

Sociocultural and Constructivist Theories of Learning: Ontology, Not Just Epistemology

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There is something of a controversy taking place over how best to theorize human learning. This article joins the debate over the relation between sociocultural and constructivist perspectives on learning. These 2 perspectives differ not just in their conceptions of knowledge (epistemological assumptions) but also in their assumptions about the known world and the knowing human (ontological assumptions). Articulated in this article are 6 themes of a nondualist ontology seen at work in the sociocultural perspective, and suggested is a reconciliation of the 2. This article proposes that learning involves becoming a member of a community, constructing knowledge at various levels of expertise as a participant, but also taking a stand on the culture of one's community in an effort to take up and overcome the estrangement and division that are consequences of participation. Learning entails transformation both of the person and of the social world. This article explores the implications of this view of learning for thinking about schooling and for the conduct of educational research.

An interesting debate is taking place among proponents of different ways of thinking about human learning (for reviews, cf. Donmoyer, 1996; Salomon, 1995); Sfard (1998) called it "a conceptual upheaval." In this article, we focus on the portion of the debate that addresses sociocultural and constructivist perspectives on learning. We include among the former theories of situated learning and situated cognition, and among the latter Piaget's (1972) "genetic epistemology" and von Glasersfeld's (1993) "radical constructivism," among others. The two perspectives are different in significant respects. The former emphasizes characteristics of social participation, relationships (such as that between novice and expert, newcomer and old timer), the setting of activity, and historical change (cf. Brown, Collins, & Duguid, 1989; Cole, 1996; Forman, Minick, & Stone, 1993; Greeno & the Middle School Mathematics Through Applications Project Group [TMSMTAPG], 1998; John-Steiner & Mahn, 1996; Lave, 1988; Rogoff & Lave, 1984; Scribner, 1990/1997b). The latter emphasizes how knowledge is constructed on qualitatively different, progressively more adequate levels, as a result of the learner's action and interaction in the world (cf. Cobb, 1994; Piaget, 1970/1972; Steffe & Gale, 1995; Tobin, 1993; von Glasersfeld, 1993).

These differences have sparked heated debates. Yet some have suggested that sociocultural and constructivist approaches are not irreconcilable but complementary. Hiebert et al. (1996) called them, respectively, functional and structural perspectives on understanding. The first "focuses on the activity of the classroom," the second "on what students take with them from the classroom" (p. 17). Cobb (1994) said that each "tells half of a good story" (p. 17). Greeno (1997) called their synthesis "an important scientific agenda" (p. 14).

We believe that the debate over the similarities and differences, merits and limitations of sociocultural and constructivist accounts of learning (e.g., Anderson, Reder, & Simon, 1996; Cobb & Yackel, 1996; Confrey, 1995; Greeno, 1997; Nuthall, 1996; Prawat, 1996; Sfard, 1998; Wertsch & Toma, 1995) can be furthered by extending the discussion beyond *epistemological* matters to include *ontological* concerns. Epistemology is the systematic consideration, in philosophy and elsewhere, of knowing: when knowledge is valid, what counts as truth, and so on. Ontology is the consideration of being: what is, what exists, what it means for something—or somebody—to be. In this debate, learning is considered chiefly in terms of changes in knowing; we shall explore the notion that learning entails broader changes in being. Constructivist and sociocultural accounts of learning each rest on ontological assumptions, but these often go unnoticed. This is due in part to their relatively unarticulated character and in part to a lingering anxiety, traceable to the

logical positivists, that discussion of ontology is merely "metaphysical," untestable, and therefore unscientific or even meaningless. We want to reintroduce ontology as a valid, meaningful, and necessary topic in research on learning and development.

First, we shall consider the ontological assumptions hidden in each of the two perspectives—the dualism of constructivism and a nondualist ontology we see struggling to emerge in the sociocultural perspective. The neglect of these assumptions has implications for any effort to reconcile the two perspectives, and we briefly consider two such efforts.

