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An Introduction to Dewey’s Theory of Functional “Trans-Action”: An Alternative Paradigm for Activity Theory

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Engeström and Miettinen in their introduction to their edited book with Punamäki (1999) compared John Dewey with the work of A. N. Leont’ev. The understanding of Dewey’s work in this introduction reaches a depth rarely plumbed by those who are not specialized in Deweyan scholarship. By expanding on this comparison and contrast it is possible to develop a Deweyan critique of activity theory, at least as we find it in Leont’ev. My article suggests that activity theory (a) remains captured by a dualism between the external and the internal, (b) sometimes ignores context because it fails to distinguish existence from essence, and (c) sometimes over-intellectualizes the activities it analyzes. It is also possible to develop a Deweyan theory of activity. The article introduces (a) Dewey’s theory of “trans-action,” (b) his theory of functional coordination, and (c) the notion that we live in a world without a within. The article concludes with a comment on Dewey’s theory of the mental, intentionality, and semiotics.

Activity theory offers hospitality to many disparate research traditions. In the introduction to one recent collection, Engeström and Miettinen (1999) extended such hospitality noting, “A prominent feature of the chapters in this book is their multifaceted search for connections and hybrids between activity theory and other related traditions” (p. 2). Deweyan pragmatism is one such tradition. As Engeström and Miettinen remarked, “Many of the ideas of pragmatism have common features with activity theory” (p. 5). My goal in this article is to provide an introduction, or rather the outline of an introduction, to some of the most remarkable themes of Dewey’s theory of activity.1

Engeström and Miettinen (1999) displayed an in depth understanding of Deweyan pragmatism that is quite rare outside of the small community of scholars that specialize in his philosophy. They also compared Dewey to the pioneering activity theorist A. N. Leont’ev in penetrating and

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The author is currently working on a book-length “introduction.”
perceptive ways. In my article, I want to press these analogies until they begin to break down, and we can see that Dewey actually offers an alternative paradigm for activity theory.

Engeström and Miettinen (1999) began by pointing out that the pragmatist “program of transcending the dualisms’ between thought and activity, theory and practice, facts and values has much in common with the theoretical aims of activity theory” (p. 5). There is, however, a deeper dualism from whence all others flow that activity theory, as currently conceived, does not overcome. Reflecting on a long list of dualisms, Dewey (1952/1989) remarked

The material and spiritual, the physical and the mental or psychological; body and mind; experience and reason; sense and intellect, appetitive desire and will; subjective and objective, individual and social; inner and outer; this last division underlying in a way all the others. (p. 408)

Vygotsky’s disciples, such as Leont’ev, who developed activity theory to overcome the limitations of Vygotsky’s choice of word meaning as his unit of analysis, retained his concern over “internalization.” Vygotsky (1978) insisted, “An operation that initially represents an external activity is reconstructed and begins to occur internally” (pp. 55–57).²

As soon as we establish this dualism, two related questions immediately confound us: (a) How do the outer and inner interact? (b) What mediates the interaction? Vygotsky’s answer centered on word meaning and semiotic activity. Dewey strived to dissolve the problem by moving from “inter-action” to holistic “trans-action.”

Activity theory involves a more generalized version of Vygotsky’s answer to the questions of psychic internalization. Leont’ev (1978) insisted “the most important thing” in his book is “the origin, function and structure of the psychological reflection of reality that the life of the individual mediates” (p. 6; see also p. 20). Following Marx’s critique of Feuerbach, Leont’ev found that practical activity, including, but not limited to, semiotic activity, dialectically mediates the interaction. Leont’ev effectively used dialectical materialism to avoid the pitfalls of idealism that treats the “activity of perception as if it were forming the world of things” (p. 21). He likewise evaded “metaphysical materialism” in which the external object determines the internal representation (p. 22). He also avoided the temptations of representative realism as a homomorphism or isomorphism of “sensory image” with external reality, or “model and modeled” (pp. 32–34). What Leont’ev wanted to disclose is the active “process of translation” of external objects into conscious internal images (p. 35).

In constructing his theory of practical activity, Leont’ev (1978) struggled to overcome the “spectator view” of reality, as Dewey called it, with a “participant view”; still, he was snared in the dialectics of the internal, the external, and their interaction. Leont’ev could not abandon “the very fact of presentability to the subject of a picture of the world” (p. 15). While also championing a theory of activity, Dewey thought it best to give up on the “reflection of reality,” world pictures, and the problem of mediation. Because he could not, Leont’ev eventually attempts to restore the most widely refuted epistemological theory of all—representative realism. Having recourse to Descartes’s Dioptrics, which compares seeing with the perception of objects by the blind who appear to see with their hands, Leont’ev concluded

²Nowhere in this article has emphasis been added to quotations.
Whatever form perceptive activity might assume ... essentially it is formed in the same way as the activity of the touching hand "photographs" the contours of objects. Like the activity of the touching hand all perceptive activity finds the object there where it really is—in the external world in objective space and time ... Thus the directness of the ties that exist between sensory consciousness and the external world ... (pp. 35–36)

Activity photographs are not isomorphic copies mapping elements of the external object one-to-one onto an internal image; still, Leont’ev assumed some sort of structural correspondence between internal and external mediated by the active life of the individual.

Zinchenko (1985) examined at length the topic of “The problem of commonalities in the structure of external and internal activity” in response to the “Vygotsky-Luria-Leont’ev school” (p. 103). Zinchenko noted that Leont’ev saw “essential commonality of structure” between internal and external activity (p. 106). He wondered, “Might it be advisable to attempt to find the internal in the external? In other words, perhaps it is necessary to attempt to ‘mentalize’ external, material, practical action” (p. 108). The idea is that “consciousness and intentional and emotional mental processes are brought into the analysis from the very outset not in their relations to reality, but in their relationship in reality” (p. 109). This approach is a considerable advance, but Zinchenko still looked for ways to mediate the interaction between the internal and the external. Zinchenko’s solution was “living movement and liberated action” (p. 110 ff.). Living movement involves holistic action in which “mind and body must comprehend, through some sort of nonrational, nonreasoned means, the most complex physics of the concrete object situation (i.e., statics, dynamics, kinematics, etc.) and coordinate this with bodily bio-mechanics” (p. 113). The notion of a coordination of relations in reality comes much closer to Dewey’s notion of functional coordination than Leont’ev’s structural correspondence. We could view the “concrete object situation” and “bodily bio-mechanics” as subfunctions of a single, holistic functional coordination. Zinchenko could not quite give up on the dualism of inner and outer, or the requirement to mediate it. Dewey’s theory of “trans-action” lies further along the trajectory of life activity we have plotted from Vygotsky to Zinchenko.

For Dewey, once we begin to think of individuals as functional “life processes” or activities, it becomes plain that the distinction between internal and external is only a practical methodological distinction, not an ontological one. The same holds for their interaction. Dewey (1925/1981) wrote, “a living organism and its life processes involve a world or nature temporally and spatially ‘external’ to itself but ‘internal’ to its functions” (p. 212). Oxygen, food, and water are external to our existence, but internal to our functioning. Unless oxygen, food, and water sometimes become internal to a given Homo sapien’s existence, survival is impossible. We “consume” epistemological objects much the same way. There is no more reason to think that anything internal to our mind resembles anything external to it than there is to think that chemically decomposed food “in” our body resembles food on the hoof or in the tree.

