text{31}\). Just as I argue that there are a variety of “realisms,” so, too, are there different versions of idealism, hence, “idealisms.” My point is not to essentialize either view, but to point out the complexities within and surrounding various versions of realism in order to better situate and clarify Dewey’s view.
and possible sensa. Varieties of realism include, but are not limited to, naïve realism, commonsense realism, critical realism, new realism, scholastic realism, and subjectivist realism. Dewey’s realism is distinct from each of these versions and is central to understanding his ecological view.

Naïve realism is the position that sensa, or sensible qualities, yield accurate descriptions of the world. Commonsense realism ranges from G.E. Moore’s defense of the certainty of the claim “this is a hand,” to J.L. Austin’s and Anthony Quinton’s arguments that perception (even illusions) means actually seeing physical objects. Naïve realism and commonsense realism fall under the broader category of direct realism because they hold that perception is the “direct” awareness of an external, fixed object. Dewey’s ultimate criticism of such forms of realism, versus his early endorsement, is that they represent “a last desperate stand and fortress of the classic doctrine that knowledge is immediate grasp, intuition, envisagement, possession” and that “until the assumption of immediate intrinsic differences in the meaning-objects of sensory perceptions, reveries, dreams, desires, emotions, has been expelled, the actual relation of ideas to existences must remain an obscure and confused matter.”

Some of Dewey’s contemporaries advocated something different: new realism. William Montague and Ralph Barton Perry, for example, argued for a selective

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32. Sensa, including things such as sound, shape, color, smell, and tactile feelings, are taken by phenomenalists to be private and known directly. See, for example, Nicholas Bunnin and Jiyuan Yu, eds., The Blackwell Dictionary of Western Philosophy (London: Blackwell, 2004), 634.


35. Dewey, Experience and Nature, 256. See also Ernest Nagel, “Dewey’s Theory of Natural Science,” in John Dewey: Philosopher of Science and Freedom, ed. Sidney Hook (New York: Dial Press, 1950), 231–248, esp. 237–238 relating to naïve realism. Christine McCarthy and Evelyn Sears argue differently. They explicitly claim that Dewey “specifically endorses naïve realism.” See Christine McCarthy and Evelyn Sears, “Deweyan Pragmatism and the Quest for True Belief,” Educational Theory 50, no. 2 (2000): 217. John Shook interprets Dewey’s realism this way: “Realists, asserting the mind-independent existence of objects, also assign to mind the task of establishing meaning. The realists’ distaste for the idealistic mental construction of objective things typically encourages them to hold that sensations by themselves are able to enplane experience with sufficiently meaningful objects without any intellectual processes involved. This sounds like Dewey’s view; however, the realists conflated it with the sort of naïve realism that Dewey repudiated” (Shook, Dewey’s Empirical Theory of Knowledge and Reality, 223).
theory of perception. As R.J. Hirst illustrates the theory, there are two essential points: [1] if a table looks round to one person and elliptical to another, the table intrinsically has both qualities; and [2] “the function of the nervous system and of the causal processes in perception is to select and reveal to the percipient one property from each set of properties, for example either the elliptical or the round shape of the table.” Additionally, new realism rejects the doctrine of internal relations but agrees that, according to Andrew Howat, “knowing is not an internal relation; it neither constitutes nor ‘conditions’ its objects. Objects exist and have their natures fixed independently of our knowing them and our knowing about them does not affect their existence or essential natures.”

Other contemporaries of Dewey advocated competing forms of critical realism, including George Santayana, Arthur O. Lovejoy, and J.B. Pratt. For these critical realists, data in perception are not actual parts of external objects; rather, they are “character-complexes . . . irresistibly taken, in the moment of perception, to be the characters of existing outer objects.” New realism and critical realism still faced challenges. New realism, for example, was unable to overcome the difficulty of what James Campbell calls the problem of error and illusion: “If experience is the monistic apprehension of the objects of nature, then it must be accurate; at the same time, sticks do not bend in water and train tracks do not meet.” Critical realism, as a movement or reaction against new realism, failed in part because of divisions surrounding whether the data in perception are “character-complexes” in essence or an existent.