Next, we reach back in time to examine what philosophical forerunners of modern sociocultural theory had to say. We articulate the nondualist ontology in some detail by identifying six key themes that are apparent when one traces its roots: (a) the person is constructed, (b) in a social context, (c) formed through practical activity, (d) and formed in relationships of desire and recognition, (e) that can split the person, and (f) motivating the search for identity.

With these themes in hand we turn again to the effort at reconciliation. We will propose that the sociocultural and constructivist perspectives are not two halves of a whole, but that the constructivist perspective attends to epistemological structures and processes that the sociocultural perspective can and must place in a broader historical and cultural context. Mind is a cultural and historical product, and dualism—the division of knower and known—can become a reality in specific circumstances. The constructivist perspective offers "an 'as if' message" (Sfard, 1998, p. 12): how we act as if we are mind, facing an independent world. The sociocultural perspective offers an account of how we get to that point.

We will propose that learning involves not only becoming a member of a community, not only constructing knowledge at various levels of expertise as a participant, but also taking a stand on the culture of one's community, in an effort to take up and overcome the estrangement and division that are consequences of participation. Learning entails both personal and social transformation. We then explore the implications of this view of learning for thinking about schooling—as the "production of persons"—and we illustrate how school can change the kind of person a child becomes, as she wrestles with and struggles to make her own the school's implicit interpretation of "student."

Finally, we sketch some implications for the conduct of educational research, before concluding with a summary and some remarks about learning and development.

THE HIDDEN ONTOLOGY OF CONSTRUCTIVIST THEORIES OF LEARNING

Constructivist theories have their roots in Piaget and focus on the active character of the learner, interacting with the environment either singly or with others; learning is the resulting

construction and qualitative reorganization of knowledge structures. Such theories rest on epistemological assumptions, as both Cobb (1994) and Phillips (1995) noted. Less noted are the ontological assumptions that constructivism also entails. Indeed, von Glasersfeld (1985) stated that constructivists "deliberately and consequentially avoid saying anything about ontology, let alone making any ontological commitments."

However, in practice constructivists do not avoid such commitments to ontology (cf. William of Ockham & Orton, 1995), largely because they inherit them. In viewing learning and development as processes of epistemic construction, Piaget (1988) situated his work in a tradition that stretched back from Kant to Descartes. Kant (1787/1965), whom Phillips (1995, p. 6) called "quintessentially constructivist," proposed that space, time, causality, and object are forms the human mind brings to its experience of the world. Kant believed that our experience of the world as objective and certain—spatial and temporal, with objects interacting causally—is constituted through the mind's application of these cognitive structures to basic sensory impressions (to use more modern terms). As transcendental conditions of the possibility of any experience, they bring necessity to our experience of the world. Kant conjoined empirical realism and transcendental idealism (cf. Allison, 1983).

Piaget took from Kant this basic insight that the knower is active and added a developmental dimension. Piaget (1970/1972) explained, "It seems genetically clear that all construction elaborated by the subject presupposes antecedent internal conditions, and in this respect Kant was right. His *a priori* forms were, however, much too rich" (p. 91). Space, time, causality, and object—the "categories" that Kant considered innate to mind—became the basic concepts whose genesis Piaget traced through infancy and beyond. For both Kant and Piaget, these universal cognitive structures shape our experience of reality, but for Piaget they develop so that cognition constructs in the twin senses of giving form to the empirical data of sensation and giving rise to new conceptual structures.

Kant, and Piaget following him, employed a dualist ontology that is taken for granted by most of us, an ontology of two realms: a subject and an independent world. Kant insisted (and Piaget implied) that although space and time and the objects of our experience are *a priori* structures of our experiencing, not the way things exist in themselves, we must nonetheless infer the independent existence of a material realm underlying such appearances. And both Piaget and Kant considered the human individual a *cogito*, an epistemic person fundamentally unchanged by the construction of knowledge (cf. Piaget, 1970/1988). However, this dualism poses all sorts of problems for a coherent theory of human knowledge, learning, and action. As Dewey (1916/1966) noted

The identification of the mind with the self, and the setting up of the self as something independent and self-sufficient, cre-

ated such a gulf between the knowing mind and the world that it became a question how knowledge was possible at all. ... [And] when knowledge is regarded as originating and developing within an individual, the ties which bind the mental life of one to that of his fellows are ignored and denied. (pp. 293, 297)

Much of the appeal of the sociocultural perspective derives from its challenge to this dualist ontology: "It seems to help us out of these foundational quandaries ... getting rid of the problematic entities and dubious dichotomies [so as to] circumvent the philosophical pitfalls" (Sfard, 1998, pp. 7-8).