In fact, once we begin to think in terms of life functions, the distinction between internal and external appears increasingly arbitrary. The skin provides one such useful distinction, but it is not ultimate. As Dewey (1925/1981) insisted

The thing essential to bear in mind is that living as an empirical affair is not something which goes on below the skin-surface of an organism: it is always an inclusive affair involving connection, interaction of what is within the organic body and what lies outside in space and time, and with higher organisms far outside. (p. 215)
Thinking functionally, we soon realize no organism’s activity, including that of *Homo sapiens*, is ever simply located; all activity, not only cognitive activity, involves spatial, social, and historical distribution. Understanding individuals as distributed functions, it soon becomes clear that functional *coordination* must replace structural *correspondence* in the vast majority of cases.

Eventually, Dewey pushed his functionalism beyond simply describing “inter-actions” to a theory of “trans-actions.” This inevitably lead him to what I call, following Tiles (1995), “a world without withins.” We do not so much inter-act with food, water, and so forth as trans-act with it. Existence is an event that flows through us as we flow through it. We cannot think in terms of lumpy substances with simple locations in such an open and porous world; we can think only in terms of functions and events. I see Dewey’s theory of functional “trans-action” as his greatest potential contribution to activity theory and discuss it at length in the next section. We should understand mediated “external” and “internal” inter-actions as a single functional trans-action; or, if you prefer, a single function consisting of two subfunctions.

Engeström and Miettinen (1999) next turn to Dewey’s (1916/1980) remarkable, though rarely referred to, definition of “practice” from *Essays in Experimental Logic*. I expand on the quote slightly to show that inquiry for Dewey is a naturalistic life function:

> It means that knowing is literally something we do; that analysis is ultimately physical and active; that meanings in their logical quality are standpoints, attitudes and methods of behaving toward facts; and that active experimentation is essential to verifications. Put in another way it holds that thinking does not mean any transcendent states or acts [idealism] suddenly introduced into a previously natural scene, but that the operations of knowing are … natural responses of the organism, which constitute knowing in virtue of the situation of doubt in which they arise and in virtue of the uses of inquiry, reconstruction, and control to which they are put. (p. 367)

For Dewey, knowing is a process involving symbolic and existential operations. An experiment is a sequence of existential operations (actions) that fix the truth of a knowledge claim by examining its consequences. That is why Dewey spoke of “experimental logic.” Logic for him is an empirical affair. Knowledge is, literally, a product of a constructive process; it is something we make.


> The object of knowledge is not something with which thinking sets out, but something with which it ends: something which the processes of inquiry and testing, that constitute thinking, themselves produce. Thus the object of knowledge is practical in the sense that it depends upon a specific kind of practice for its existence. (p. 368)

Objects, essences, or forms of knowledge for Dewey are products, constructions of a practical process of inquiry. Earlier in the same paragraph as the passage just cited, Dewey concluded, “To conceive of thinking as instrumental to truth or knowledge, and as a tool shaped out of the same subject-matter as that to which it is applied, is but to return to the Aristotelian tradition about logic (p. 368). Dewey’s “instrumentalism” emanates from the long tradition of having an *organon* (from the ancient Greek for “tool” or “instrument”), a systematic method for acquiring knowledge. It is the name given to Aristotle’s six treatises on logic; the works scorned in Francis Bacon’s *Novum
Dewey’s even newer organum secures many post-modern possibilities by reconstructing the Aristotelian organon.

Dewey’s reconstruction requires jettisoning the classical metaphysics of eternal and immutable essences. Instead of inquiry discovering antecedently existing metaphysical essences, essences are the constructed product of logical inquiry. The analogy goes like this: Existence is like the event of natural grapes on the vine. Linguistic meanings are like the press that wrings juice from the grapes. Logical essence, the product of inquiry, is like distilled wine. All meanings and essences are products of active constructive processes subject to human need, interest, thought, and purpose, though we never create ex nihilo.

Dewey carefully distinguished existence, the topic of metaphysics, from essence, the topic of logic; linguistic meaning is the bridge. Existence is the given; meaning and essence is taken and made. It is a distinction not a dualism because linguistic meanings and logical essences obviously “exist.” Meanings and essences are the refined products of active operations upon existence carried out for our practical purposes.

In Logic: The Theory of Inquiry, Dewey (1938/1986) wrote, “The name objects will be reserved for subject-matter so far as it has been produced and ordered in settled form by means of inquiry; proleptically, objects are the objectives of inquiry” (p. 122). This is a clear statement of all that ontological objectivity implies for Dewey. Something is objective if every competent member of a community can arrive at the same object by carrying out the same practical operations on that which existence gives us to “work” with. Objects of knowledge, essences, are whatever remains constant under a specifiable set of operational transformations. Much the same holds for linguistic meanings. Becoming initiated into some social practice requires learning to perform the systematic operations necessary to secure the desired meanings, essences, or goods of the practice. Dewey (1925/1981) used the phrase “the philosophic fallacy” to describe the “conversion of eventual functions into the antecedent existence” (p. 34). Later, Dewey (1931/1985) called this fallacy the “neglect of context” (p. 17).

Engeström and Miettinen (1999) believed Dewey’s stance on objects of knowledge has “a family relationship to Leont’ev’s ideas of object and motive construction as central mechanisms of transformation of activity” (p. 6). They are only partially right. As evidence of the relationship, they cited the following passage from Leont’ev (1978):

Thus, the object of activity is twofold: first in its independent existence as subordinating to itself and transforming the activity of the subject; second, as an image of the object, as a product of its property of psychological reflection that is realized as an activity of the subject and cannot exist otherwise. (p. 6)

What Leont’ev (1978) described is a dialectically transformative “inter-action” between an object and a subject mediated by practical activity beginning with an external object. Also, note that we are talking about the object as the product of the subject’s “psychological reflection.” There are hints of dualism and “the philosophic fallacy.” Drawing the existence versus essence distinction would help.

Referring to Dewey’s (1922/1983) Human Nature and Conduct, Engeström and Miettinen (1999) observed that he “argues forcefully that goals are formulated and developed during the process of studying and orienting to the objective conditions of activity. Goals are therefore ‘milestones’ in the course of activity, not its purpose or ultimate motive” (p. 6). They compared this stance to that of Leont’ev (1978):
Besides, isolation and perception of goals by no means occur automatically, nor is it an instantaneous act but a relatively long process of approbation of the goals by action and by their objective filling … . The individual, justly notes Hegel, “cannot determine the goal of his acting as long as he has not acted.” (p. 65)

There are subtle, though important, differences between Dewey and Leont’ev on this point, however. Let us begin by looking at Dewey.