Dewey’s realism is also distinct from C.S. Peirce’s “scholastic realism,” otherwise understood as closer to the objectivist end of the pragmatist spectrum.


38. Howat defines the doctrine of internal relations as follows: “the doctrine states that all relations are ‘internal’ or essential to the nature of their bearers. It entails that no object can change any of its relations to other objects without thereby becoming a different object or changing its essential nature.” See Andrew W. Howat, “Realism,” in American Philosophy: An Encyclopedia, ed. John Lachs and Robert B. Talisse (New York: Routledge, 2008), 651. Howat also lists four versions of realism: natural realism, new realism, critical realism, and pragmatism. For the purpose of this essay, I do not use “pragmatism” as a version of realism; instead, I use “transactional realism” to qualify Dewey’s pragmatism.


For Peirce, there are “real” and fixed essences that exist before reflective inquiry. As Jim Garrison puts it, “Peirce believed in the reality of universals [like] fixed laws of science. The predetermined end of scientific inquiry for Peirce was correspondence to the fixed and final structures of external reality.” Dewey’s realism is unlike William James’s “subjectivist realism,” too, otherwise understood as a reality having no preordained essence or final end to inquiry. “All reality,” wrote James, “whether from the absolute or the practical point of view, is thus subjective.” Dewey’s realism differed from those of both Peirce and James insofar as Dewey rejected Peirce’s notion of fixed essences and refused to slide down James’s slippery slope of potential relativism. While these characterizations tell us what Dewey’s view was not, what was it?

Dewey’s realism is what Garrison calls a “reconstructed combination” of the two philosophies. Dewey took Peirce’s pragmatic maxim [all things are fixed by their consequences] and James’s view of constructed essences as part of ongoing human inquiry. Dewey’s mature realism is, therefore, transactional realism. In 1986, R.W. Sleeper described Dewey's transactional realism as follows:

Dewey’s pragmatism is ... a radical form of realism — transactional realism in which instrumentalism plays a subordinate role ... and thinking entails active involvement with independent reality, an involvement that is causally efficacious. Even reflection is a means of conducting transformational transactions with the world, a means of changing or reconstructing the world.

Transactional realism appears to support the view that Dewey was not anthropocentric in his ecological outlook because the change and reconstruction to which Sleeper refers are not done “to” the world, but “with” and “in” the world. Human understanding and knowing result from more than mere interaction between humans and artifacts or objects. As Dewey expressed it, “nature’s place in man is no less significant than man’s place in nature. Man in nature is

42. See, for example, Christopher Hookway, Peirce [1985; repr. New York: Routledge, 1992], 37–40 and 51–58. See also Justus Buchler, Philosophical Writings of Peirce [New York: Dover, 1950], 274–301.
46. Thomas Alexander notes that “rather than fighting the ghosts of idealism in Dewey’s thought, we would do far better to see his work presenting the rudiments of an evolutionary metaphysics that replaces the Greek ideal-knower with that of a creative ecosystem in which change, plurality, possibility, and mutual interdependence replace the canonical concepts of substance, timelessness, logical identity, self-sufficiency, and completion. Such a position might be called ‘ecological emergentism’ and its metaphysics in particular, ‘eco-ontology.’” See Thomas Alexander, “The Aesthetics of Reality: The Development of Dewey’s Ecological Theory of Experience,” in Dewey’s Logical Theory: New Studies and Interpretations, ed. F. Thomas Burke, D. Micah Hester, and Robert B. Talisse [Nashville, Tennessee: Vanderbilt University Press, 2002], 21.
man subjected; nature in man, recognized and used, is intelligence and art.”48 Dewey also wrote that thought “is thus conceived of as a control-phenomenon biological in origin, humane, practical, or moral in import, involving in its tissue real transformation in real reality.”49 Malcolm Cutchin argues that while some have indicted Dewey for being anthropocentric, Dewey ultimately “never proposed the necessity of human perception or being; indeed he emphasized the primordial character and role of nature in experience.”50 Reconstruction occurs when individuals make meaning from “ordinary experiences.” As Ernest Nagel notes,

Dewey does not achieve his aim [of transactional realism] by viewing the whole of nature in terms of distinctions that are known to be relevant only for the human scene. He does not offer a resolution of the standing problems of modern philosophy by clothing all of nature with anthropomorphic traits, or interpreting the course of cosmic events in terms of values that are of paramount concern only to [humans].51