THE HIDDEN ONTOLOGY OF SOCIOCULTURAL THEORIES OF LEARNING

Scribner (1990/1997b) identified three key aspects of the sociocultural approach to human cognition: Cognition is culturally mediated by material and semantic artifacts such as tools and signs, it is founded in purposive activity ("human action-in-the-world," socially constituted systems of activity designed to satisfy human needs), and it develops historically as changes at the sociocultural level impact psychological organization. These conceptions are generally traced to Vygotsky, Leontiev, Luria, and others; they arise from an effort to overcome the strict demarcation of person from world.

From this perspective, cognition "is a complex social phenomenon ... distributed—stretched over, not divided among—mind, body, activity and culturally organized settings (which include other actors)" (Lave, 1988, p. 1). And, learning is "an integral part of generative social practice in the lived-in world" (Lave & Wenger, 1991, p. 35), the result of "guided participation" (Rogoff, 1991, p. 8) or "legitimate peripheral participation." Brown et al. (1989) argued that "understanding is developed through continued, situated use" involving "complex social negotiations" (p. 33), so that "learning and cognition ... are fundamentally situated" (p. 32) in activity, context, and culture. Learning involves "enculturation": picking up the jargon, behavior, and norms of a new social group; adopting its belief systems to become a member of the culture.

The ease and success with which people do this (as opposed to the intricacy of describing what it entails) belie the immense importance of the process and obscures [*sic*] the fact that what they pick up is a product of the ambient culture rather than of explicit learning. (Brown et al., p. 34)

As Kirshner and Whitson (1997) pointed out, situated cognition questions the "individualist and dualist ... common-sense assumptions about thinking and being" (p. 2). It seeks to dispense with "the Cartesian dualism of our intellectual tradition" (Kirshner & Whitson, 1998, p. 26; cf. Prawat, 1996). But the ontological assumptions of sociocultural theories of

cognition and learning are often implied rather than spelled out. For example, the interesting proposals that "learning involves the construction of identities" and that "one way to think of learning is as the historical production, transformation, and change of persons" (Lave & Wenger, 1991, pp. 51-52) suggest a new ontological stance. Greeno (1997) similarly stated that

In the situative perspective, learning and development are viewed as progress along trajectories of participation and growth of identity. ... In these practices, students develop patterns of participation that contribute to their identities as learners, which include the ways in which they take initiative and responsibility for their learning and function actively in the formulation of goals and criteria for their success. (p. 9)

Whereas much psychological research treats identity simply as self-concept, as knowledge of self, that is, as epistemological, the sociocultural conception of identity addresses the fluid character of human being and the way identity is closely linked to participation and learning in a community. However, the details are not always clear. This is probably why Anderson et al. (1996) complained: "We really do not know what Greeno means by a student's 'identity as learner,' or to what extent he pictures identity as being subsumed in a 'group identity'" (p. 19).

Lave (1992) noted that "learning, viewed as socially situated activity, must be grounded in a social ontology that conceives of the person as an acting being, engaged in activity in the world." She proposed that "central identity-generating activities take place" in the "communities of practice" in which learners participate, and explains that "learning is, in this purview, more basically a process of coming to be, of forging identities in activity in the world."