It is important to distinguish Dewey’s instrumentalism from that of positivists and technocrats. Dewey (1938/1986) stated that “rationality is an affair of the relation of means and consequences, not of fixed first principles as ultimate premises” (p. 17). For Dewey all reasoning is practical means-ends reasoning. Even “pure” logicians seek the abstract results of their proofs; they value those consequences and must exercise imagination to obtain them. Science, ethics, and aesthetics overlap.

Unlike modern champions of instrumentalism, means constitute the end or consequence for Dewey, just as bricks, artisanship, and mortar constitute the building upon completion. The experienced builder may tell what kinds of tools workers used on the job and can surely evaluate the quality of the artist who executed the work as well as the architect’s design. Connecting means with end is not linear; Dewey (1915/1979) insisted on “the thoroughly reciprocal character of means and end in practical judgment” (p. 37). Dewey spoke of intentional “ends-in-view” that serve to guide inquiry at every stage of the process; it is a means to its own realization. Ends-in-view are constantly adjustable. There is back-and-forth playfulness to Dewey’s theory of inquiry. In his book, Theory of Creative Action, Joas (1996) declared

Dewey rejects the common tendency to distinguish play from work on the grounds that the former is goal-free. According to Dewey, play most certainly does involve goals in the sense of an inner regulation of action … . [T]he goal orientations involved in play are not fixed externally and maintained irrespective of inner resistance to them. Those who play can be said to be free because they are able to abandon or redefine the current goals if their actions no longer promise fulfillment. (p. 155)

Joas thought Dewey’s theory of playful inquiry yields a creative “non-teleological interpretation of intentionality” (p. 157). The overarching intention (motive) is to secure and sustain functional coordination; teleological goals are simply subfunctions of the larger functional coordination. The operations of inquiry are also subfunctions of functional coordination. We may view functional coordination, goals, and operations as units for the analysis of activity.

An excessively teleological view of intentionality may have influenced Vygotsky (1925/1997) when he wrote, “As Marx said, they first build their creation in their imagination. The result of the labor process existed in an ideal form before the beginning of this work” (p. 68). Perhaps Marx and Vygotsky allowed more transaction between idea and object than this statement suggests. Leont’ev (1978) clearly rejected rigid intentionality when he asserted that we must not “accept a one-sided dependence of external activity on a psychic image representation of goals or mental plan directing activity” (p. 56). The crucial question is how playful were Marx, Vygotsky, and Leont’ev willing to be with this idea.

“Ends-in-view” are teleological, but they are fluid and morphological during the process of inquiry; they merely serve as guides, as means to the end. An existential end, the situation we get at the end of inquiry, is most likely not the ideal end-in-view with which we started. Dewey
(1925/1981) insisted that “the difference between means and end is analytic, formal, not material and chronologic” (p. 280). The existential situation is just what it is; it is a distinction of the inquirer’s language or logic to say what in the situation is means and what is ends. It expresses human intention: needs, desires, interests, and purposes, including theoretical and methodological purposes. That is all right, as long as we do not confuse existence with essence or neglect the context. All action carried out in an infinitely complex universe is bound to have unintended consequences.

Dewey often spoke of functionally “coordinating” a situation, or context, instead of means-ends connections. Inquiry seeks artistically to trans-form a situation, which includes the agent, to resolve physical need, emotional disharmony, and cognitive doubt. He rejected the form versus content distinction in all its disguises. For him, method was not separate from subject matter. For Dewey (1916/1980), “Method means that arrangement [coordination] of subject matter which makes it most effective in use. Never is the method something outside of the material” (p.172). Here is Dewey’s best definition of inquiry: “Inquiry is the controlled or directed transformation of an indeterminate situation into one that is so determinate in its constituent distinctions and relations as to convert the elements of the original situation into a unified whole” (p. 108). Inquiry functions to transform indeterminate contexts into unified, determinate wholes that allow action to continue. Sometimes agents must transform their needs and desires before achieving unification. Achieving and maintaining the functional coordination of action is the “ultimate motive” for Dewey (1935/1987); goals are indeed useful, but each “marks out milestones but does not show the road” (p. 511).

There are three levels of analysis in Leont’ev’s (1978) theory of activity. Wertsch (1985) diagramed these levels as follows:

Activity—Motive

Action—Goal

Operation—Conditions

The last two seem to correspond to the teleological goals and the operations of inquiry that are the subfunctions of functional coordination, and to a considerable extent they do. The analogy is complete if Dewey’s notion of functional coordination corresponds to Leont’ev’s notion of “motive,” but it does not. In the following passage, Leont’ev (1978) drew close to Dewey’s theory of transactional coordination:

All activity has a circular structure …. Now the circular character of the processes that realize the interaction of the organism with the environment appears to be universally recognized …. [T]he psychic reflection of the object world is generated directly not by external forces … but by those processes through which the subject enters into practical contact with the object world …. In other words, a double transfer is realized: the transfer object (process of activity) and the transfer activity (its subjective product) …. [T]he transfer of the process into the form of the product does not take place only at the pole of the subject. Even more clearly it takes place at the pole of the object transformed by human activity. (p. 53)
Unfortunately, Leont’ev retreated into mediated interaction between the external object and the internal image. The result is reflection rather than transaction.

Dewey (1925/1981) used the phrase “intellectualism” to denigrate those views that claim “all experiencing is a mode of knowing” (p. 28). For Dewey, our primary relation to reality is anoetic. Leont’ev did not fall victim to this fallacy. Consider the following instructive example that Leont’ev (1978) borrowed from I. M. Sechenov:

“Hunger is capable of raising an animal up on its feet, capable of giving the hunt a more or less fervent character, but there is no element in hunger that would direct the hunt one way or another or modify it to make it conform to the requirements of the location or of chance meetings.” (pp. 53–54)

Leont’ev used this example to draw what for him is a crucial distinction:

[T]he distinction of need as an internal condition, as one of the necessary precursors of activity, and need as that which directs and regulates concrete activity of the subject in an objective environment . . . .

[N]eed appears only as a condition of the need of the organism and is in itself not capable of evoking any kind of positively directed activity; its function is limited to the activating of appropriate biological function and general excitation of the motor sphere apparent in nondirected seeking movement. Only as a result of this “meeting” with an object that answers it does it first become capable of directing and regulating activity. (pp. 53–54)

Note that the inner need must “meet” the outer object for movement to become activity. This meeting takes us to the core of what Leont’ev meant by “activity” as a theoretical concept. Leont’ev (1978) declared, “According to the terminology I have proposed the object of an activity is its true motive” (p. 62). Like Leont’ev, most theorists think of motivation as extrinsic, but it is a mistake made by not seeing the hidden dualism.

The mistake rests at the core of Leont’ev’s theory of action. Leont’ev (1978) concluded, “Thus the concept of activity is necessarily connected with the concept of motive. Activity does not exist without a motive” (p. 62). One wonders how the animal in the example mentioned earlier initiated the activity of “the hunt” without an object (food); such concerns point to problems in Leont’ev’s analysis. Why not consider “nondirected seeking movement” activity? This problem cascades though Leont’ev’s hierarchy of action:

We call a process an action if it is subordinated to the representation of the result that must be attained, that is, if it is subordinated to a conscious purpose. Similarly, just as the concept of motive is related to the concept of activity, the concept of purpose is related to the concept of action. (p. 63)

This statement also strongly suggests that Leont’ev’s theory of intentional action is less playful though more teleological than it earlier appeared. Making activity dependent on the consciousness of a cognitive object flirts with intellectualism.