Recall the distinction between anthropocentrism and biocentrism: anthropocentrism situates humans as the arbiters of utility and exploitation whereas biocentrism situates humans within a world that is symbiotic. Some may be concerned that Dewey is being “pigeonholed” by this dualism, but the purpose, in part, for making the distinction is to underscore how Dewey’s mature realism follows from a biocentrism that yields — and necessarily entails — transaction. Hickman concludes that Dewey was biocentric, given the following stipulation:

If “biocentrism” means taking a perspective that is other than human, then Dewey was no biocentrist. If it means, on the other hand, that it is characteristic of human intelligence that it continually broadens its purview, and that its best and most productive perspective is holistic, then Dewey’s work from the 1890s onward was “biocentric.”52

Accordingly, while Dewey may have made claims regarding the use of tools, technology, and the like in relation to the world and environment in otherwise anthropocentric terms [that is, humans sometimes exploit the environment for their ends], the “thrust” of Dewey’s mature thought is far more consistent with biocentrism. Indeed, Dewey’s goal was to minimize exploitation and emphasize symbiosis. Our dispositions toward investigation are merged with our surroundings in such a way that consequences, meaning making, and problem solving organically intertwine and influence each other.

**Transaction versus Interaction**

Before moving on to implications that might follow from Dewey’s nonanthropomorphic, transactional realist view of ecology for education, I want

52. Hickman, “Nature as Culture,” 55 [emphasis added].
to argue that “interaction” and “transaction” should be reconsidered in terms of their interchangeability. My point is that conflating the two concepts may lead to unnecessary confusion regarding Dewey’s naturalism, [mature] realism, and, by extension, ecological and educational views. Interaction signifies part of educational experience [concomitant with the principle of continuity], but Dewey clarified what he meant when he wrote about people living “in” the world and “interacting” in various “situations”:

The statement that individuals live in a world means, in the concrete, that they live in a series of situations. And when it is said that they live in these situations, the meaning of the word “in” is different from its meaning when it is said that pennies are “in” a pocket or paint is “in” a can. It means, once more, that interaction is going on between an individual and objects and other persons. The conceptions of situation and interaction are inseparable from each other. An experience is always what it is because of a transaction [italics added] taking place between an individual and what, at the time, constitutes his environment.53

Dewey might have been better off using “the principle of transaction” rather than “interaction” because he meant, in addition to continuity, that the back-and-forth between individual and environment is neither passive nor trite. It might be said, in other words, that we “interact” with other drivers when on the highway, but the qualitative difference of the experience (as an educative, mis-educative, or non-educative experience) depends on the depth or degree of exchange, growth, and meaning making that takes place. One can interact without considering the consequences of the interaction. Chatting at a cocktail party might require perfunctory introductions and polite banter about popular topics by those in attendance. They interact. They may even be said to contextually solve the social problem of navigating niceties. But transaction occurs at the cocktail party when the polite banter is regarded substantively or meaningfully: when the objects of inquiry organically develop and are not regarded as extant, already formed as “the topic,” or given. For Dewey, this illustrates the difference between a spectator theory of knowledge whereby the knower is merely an observer within the interaction, not one who inquires into the meanings, possibilities, or “ends-in-view” of knowing. Transaction, in a different way, requires making meaning of the world relationally and contextually. John Petrovic and Jerry Rosiek note that “the challenge for this transactional view of subjectivity is to overcome . . . exclusionary practices . . . through which coherent subject positions are assumed.”54 As Jim Garrison notes, “interaction, or more exactly transaction, is meaningless in itself . . . Unless thought connects the doing and the being done to, unless the activity is continued into the consequences and reflected back into a change . . . no learning takes place [no transaction occurs].”55 In close succession, consider the following five points regarding transaction.