Such claims are evidently ontological in character, and they are also unfamiliar. Sadly, in many discussions of sociocultural theory they are overlooked. For example Mason (1996), whose research drew on both perspectives, attended only to "knowledge growth and change" in "epistemic operations" (pp. 411, 413), saying nothing about changes in the identity of persons. And, although Bredo (1994) suggested that in situated cognition research "all of the central concepts of education and psychology, such as thinking, knowing, learning, and development, are placed in need of revision, because all are commonly conceived in dualist terms" (p. 29), and although, citing Hanks's introduction in Lave and Wenger (1991), Bredo acknowledged that "one cannot independently define individual learning as separate from change in one's social role or identity" (Bredo, 1994, p. 32), he nonetheless suggested that the term "learning" be "replaced with a more neutral term, such as *cognitive change*" (Bredo, 1994, p. 32, original emphasis). Lave and Wenger's notion that "learning involves the construction of identities" (p. 52) is lost, along with their insistence that "cognition" is not an adequate way of thinking about learning.

COMPLEMENTARITY AND RECONCILIATION?

The neglect of ontology has implications, too, for efforts to reconcile these two perspectives on learning. Greeno (1997) asserted that "the prospects are good for developing a synthesis that will provide a coherent theory of social interaction and of cognitive processes" (p. 14) and suggested that constructivist and situative approaches are different routes to the same goal. Cobb (1994) also suggested that constructivist and sociocultural theories are complementary and can be reconciled. He argued that both perspectives tacitly assume active individual construction as well as participation in and enculturation into social practices. As noted earlier, he felt each "tells half of a good story" (p. 17).

In an effort at reconciliation, Cobb and Yackel (1996) proposed an interesting "emergent" perspective that aims to address the "reciprocity" between the psychological and the social, in which "learning is a constructive process that occurs while participating in and contributing to the practices of the local community" (p. 185). This perspective seeks to "account for the constitution of social and cultural processes by actively cognizing individuals" (p. 188).

However, although Cobb (1994) did note that both perspectives make "essentialist assumptions" (p. 18) about what the mind is, he too tends to focus on their epistemological claims. This can be seen when he equates learning with "insight" and "computational strategies" in domains of knowledge, and when Cobb and Yackel (1996) described the products of classroom activity as "beliefs," "values," "conceptions," and "norms." Similarly, although Cobb traced the emphasis on the socially and culturally situated character of learning to Vygotsky, Leont'ev, and Luria, he seemed to depart from Vygotsky's insistence that mind does not and cannot exist outside social practices, and that the focus is not on the "individual-as-such" but on the "individual-in-action" (Minick, 1985, p. 27). When Cobb and Yackel attributed to the sociocultural perspective an emphasis on "transmission," "inheritance," and "transfer" that is "determined" by participation (p. 185), they separated person and world (cf. John-Steiner & Mahn, 1996). When Cobb stated that sociocultural theory "locates learning in coparticipation in cultural practices" (p. 14), he seemed not to appreciate Lave and Wenger's (1991) point that, "in our view, learning is not merely situated in practice—as if it were some independently reifiable process that just happened to be located somewhere; learning is an integral part of generative social practice in the lived-in world" (p. 35). In a recent article, however, Cobb and Bowers (1999) took a step closer to this view, saying "we view learning as a process in which students actively reorganize their ways of participating in classroom practices" (p. 9).

And in a second effort at reconciliation, Greeno and TMSMTAPG (1998) proposed an interesting "situative per-

spective," "a synthesis that subsumes" what they term "the cognitive and behavioral perspectives" (p. 5) by attending to processes of both reasoning and communication, both informational and interactional aspects of activity. This perspective pursues a "functional analysis of *intact activity systems*" (p. 5), "interactive systems that are larger than the behavior and cognitive processes of an individual agent" (pp. 5–6), systems "in which people interact with each other and with material, informational, and conceptual resources in their environments" (p. 23). Such systems are more complex than mere "contexts in which individual behavior occurs" (p. 6), because "significant aspects of activity evolve in processes of co-construction and negotiation between participants and other systems in situations" (p. 14). The behaviorist (skill-oriented) and cognitive (understanding-oriented) perspectives are not opposites, Greeno and TMSMTAPG asserted, but complementary, and so can be placed within the larger context of situative principles (p. 15).