Contrasting Leont’ev’s theory of activity and motive with Dewey’s theory of motivation discloses the difference between mediated “inter-action” versus functionally coordinated “trans-action.” Dewey (1932/1985) insisted on “the essential unity of the self and its acts” (p. 288). Although his concern here was with moral action, what Dewey said conveys to the core of his entire theory of activity. Dewey declared
The identity of self and an act … is the key to understanding the nature of motives and motivation. Unless this unity is perceived and acknowledged in theory, a motive will be regarded as something external acting upon an individual and inducing him to do something. (p. 289)

Ironically, Leont’ev’s theory of activity fails to fully grasp the unity of the act. Once we do, said Dewey (1932/1985), we will realize the obvious truth that “the self, like its vital basis the organism, is always active; that it acts by its very constitution” (p. 289). The live creature acts by virtue of being alive; something external acting on the live creature, or the self, can only redirect, or re-coordinate, action. Leont’ev’s distinction between “seeking movement” and object-directed action seems to acknowledge Dewey’s point, until we realize that it is internal “need” that initiates seeking movement. It is very hard not to see “movement” as activity. The only way Leont’ev succeeded in doing so, I believe, was by assuming all action is intentional and teleological. Certainly, mental action is intentional, although not necessarily teleological, but an understanding of activity at large should account for anoetic as well as noetic action.

Nothing motivates action in a living being; needs and objects only transform it, give it intentionality, and, perhaps, direction. Dewey (1932/1985) clarified his doctrine by considering the effect of a stimulus:

For the organism is already active, and stimuli themselves arise and are experienced only in the course of action … . The function of a stimulus is … to change the direction of the action already going on. Similarly, a response to a stimulus is not the beginning of activity; it is a change, a shift of activity in response to the change in conditions indicated by a stimulus … . Motives, like stimuli, induce us to alter the trend and course of our conduct, but they do not evoke or originate action as such. (p. 290)

Dewey’s point is that the always already active self constitutes the stimuli or motives of action as much as those motives guide or direct action. What we have here is a transactional circle that looks very much like the one Leont’ev described earlier. The difference, and it is a vital difference, is that Dewey’s circle expresses the unity of a single “trans-action” whereas Leont’ev’s depicts the mediated dialectical “inter-action” of external and internal.

For Dewey (1932/1985), the mistake arises from the fact that the term “motive” is ambiguous:

It means (1) those interests which form the core of the self and supply the principles by which conduct is to be understood. It also (2) signifies the objects, whether perceived or thought of, which effect an alteration in the direction of activity. (p. 290).

It seems that Dewey set up a circle of interacting internal interests and external objects that resembled Leont’ev’s interaction of need and object, but his analysis headed in the opposite direction. Dewey began with the holistic unity of the existential trans-action and then logically analyzed it as an inter-action. Dewey indicated

Any concrete case of the union of the self in action with an object and end is called an interest … an interest is, in short, the dominant direction of activity, and in this activity desire is united with an object to be furthered in a decisive choice … . On the other hand, an interest is objective … . There is no interest at large or in a vacuum; each interest imperatively demands an object to which it is attached and for the well-being or development of which it is activity solicitous. (p. 290)
Dewey provided a valuable example of what he meant:

A motive is not then a drive to action, or something which moves to doing something. It is the movement of the self as a whole, a movement in which desire is integrated with an object so completely as to be chosen as a compelling end. The hungry person seeks food. We may say, if we please, that he is moved by hunger. But in fact hunger is only a name for the tendency to move toward the appropriation of food. To create an entity out of this active relation of the self to objects, and then to treat this abstraction as if it were the cause of seeking food is sheer confusion. (p. 291)

Leont’ev’s example, borrowed from Sechenov, hypostatizes the name “hunger” before committing “the philosophic fallacy” by turning it into an explanatory causal principle; Leont’ev did the same with the intentional object. Such errors often arise when we begin with a dualism and then must seek something to mediate the interaction. It is rather like trying to get back to the holistic union of the live creature after having dissected it. Beginning with the transactional unity, we at least have a sense of what is lost to the necessity of methodological simplification and analysis.

Dewey (1932/1985) concluded his analysis of motive and motivation this way:

Because an interest or motive is the union in action of a need, desire of a self, with a chosen object, the object itself may, in a secondary and derived sense, be said to be the motive of action . . . . It is true enough when we take the whole situation into account that an object moves a person; for that objects is a moving force, includes the self within it. (p. 291)

If we begin with the holistic transactional unity (functional coordination) in existence, we may derive analytical units from it as useful methodological simplifications for the conduct of logical inquiry. Harm only arises if we construct a false dualism or neglect context.

Engeström and Miettinen (1999) concluded their review of some of the common features of Deweyan pragmatism and activity theory by remarking, “in contrast to activity theory, the absence of cultural mediation is evident in much of Dewey’s work” (p. 6). I am not quite sure what they meant by this, especially because they mentioned Larry Hickman’s (1990) book that argues that we may read Dewey’s entire philosophy as a philosophy of technology.3

Dewey is a philosopher of culture for whom tools of mediation are immensely important. Dewey’s entire theory of inquiry, his logic, is instrumental, and it emerges from his instrumental theory of language. Meanings function as tools for Dewey (1925/1981) because we use them as means to consequences. He gave “the definition of a tool” as something that “remains a thing used as an agency for some concluding event” (p. 105). The use is the crucial insight. A stick may just lie there on the ground, but when used to dig roots for consumption, it acquires functionality, it becomes a tool. When used for a purpose, what merely exists acquires meaning and maybe, after inquiry, essence. Dewey generalized this definition in a compelling manner when he stated: “As to be a tool, or to be used as means for consequences, is to have and to endow with meaning, language, being the tool of tools, is the cherishing mother of all significance” (p. 146). A tool is a meaning function, language is just a very special instance of that function. Because to have a mind is to possesses linguistic meanings, Dewey drew the obvious conclusion when he identified “the

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3 Hickman is now the director of the Center for Dewey Studies at Southern Illinois University at Carbondale.
self as the tool of tools, *the means in all use of means*” (p. 189). We should think of even machine tools as holistic, transactional, and functional.4

We have investigated many of the more prominent themes of Dewey’s theory of activity, including the distinction of existence and essence, the notion that objects are the objective of inquiry, instrumentalism, and motivation. We have also identified such fallacies as dualism, the neglect of context, and intellectualism that sometimes threatens activity theory. The remainder of this article focuses on the following: (a) Dewey’s theory of “trans-action,” (b) his theory of functional coordination, and (c) understanding the world as without a within. My article concludes with a comment on Dewey’s theory of the mental, intentionality, and semiotics.