53. Dewey, *Experience and Education*, 43 [emphasis in original, except where noted].


Dewey, with Arthur Bentley, distinguished between interaction and transaction as follows:

If interaction is inquiry of a type in which events enter under the presumption that they have been adequately described prior to the formulation of inquiry into their connection, then …

\[t\]ransaction is inquiry of a type in which existing descriptions of events are accepted only as tentative and preliminary, so that new descriptions of the aspects and phases of events, whether in widened or narrowed form, may freely be made at any and all stages of the inquiry.56

In *Reconstruction in Philosophy* Dewey also clarified transactional realism when he wrote about those who regard what appears to them “only as material for change”57:

It is accepted precisely as the carpenter, say, accepts things as he finds them. If he took them as things to be observed and noted for their own sake, he never would be a carpenter. He would observe, describe, record the structures, forms and changes which things exhibit to him, and leave the matter there. If perchance some of the changes going on should present him with a shelter, so much the better. But what makes the carpenter a builder is the fact that he notes things not just as objects in themselves, but with reference to what he wants to do to them and with them; to the end he has in mind. … It is only by these processes of active manipulation of things in order to realize his purpose that he discovers what the properties of things are.58

Transactional realism, akin to what Gert Biesta refers to as Dewey’s “transactional theory of knowledge,” is a particular kind of connection between thinking and action.59 According to Biesta,

To understand Dewey’s ideas about the role of thinking in action, it is important to see that we only learn, or acquire new habits, in those situations in which the organism-environment transaction is interrupted. After all, as long as the transaction goes “smoothly” — that is, when there is coordination between our doings and undergoings — we apparently have all the habits we need. The situation is different when we are not able to maintain coordinated transaction, when we do not “know,” in other words, how to respond.60

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56. John Dewey and Arthur F. Bentley, “Transactions as Known and Named,” *Journal of Philosophy* 43, no. 20 (1946): 535. Some may object to this interpretation on the grounds that Dewey, at times, made clear reference to the use of tools and the role of technology. Hickman is helpful here insofar as he characterizes Dewey and Bentley’s *Knowing and the Known* as “an attempt to move beyond models of ‘self-action’ utilized in classical philosophy and the ‘interactional’ models of modern mechanistic physics in order to develop a ‘transactional’ way of thinking that honors the dynamic features of human behavior” (Larry Hickman, “Introduction,” in *Reading Dewey*, ed. Hickman, xl). Burke, Hester, and Talisse note that “Experience … is not a matter of a mind being passively affected by objects, nor a matter of a mind receiving and filtering sensory data from an external world. It is rather an exchange, a transaction, between an organism and the physical and social factors within its environment” (Burke, Hester, and Talisse, eds., *Dewey’s Logical Theory*, xiv [emphasis in original]).


58. Ibid., 114–115 [emphasis in original].


Connecting transaction to human-ecological processes, consider Dewey’s basic illustration of breathing, walking, and speaking from *Human Nature and Conduct*:

> Breathing is an affair of the air as truly as of the lungs; digesting an affair of food as truly as of the tissues of the stomach. Seeing involves light just as certainly as it does the eye and optic nerve. Walking implicates the ground as well as the legs; speech demands physical air and human companionship and audience as well as vocal cords. We may shift from the biological to the mathematical use of the word function and say that natural operations like breathing and digesting, acquired ones like speech and honesty, are functions of the surroundings as truly as of a person. They are things done by the environment by means of organic structures or acquired dispositions.61

Dewey directly extended this point, in similar terms, in his *Logic*:

> Whatever else organic life is or is not, it is a process of activity that involves an environment. It is a transaction [italics added] extending beyond the spatial limits of the organism. An organism does not live in an environment; it lives by means of an environment. Breathing, the ingesting of food, the ejection of waste products, are cases of direct integration; the circulation of the blood and the energizing of the nervous system are relatively indirect. But every organic function is an interaction of intra-organic and extra-organic energies, either directly or indirectly... The processes of living are enacted by the environment as truly as by the organism; for they are an integration.62

Taken together, these analyses and interpretations offer a clearer sense of the qualified importance of transaction — not in place of interaction, but in addition to it.