FROM SELF-ACTION TO TRANS-ACTION: OVERCOMING WESTERN METAPHYSICS IN THE “COPYRIGHT AGE”

Dewey and Bentley (1949/1989) distinguished three forms of action:

- **Self-action**: where things are viewed as acting under their own powers.
- **Inter-action**: where thing is balanced against thing in causal interconnection.
- **Trans-action**: where systems of description and naming are employed to deal with aspects and phases of action, without attribution to “elements” or other presumptively detachable or independent “entities,” “essences,” or “realities,” and without isolation of presumptively detachable “relations” from such detachable “elements.” (pp. 101–102).

Modern theories of mind, self, and individuality in the West are dominated by themes of self-action. Traditional notions of “rationality,” “soul,” and “free will” are all instances. Dewey and Bentley (1949/1989) also rejected such reductionist explanatory principles as “selfish genes,” “neural centre,” or “I. Q.” as merely modern descendents of the older sources of self-action (pp. 118, 122, and 124, respectively). Once mounted within some entity, these motors of self-action explain everything, often deterministically. Many of these notions remain mysterious or undefinable in themselves; so, they are often placed in supposedly decontextualized realms of pure thought.

The detached character of the seat of self-action leads to the knower versus known dualism, among many others. Dewey and Bentley (1949/1989) wrote:

> [W]e find Self-action as the stage of inquiry which establishes a knower … residing in, at, or near the organism to do (i.e., to perform, or have, or be—it is all very vague) the knowing. Given such a “knower,” he must have something to know; but he is cut off from it by being made to appear as a superior power, and it is cut off from him by being made to appear just as “real” as he is, but of another “realm.” (p. 127)

The traditional problems of epistemology arise from dualism; how do we connect the knower with the known, minds with matter (including one’s own body), or internal with external? Similarly, sociology, economics, and political science struggle with the individual versus culture dualism.

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4 Wertsch (1998), who champions a tool-mediated theory of goal directed action, often referred to Dewey in this connection.

5 In Dewey and Bentley (1949/1989), Bentley wrote chapters 1, 8, and 9, whereas Dewey wrote chapter 10. I do not refer to work from the chapters written by Bentley alone.
Activity theory rejected self-action in favor of inter-action from the beginning; it now needs to move on to trans-action. Thinking interactionally is already counter-intuitive given the ideas that have dominated Western thought, especially since the 17th century. Explicating trans-action involves still more complex hermeneutic problems. In order to understand the parts it is necessary to understand the whole, yet to understand the whole it is necessary to understand the parts. It is important, then, to enter the hermeneutic circle at the proper place.

Dewey and Bentley (1949/1989) elucidated a list of contrasts between inter-action and trans-action. These contrasts allowed them to explicate the difficult terms of trans-action in the more familiar, although still rather counterintuitive, terms of inter-action. There is a recursive pattern to these contrasts. Once readers intuit the pattern of any part, they will begin to perceive the whole. We enter the circle by contrasting the term “Activity”:

In terms of Activity. If inter-action views things as primarily static, and studies the phenomena under their attribution to such static “things” taken as bases underlying them, then—

Transaction regards extension in time to be as indispensable as is extension in space (if observation is to be properly made), so that “thing” is in action, and action is observable as thing, while all the distinctions between things and actions are taken as marking provisional stages of subject matter to be established through further inquiry. (pp. 113–114)

In this regard, activity theory is well on its way to becoming trans-action theory.

Dewey is a neo-Darwinian and in a Darwinian universe everything evolves, everything is in process, every individual “thing” is really a spatially and temporally extended event. In Dewey’s (1925/1981) philosophy, existence or “nature is viewed as consisting of events rather than substances, it is characterized by histories” (pp. 5–6). Dewey insisted

An event has no antecedent fixed meaning or essence; instead, meaning and essence emerge as a consequence of transactional processes. Unique human beings, you and I, are also individual events; so too is our creation and use of cultural tools, including language and inquiry.

Events, including developmental processes, are “durational-extensional.” Dewey and Bentley (1949/1989) proclaimed, “Our own procedure is the transactional, in which is asserted the right to see together, extensionally and durationally, much that is talked about conventionally as if it were composed of irreconcilable separates” (p. 67). Transactional thinking allows us to see things as belonging together functionally, such as lungs and oxygen producing flora, that are usually never connected. Transactionalism allows us to recognize them as subfunctions of a larger function.

The classicist Schadewaldt (1979) reflected on “physis,” the root of the Greek word for nature:

Physis is never that “nature” out there where people make Sunday excursions, “in” which this and that occurs or this and that is such and such . . . . [T]he noun physis, like all Greek constructions with –sis, does not mean some object or material thing, but a coming-to-pass, an event. (p. 220)

Dewey naturalism comprehends nature this way.
Events are not substances, so they do not have simple locations in time or place. Dewey (1925/1981) insisted that “events, being events and not rigid and lumpy substances, are ongoing and hence as such unfinished, incomplete, indeterminate” (pp. 126–127). We are especially interested in the events of human biological, social, and psychological development.

A caterpillar and a butterfly are parts, phases of a single unified “durational-extensional” event; they belong together. Likewise, waves upon the ocean, or electromagnetic waves in space, are events requiring temporal duration and spatial extension to disclose their full being. The same holds for a newborn child. All development is a “durational-extensional” event, but that is because every “thing” is an event. Events do not reveal themselves as an instantaneous temporal-spatial presence. Indeed, the very concepts of temporal instant or spatial point are idealized logico-mathematical constructions within a specialized form of inquiry. Likewise, we may distinguish relatively static developmental “stages” as terms of interactional inquiry, provided we do not confuse methodological descriptions for distinctions of existence.

Determining the context of a “durational-extensional” event is extremely difficult. Dewey (1925/1981), though, did provide a clue. He asked us to consider a criminal act where a person in one state sends poisoned candy to someone in another who eats it and dies. Where was the crime committed? Dewey answered, “If it be asked, ‘where’ a transaction is located, the only possible answer … appears in many cases to be that it is located wherever it has consequences” (p. 156). Distributed events must have distributed contexts. Small wonder the simplifications of self-action are so appealing.

Dewey and Bentley (1949/1989) discussed a series of contrasts between inter-action and trans-action that, in the course of inquiry, progressively shrink “durational-extensional” events; the series concludes with “objects.” Remember, objects are the objectives of inquiry, and are never some “thing” with which we start. Even the most seemingly stable objects, however, never completely shed their event quality.

Dewey and Bentley’s (1949/1989) first contrast concerns the description of events in the course of inquiry:

If inter-action 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 connections, then—

Transaction 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 inquiry. (p. 113)

We initiate inquiry with a vague qualitative description of events; these descriptions help determine the holistic qualitative situation. A transactional approach requires us to recognize the contingent and constructive characteristics of such descriptions.