There is, as Robin Zebrowski puts it, a key qualifier for transaction: agency. Human transaction with others and the environment requires “a constant remaking of both the world and the individual.”63 For Dewey, individuals are innately curious, inquiring beings who transact with the world as both the means and ends of understanding self and environment. Dewey’s view necessarily integrates individuals and nature. Environment may begin as a crib or room or home, but it is by extension that a more uniquely codified understanding of an “ecological environment” follows from inquiry and meaning making. Inquiry, after all, does not stop at the bedroom door or at the end of a driveway. Inquiry, as transactional realism, merges physicality with meaningfulness. It is another way of talking about Dewey’s epistemology and it cannot be divorced or severed from his ontological, fallibilist commitments.

**Temporal Conclusions and Extension to Recent Works**

Now, to bring things full circle: at the outset of this essay, I noted Tom Colwell’s scholarship on Dewey and ecology — as well as his lament. He was

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disturbed that little work had been done in the 1960s, 1970s, and up to the publication of his essay in 1985, to link Dewey's philosophy to the broader movement of ecology. A review of the literature bears out Colwell’s lament, but he might be reassured by work that followed his 1985 essay. From Ralph Sleeper’s 1986 work, *The Necessity of Pragmatism*, to Peter Manicas’s 1992 Romanell Lecture to the American Philosophical Association, to Andrew Light and Eric Katz’s 1996 work in “environmental pragmatism,” some discussion of Dewey’s ecology did follow. Even those who argue against Dewey as an ecologist, including C.A. Bowers, George Sessions, and Paul Morgan, at least picked up on Colwell’s theme. Still, Colwell might be buoyed by even more recent scholarship that interrogates Dewey’s ideas and relates them to current ecological thought. From what I think is an underused work by Paul Thompson and Thomas Hilde to the most recent work by Neil Browne, Ben Minteer, Tanya Jeffcoat, and Deborah Seltzer-Kelly, it appears that Dewey is, indeed, being linked to questions of ecology. I use Browne’s and Seltzer-Kelly’s work to illustrate how Dewey is currently being discussed in the milieu of ecology, and I suggest further that Dewey’s work should be re-visited and re-read in an effort to change educational practice in the United States today from an arguably detached, objectified, narrow, and dualist manifestation to one that is ecologically organic, engaging, expanding, and meaningful.

Neil Browne’s *The World in Which We Occur: John Dewey, Pragmatist Ecology, and American Ecological Writing in the Twentieth Century* is an examination of nonfiction ecological writing by the likes of John Muir, John Steinbeck, and Rachel Carson. Browne uses Dewey to extend, compare, and critique questions of environmentalism and ecology by reminding readers that Dewey’s notion of inquiry was directed at joining art and science, nature and culture, philosophy and social problems, and the like. As Browne notes, “Dewey’s inclusive interpretation of experience underwrites [the] contention that in ecological writing we witness the attempt to articulate the complex interaction and interpenetration of human culture and the physical world.” Browne uses the


term “ecotone” as a link between Dewey’s philosophy and the ecological writing of Muir, Steinbeck, Carson, and others. An ecotone is a transitional zone between two or more ecosystems where evolutionary potential becomes most possible. It is a place of growth and contingency, and mediated space where change can happen. An ecotone exists between ecology and democracy. . . . Some of the nodes where the two ideas rub up against one another are the concept of interdependence, the notion of borders and barriers as permeable and transitional, and the need for public access to knowledge; further, acts of intelligence participate in nature and culture; experience is a cumulative process, with an emphasis on the input of everyday life; human culture is embedded in physical nature, and physical nature is embedded in human culture. There is an ongoing exchange of creative energy among these ideas that powers pragmatist ecology.  

Browne uses ecotones to underscore the potential for relationships and border crossing. The transitional zones ecotones represent are pregnant with possibility, in other words. They indicate spaces where the push-and-pull of evolutionary meaning making emerges — where social intelligences are developed and refined over time. As transitional spaces, ecotones are places where continuity and change supportively struggle in order to yield intelligence. Understanding ecotones as transitional spaces imbued with activity underscores the Deweyan view that directing relations is actually redirecting relations in an ongoing process of meaning making and understanding (that is, knowing). The purpose of inquiry in ecotones is less about the object of inquiry and more about the action of inquiry. As Hugh McDonald puts it, “Value is primarily connected with activity . . . rather than the object.” This should not be taken to mean that process is more important than product, since Dewey inextricably joined the two concepts when he pointed out that means and ends are really the same thing. Instead, the point behind championing activity over objects is to position inquiry over goals or outcomes. Otherwise, goals and outcomes devolve into restrictions on inquiry and limit the possibilities for understanding alternatives (or even that there are alternatives) to the objects of inquiry.