Dewey and Bentley (1949/1989) next contrasted inter-action and trans-action in terms of the process of naming:

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7It is interesting to note that quantum mechanics is a wave mechanics. I am not advancing an argument from authority borrowed from physics, only trying to indicate that approaching existence as comprised of “durational-extensional” events is quite comprehensible at the start of the 21st century.
If inter-action is found where the various objects inquired into enter as if adequately named and known prior to the start of inquiry, so that further procedure concerns what results form the action and reaction of the given objects upon one another, rather than from the reorganization of the status of the presumptive objects themselves, then—

Transaction is inquiry which ranges under primary observation across all subject matters that present themselves, and proceeds with freedom toward the re-determination and re-naming of the objects comprised in the system. (p. 113)

Names name individual objects within our descriptions of some system such as caterpillar and butterfly, or baby, boy, student, husband, father, old man, and dead man. They are taken and used, and sometimes mis-taken. Inquiry itself is a transaction wherein the inquirer becomes a subsystem of the system undergoing inquiry. In a sense, all research is participant observation; naming is a process of identifying other participants, other subfunctions.

Dewey and Bentley (1949/1989) distinguished “Situation, Occurrence and Object as forms of Event:”

Event is durational-extensional; it is what “takes place,” what is inspected as “a taking place” …. The word “situation” is used with increasing frequency today, but so waveringly that the more it is used the worse its own status seems to become. We insist that in simple honesty it should stand either for the environment of an object (interactionally), or for the full situation including whatever object may be selectively specified within it (transactionally). (p. 68)

A situation is a durationally-extensionally occurring convergence of events. This characterization is of special interest to champions of situated and distributed cognition. Situated activity theories usually take “situation” or context interactionally. Often that is a very useful methodological simplification. Dewey and Bentley (1949/1989) further defined “situation” thus: “Event as subjectmatter of inquiry, always transactionally viewed as the full subjectmatter; never to be taken as detachable ‘environment’ over against ‘object’ ” (p. 71). Thinking about “situation” transactionally reminds us that environment and organism, or context and actor, are methodological distinctions within a single, unified, and ever-evolving subject matter.

Dewey and Bentley (1949/1989) defined “Object” thus: “Event in its more firmly stabilized forms—never, however, as in final fixations—always available as subjectmatter under transfer to situational inspection, should need arise as inquiry progresses” (p. 72). “Objects” are subfunctions named within larger functional situations fixed operationally for the practical purposes of inquiry; we produce them. Although durationally and extensionally contracted from situations, objects never lose their event quality. Still, for many theoretical, methodological, and practical purposes, we may treat them interactionally as perfectly stable. We may study a single day of a caterpillar’s development as it inter-acts with the constraints and affordances in a situation, or one day in a child’s school experience, if we so select, for the logical purposes of our inquiry. These designations are drawn from the larger existential event that is the caterpillar’s or the child’s life. Often, though, to understand a situation requires dilation of transactional consequences.8

8Engeström and Cole (1997) noted, “In his Logic, Dewey (1938) emphasized that a situation is not a single object or event. A situation refers to our experiencing of objects and events in connection to a contextual whole. Yet the shape and structure of that contextual whole is left ambiguous” (p. 302). By now Dewey’s notion of “situation” should appear less ambiguous, although perhaps far more complex.
A sad example is our inability to understand a child’s strange behaviors in class unless we know about her abusive home life.

“Objects” emerge through a process of functional differentiation from an organic whole that is only potentially differentiated in the way that eventually emerges. Once individuals emerge, they retain the status of functional parts, or subfunctions, of a now more complex organic whole, or function. Emergent individuation is the product of a developmental process rather than an antecedent condition. As Dewey (1938/1986) stated:

As undergoing inquiry, the material has a different logical import from that which it has as the outcome of inquiry. In its first capacity and status, it will be called by the general name subject-matter … . The name objects will be reserved for subject-matter so far as it has been produced and ordered in settled form by means of inquiry; proleptically, objects are the objectives of inquiry. (p. 122)

Earlier in the same work, Dewey made an even more general claim: “the [logical] forms originate in operations of inquiry” (p. 11). Dewey often preferred to use the gerund “knowing” in place of the substantive “knowledge.” Knowing is a trans-action. We must get over the notion that there is a divide between epistemology (knowing) and ontology (objects or things). We must overcome the “spectator” stance and realize the only access we have to reality is through our practical, active participation in it. Marx was fundamentally correct about that.

Distinguishing between the whole transactional system and the methodologically and theoretically simplified interactional subsystems more suitable for study reminds us that we are finite inquirers in an infinitely complex universe wherein there is always more than we can recognize. Another consequence of the trans-actional view is that it requires us to recognize that there are no sharp boundaries, no simple “in or out,” in holistic functionalism.

EMERGENT NATURALISTIC CONTINUITY THROUGH TRANSACTIONAL FUNCTIONAL COORDINATION

Dewey rejected as supernatural any psychology that postulates something beyond space, time, and circumstance; there is no room in his naturalism for psychic substances. Dewey (1925/1981) acknowledged his efforts were “an attempt to contribute to what has come to be called an ‘emergent’ theory of mind” (p. 207). He is a neo-Darwinian naturalist who affirms emergent plateaus of evolution. Every plateau, including mental functioning, involves properties that are unpredictable from the properties of precursory stages.

Dewey (1911/1978) delineated three general “plateaus” of emergent evolution. They are distinguished by the holistic intricacy of their functional structure. Higher levels presuppose the complexity of those below and emerge from them without discontinuity. The first one is the “physico-chemical.” Existence at this lifeless level, nonetheless, displays constant motion; it is not inert. Even at the lowest plateau of complexity, novel properties emerge that we cannot predict based on their constituent parts. Hydrogen is highly combustible, and oxygen sustains combustion; yet, in trans-active functional coordination, H2O extinguishes fire.

The next level is the “psycho-physical.” The hyphen expresses an emergent continuity that does away with the problem of relating the psychological with the physical. A living organism is a functionally complex chemical coordination. Dewey (1911/1978) provided the following definition:
“Any process sufficiently complex to involve an arrangement or coordination of minor processes which fulfills a specific end in such a way as to conserve itself is called a function” (p. 466). What Dewey called “minor processes” are “subfunctions” of larger functions. Dewey continued, “The sum total of functions, in their reciprocal adjustment to one another, constitute life, which accordingly, is defined in the same way as a function” (p. 467). Functionally coordinated living processes develop naturally from and with the rest of nature. Although this neo-Darwinian interpretation helps, what Dewey said next is only fully comprehensible from a transactional orientation: “Life (or functions, activities) includes within itself the distinction of Environment and Organism” (p. 467). Taken transactionally, the distinction between organism and environment (inner or outer) is only a useful methodological distinction; actual existence is a world without withins.

Life involves functionally coordinated trans-actions that maintain or enhance functioning. A transactional approach generalizes this idea to all systems. Dewey and Bentley (1949/1989) defined “trans-action” thus: “Functional observation of full system, actively necessary to inquiry at some stages, held in reserve at other stages” (p. 71). They illustrated this definition by observing that it is possible to carry out “the investigation of certain inter-actions of tissues and organs within the skin of an organism, while remembering, nevertheless, that the … ‘organism-in-environment-as-a-whole’ … must come into account before final reports are reached” (p. 103). We may inquire into the interacting subfunctions, the parts, including heart, lungs, or circulatory system, as independent “objects.” If it is the functional activities of “life” we wish to understand, then the function of respiration requires we understand oxygen, the flora that produce it as a by-product, and the fauna that depend on it.

Life includes the distinction of environment and organism within itself. We cannot fully understand the whole organism, the system, however, until we comprehend all the parts as one systematically unified whole that must carry out successful trans-actions with each other to sustain the systems (e.g., the organisms) existence. The heart is not in the body as a marble is in a jar; it is a subfunction coordinated with other subfunctions to comprise a functional, organic unity. We cannot fully understand a part severed from the whole to which it contributes, nor can the part sustain its existence without the whole. By analogy, the same holds for mind-in-culture-as-a-whole as for organism-in-environment-as-a-whole.

Dewey and Bentley (1949/1989) contrasted inter-action with trans-action regarding the relation between organism and environment:

If inter-action assumes the organism and its environmental objects to be present as substantially separate existences or forms of existence, prior to their entry into joint investigation, then—

Transaction assumes no pre-knowledge of either organism or environment alone as adequate, not even as respects the basic nature of the current conventional distinctions between them, but requires their primary acceptance in common system, with full freedom reserved for their developing examination. (p. 114)

Theories of inter-action such as Vygotsky’s and Leont’ev’s begin with two different entities, environment (situation or context) and organism (actor or agent), and then struggle with the problem of putting them back together via activity.

Biological functioning, viewed transactionally, does not admit of any sharp separation of internal and external; it is distributed. The same relation holds between consciousness and the world. Dewey and Bentley (1949/1989) provided a useful example:
A physiologist studying breathing requires air in lungs. He can, however, temporarily take for granted the presence of air, and so concentrate his own attention on the “lungs”—on what they do—and then make his statement in that form. He can, that is, for the time being, profitably treat the transaction as interactional when the occasion makes this advantageous. (p. 138)

Methodological simplification is useful unless we mistake the results for the full reality, thereby neglecting context. To understand a living being, a social being, or anything else mutually and reciprocally connected, it is necessary to understand the trans-actions of the entire sustaining system. According to Dewey (1922–1923/1983), “Any operative function gets us behind the ordinary distinction of organism and environment. It presents us with their undifferentiated unity, not with their unification. It is primary; distinction is subsequent and derived” (p. 376). Statically distinguishing organism from environment (or actor from situation) is often a good methodological decision that facilitates inquiry. Inter-active approaches are often useful, but never complete. The problem of individuation in activity theory is a difficult one, yet inquiry cannot proceed without clearly individuated “objects” (systems, subsystems, descriptions, names, objects, etc.) of study.

Dewey (1922–1923/1983) believed that all structure is functional; for him, “A function is a moving equilibrium of integration” (p. 377). The rhythm of life involves movement from harmonious functioning to disharmonious functioning (physical need and cognitive doubt), to the restoration of functioning (p. 378). This temporal rhythm provides the only basis in nature for distinguishing organism from environment, Dewey asserted:

“As a moving equilibrium, a function is serial or temporal. This temporal phase introduces the ground of distinction between organism and environment; that is between those sets of factors that represent the maintenance of function (organism) and those which intervene first as disturbing and then as restoring equilibrium (environment) … . In any non-temporal cross-section there is no basis for distinguishing organism and environment. (pp. 378–379)

What is organism and environment varies over time. Dewey elaborated: “Organism means … the present phase of action with reference to its bearing on an ulterior phase of a function; environment the intermediate phases as affected by the initial and as affecting the eventual phase” (p. 379). Action differentiates rather than unites organism and environment. Dewey quickly generalized the point to include subject and object and, by implication, agent and context:

The distinction of subject and object is not simultaneous but has reference to phases or stages in a series. The self, subject, individual, like organism, refers to just those factors in a moving and re-organizing function which at any point in the process immediately and directly determine the ongoing of the process. (p. 379)

The organism, subject, or agent is the transitory immediate phase of action within the larger trans-action that acts to maintain the moving functional equilibrium, the dynamic unity. The environment, object, or context is the intermediate phase that disrupts, obstructs, or sustains functioning. We are lead to a stunning conclusion: In a moving functional equilibrium, what is environment, situation, or context and what is organism, subject, or agent evolve over time. Developmental systems theory emphasizes symmetrical interactions. Such inter-actions are, in effect, trans-actions. Two prominent proponents of developmental systems theory, Griffiths and Gray (1994), recognized, “Organism and environment are both evolving” (p. 300). They too drew
the same conclusion; under such circumstances “the separation of organism and environment is called into question” (p. 300).


We have been discussing the “physico-chemical” and “psycho-physical” plateaus of emergent evolution; we may now consider the third, that of “body-mind.” This plateau, according to Dewey (1925/1981), “is that of association, communication, and participation. This is internally diversified, consisting of individualities. It is marked throughout its diversities, however, by common properties which define mind as intellect; possession of and response to meanings” (p. 208). All meanings, hence all mental functioning, for Dewey emerge culturally through communication. Dewey insisted, “Through speech a person dramatically identifies himself with potential acts … he plays many roles … thus mind emerges” (p. 135). If life is a single functionally coordinated trans-action containing within itself the distinction of environment and organism, then mental life (body-mind) is a single functionally coordinated trans-action containing the distinction of cultural environment and individual mind within itself.

Organized cultural structure provides more complex functioning than is found on either of the previous plateaus. Again, there is continuity of emergence:

But body-mind simply designates what actually takes place when a living body is implicated in situations of discourse, communication, and participation. In the hyphenated phrase body-mind, “body” designates the continued and conserved, the registered and cumulative operation of actors continuous with the rest of nature, inanimate as well as animate; while “mind” designates the characters and consequences which are differential, indicative of features which emerge when “body” is engaged in a wider, more complex and interdependent situation. (p. 217)

The cultural emergence of meaning, mind, and self involves Dewey’s naturalistic semiotics, and carries us beyond the scope of this article, although the pattern is continuous with, and emerges from, what we have thus far discussed.9

Here it is enough to recognize that intelligent functioning always involves the body, and the body is always intimately involved in any situation. In the transfer of knowledge, the body is a prime bearer of meaning. Dewey (1925/1981) observed, “Every ‘mind’ that we are empirically acquainted with is found in connection with some organized body. Every such body exists in a natural medium to which it sustains some adaptive connection” (p. 212). For Dewey, “Organic body occupies a distinctive position in the hierarchy of being; it is the highest actuality of nature’s physical potentialities, and it is in turn the potentiality of mind” (p. 192). There are no disembodied, fully decontextualized psychic entities, cognition, or mental functions.

For Dewey, meanings and minds emerge simultaneously in a transactional functional coordination. Dewey (1925/1981) depicted mind as “the whole system of meanings as they are embodied in the working of organic life” (p. 230). Mind, Dewey found, is “an added property assumed

9For an attempt to explicate Dewey’s theory of meaning, mind, and self see Joas (1996) and Garrison (1998).
by a feeling creature, when it reaches that organized interaction with other living creatures which is language, communication” (p. 198). We do not have space here to develop this idea, but consider the following passage:

A requests B to bring him something to which A points … . There is an original mechanism by which B may react to A’s movement in point. But natively such a reaction is to the movement, not to the point, not to the object pointed out. But B learns that the movement is a pointing; he responds to it not in itself, but as an index of something else. His response is transferred from A’s direct movement to the object to which A points … . He perceives the thing as it may function in A’s experience, instead of just ego-centrically … . Something is literally made common in at least two different centres of behavior [action]. To understand is to anticipate together … . [It is] a transaction in which both participate (pp. 140–141).