Seltzer-Kelly similarly notes that ends-in-view are part of Dewey’s scientific method, where that method is neither restrictive nor habitual. “However much Dewey advocated scientific rigor,” she notes, “it was not directive; the insights to be developed through pragmatism were anything but predictable.” Underscoring this point, Dewey argued that inquiry functions “to project new and more complex ends — to free experience from routine and from caprice.” The importance of this sort of inquiry for Seltzer-Kelly is to highlight the role that Charles Darwin played in influencing what she calls Dewey’s “evolutionary epistemology.” For

67. Ibid., 18.


the purpose of this essay, her investigation also leads to an understanding of ecology and education. This is so not only because of Darwin’s theory but also because transactional realism requires the sort of inquiry that Seltzer-Kelly and others identify as central to Dewey’s project. Her work is also instructive because she links her arguments to the issue of educational method as inquiry. In linking Dewey to ecology and education in this way, Seltzer-Kelly notes that “each of the individual beings in every classroom ecosystem comes with prior adaptations and interests of its own, arrived at as a result of other pressures and experiences, and all of these individual differences interact with each other and with the broader system of education.”71 Classrooms as ecosystems, akin to Browne’s ecotones, mean that teacher and student inquiry are not “ready-made” with preordained activities. To approach inquiry in this way would be to anthropomorphize nature: to have humans structure the world artificially and exploitatively — to view schooling “as primarily a source of problems to be overcome or an unruly force to be subdued.”72 Such reductionism is not what Dewey, or Colwell, advocated.

To use language from earlier in this essay, anthropomorphism is antithetical to naturalistic transactionalism because transaction requires movement and change from contextual situations upward and outward. For schooling situations, meaning emerges from student and teacher experiences and is not confined to an imposed view of what others think students should learn and teachers should teach. This point is significant because it underscores the dramatic difference between imposition and transaction. Most schools, most of the time, in most of the United States, are bounded by external learning objectives that have to be confined to lesson planning and, thus, conform to the assumption that, for example, “best practices” already exist and need only be “adopted” in order for good teaching and learning to take place. In the typical classroom, teachers talk and students listen, rules of order are followed, quizzes are taken, grades are noted, and students (and teachers) become habituated to routines that, in circular fashion, reinforce more routines. This is the antithesis of Dewey’s educational concern — and his ecological concern, too. Classrooms as “environments” (or ecotones) are, merging Browne with Dewey, supposed to be places where transacting “existing capacities” of children with the “social set-up” of situations, including others (for example, teachers, too), leads to “worthwhile experiences.” Traditional schools, Dewey lamented in 1938 (and I think he would still lament today), provided an environment, but one that was so stacked with inauthentic and contrived “exercises” that the value determination “worthwhile” was left to the teacher or, worse, to administrators and politicians: students were “primarily a source of problems to overcome or an unruly force to be subdued.” Any learning that results from this bifurcation of nature is, according to Dewey, merely “accidental.”73

73. Dewey, Experience and Education, 45.
Instead of “accidental” learning, classrooms should be environments understood as extensions of nature. Classrooms should be ecological spaces for conjoint inquiry where that inquiry is neither “canned” nor “pre-packed,”[74] in contrast to much curricula today. Just as Dewey denied that schools are separate from society, classrooms are not separate from the broader notion of the environment either. The relevant consequences of this point are relatively straightforward: we should see classrooms as reconstructed, organic spaces safe for and productive of transactions between and among students, teachers, and emergent content. The problem, of course, is that Dewey’s ecological argument regarding classrooms means that the comfortable routines, traditional attitudes, and entrenched expectations for “preparation for the future” that characterize [constitute?] most U.S. schools will reinforce an anthropocentric understanding of the nature of teaching and learning. The challenge may be Sisyphean, in terms of changing the practices in schools, but this does not change the fact that Dewey’s ecological view should, following Colwell, be best understood in ecological as well as educational terms.

74. Ibid.

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