Most primordially, A and B may use each other to co-create (take and use) some object (O). In such trans-actions, A, B, and O emerge (or grow) simultaneously. If we imagine A as an initiate member of some community of practice and B as a tyro, then we have something very much like Vygotsky’s zone of proximal development.

Once we come to possess shared meaning, mind emerges for Dewey. What were only gestures or gesticulations become signs about objects. Gradually communication gives way to abstract conceptualization. Vygotsky and Leont’ev provided very similar accounts to Dewey’s, but there are important differences. For Vygotsky and Leont’ev, the process previously described above involves internalization of an external process. The result is “presentability to the subject of a picture of the world,” an image, that is, something inner that corresponds structurally with (“reflects”) something outer. For Dewey, all we get is the functional coordination of a transaction.

**DEWEY’S THEORY OF MENTALITY AND SEMIOTICS: TOWARD A WORLD WITHOUT WITHINS**

Intentionality is the distinguishing feature of mental, or psychic, phenomena. The word intention derives from the Latin intendo, which means to “point” at, “aim” at, or “extend” toward something. Intentionality is not, therefore, an intrinsic property of some psychic substance; rather, it involves “aboutness.” Mental acts need have no intrinsic properties. We think, know, have emotions, or have beliefs about objects; the most distinctive mental acts always purport to refer.

Although signs are physical entities, they have reference; they are about objects that are often absent, but they do not intend alone. Recall Dewey’s comments regarding tools and means-consequence relations discussed earlier. Signs are mediating tools for Dewey (1925/1981), who wrote, “An intellectual sign denotes that a thing is not taken immediately but is referred to something that may come in consequence of it … . [T]he definition of a tool … remains a thing used as an agency for some concluding event” (p. 105). When live organic creatures actively take something and use it as a tool referring to something else, the creature creates a sign, a tool of actions that is about something else, some other object. This taking and using is the basic nature of semiotic activity. Semiotic activity clearly involves intentionality, and many consider it the highest form of abstract

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10 This section draws heavily on Tiles (1995).
mental activity. Note, though, that all we have is the functional coordination of three things: (a) a natural biological being, (b) a natural object or event that is used to refer to (c) another natural object or event. Mental action emerges in the transaction without any break in continuity that could cause any dualism between mental and physical, internal or external. What we have is a trans-action wherein nothing is necessarily within anything. Neither do we need any world picture, image, and so forth.

Consider Dewey’s (1922/1983) definition of the “mental”:

But a thing which has or exercises the quality of being a surrogate of some absent thing is so distinctive, so unique, that it needs a distinctive name. As exercising the function we may call it mental. Neither the thing meant nor the thing signifying is mental. Nor is meaning itself mental in any psychical, dualistic, existential sense … . A probable rain storm, as indicated to us by the look of the clouds or the barometer, gets embodied in a word or some other present thing and hence can be treated for certain purposes just as an actual rain storm would be treated. We may then term it a mental entity. Such a theory, it will be noted, explains the mental on the basis of a logical function. It does not start by having something psychical under a logical operation. (pp. 56–57)

Remember, the accent in “logical operation” is on the physical, functional operation.

The barometer is a tool created as a means to the consequence of measuring air pressure that, in turn, is a means of predicting weather. What of the creator? Dewey (1925/1981) stated that we should “understand operations of the self as the tool of tools, the means in all use of means” (p. 189). People, functioning as the tools of tools, communicate, sometimes across vast durational-extensional distances, by means of the tools they create. That is why Dewey (1938/1986) said:

A tool or machine, for example, is not simply a simple or complex physical object having its own physical properties and effects, but is also a mode of language. For it says something, to those who understand it, about operations of use and their consequences. (p. 52)

A tool, a barometer, speaks to the self if we know how to interpret what it says, “interpretation being,” as Dewey (1925/1981) put it, “always an imputation of potentiality for some consequence” (p. 147).

In the example described earlier, we may imagine A using B as a means to the consequence of obtaining some object (O) where A, B, and O are meanings or essences already distilled from existence. A, perhaps a beginner in a community of practice, may use B as a means to O. In such a functional relation, B operates as a tool, a sign of O. If A learns, then she may replace B with an abstract sign (S) of O, perhaps using a word or gesture given by B. Eventually, A learns to use O as a sign of something remote in space and time; for example, she learns to use a barometer to predict tomorrow’s weather.

Suppose A, let us call her Ausha, is leaving her house one bright sunshiny morning, and, upon looking at the falling barometer, takes her umbrella. If we know how to interpret this scene, we may safely conjecture that the barometer motivated her belief that it may rain later in the day. Ausha is a biological organism, the barometer is a physical tool, and the potential rainy weather is a physical event. All that is mental is the way the barometer functions to coordinate Ausha’s anticipatory action. More exactly, what we have is a functional coordination involving an agent, a sign, and a signified event. We could even write a grossly oversimplified quasi-mathematical function:
A(a) = (s, o) where a is some agent, A the action performed, s the sign, and o the object or event. We could also “solve” the equation for s and o. Personally, I find all of this far too reductive because it is overly intellectualized, overly simplified, and dangerously decontextualized; I am only trying to illustrate a point about functional coordination.

Dewey’s analysis of “psychic” activity describes a transactional three-term functional coordination that moves most of the mental act out into the world, but unlike many post-structuralism analysis, it does not eliminate the subject or agent. Tiles (1995) described the situation this way:

Instead of a subject or agent whose state or act refers to something beyond the subject or agent, we have a subject or agent whose act is to take something beyond itself . . . . Dewey’s criterion of the mental is not the mere presence of “aboutness” or “reference beyond,” but the use of that “aboutness” or “reference” in things beyond it. (p. 144)

Vygotsky, Leont’ev, and Zinchenko all assumed a two-term relation of “reflection” in which a dualism of inner and outer that activity merely mediates.

In a three-term schema, there is no need to assume that the “external” object is somehow an immanent component (world picture, image, idea, reflection, etc.) of the mind. It may turn out that what occurs subcutaneously involves distributed parallel processing configured (coordinated) over the entire sensory-motor network. Given how such networks function, it is unlikely anything internal to the processing corresponds structurally to anything external. The internal configuration is merely a part or phase of a three-term transactional functional coordination. I am not saying that distributed parallel processing is actually a part of the mental process, though it is quite possible. All I want to show here is how easy it is to give up the notion of immanent meaning, ideas, images, and so forth that somehow correspond to external objects or events.

Once we begin to think of mental functioning, intentionality, as non-teleological transactional, and functional coordination, we may give up the dualism of inner and outer. Once we do, we may begin to learn how to live creatively in an eventful, durational-extensional, hence distributed, world without withins.

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