Greeno and TMSMTAPG (1998) suggested that the situative perspective better grasps the emergent (constructed and modified) character of problem spaces, the dynamic character of interaction and the "achievement of joint action" (p. 8), and the way problem solving is influenced by motivation and identity. Individuals operate not with schemata and procedures (as cognitive science models human behavior), but through attunements to constraints and affordances. Attunements are "regular patterns of an individual's participation" (p. 9); they support but do not determine activity, for "activity is a continual negotiation." "Learning, in this situative view, is hypothesized to be becoming attuned to constraints and affordances of activity and becoming more centrally involved in the practices of a community" (p. 11).

But Greeno and TMSMTAPG (1998) also described the outcomes of learning in solely epistemological terms: as "expectations," "beliefs and patterns of participation" (p. 10). And, the roles of motivation and identity need further clarification in this situative perspective on learning. We believe Greeno and TMSMTAPG are correct to note that

People participate in communities in many different ways—some by adopting the mainstream standards and values, some by rejecting them. ... In any case, individuals develop identities in which they relate to the prevailing standards in a complex variety of ways. (p. 10).

But how is this phenomenon to be explained? Is it simply a matter of different ways of "becoming more centrally involved"? Is this more than a reiteration of Lave and Wenger's (1991) remark that "knowers come in a range of types, from clones to heretics" (p. 116)?

We agree with Greeno (1997) and Cobb (1994) that a reconciliation of constructivist and sociocultural perspectives is possible and necessary, but we believe that to do this one must first flesh out the nondualist ontology struggling to emerge in the sociocultural perspective, and to this task we turn next.

THEMES OF A NONDUALIST ONTOLOGY

The roots of sociocultural theory can be traced back from Vygotsky (1978) to Marx (1867/1977) and Hegel (1807/1967), and the differences in the ontological assumptions underlying constructivist and sociocultural perspectives on learning can be illustrated by comparing Hegel with Kant (1787/1965). Hegel was deeply dissatisfied with Kant's dualism of (experienced) phenomena and (unknowable) things in themselves, of empirical and transcendental, and of subject and independent reality. Hegel maintained that Kant had erred in taking for granted the character of the knowing individual; his response was an attempt to formulate a very different ontology. His efforts influenced Marx and subsequent dialectical materialists including Vygotsky and Ilyenkov, as well as phenomenologists including Heidegger and Merleau-Ponty; such postmodernists as Derrida, Foucault, Deleuze, and Lacan; poststructuralists such as Bourdieu and Latour, as well as Dewey. Rather than attempt an exhaustive survey of how the nondualist ontology has been taken up by each of these people, we shall describe six themes that seem key, appearing in the work of many of them, sometimes all. And, although we explore these themes here primarily from a theoretical angle, the reading and reflection leading to this article occurred simultaneously with empirical investigation (Packer, 2001; in press-c); our account of the themes developed as reading informed empirical inquiry and vice versa. This article thus flattens out what was a circular and dialectical process of discovery.

The Person Is Constructed

The first theme is that the human person is not a natural entity but a social and historical product. The person is made, not born. Human infants are incomplete animals; the world-openness introduced by this neoteny (Berger & Luckmann, 1967, p. 47) means we must continually remake ourselves, and in doing so we make society and history. "That man himself appears to resemble an artifact, as it were, a product of civilization trained to speak and to act in ways foreign to his nature, is culture's crowning achievement" (Loewenberg, 1965, p. 210).

In *Phänomenologie des Geistes*, Hegel (1807/1967) described a series of forms or levels of the changing human individual.¹ Unlike his immediate philosophical predecessors (Kant, Locke, Descartes), Hegel did not assume the existence of the individual knowing and learning self. For Hegel,

Contrary to most of the history of modern philosophy, the individual self is in no sense an immediately given element of consciousness (as Descartes claims of his *cogito*) but a socially created concept, and a most peculiar concept at that. The peculiarity is that, even as it is society and the social order that teach us to think of ourselves as individuals in the first

place, they thereby teach us to ignore the fact that we are wholly social products and social participants. It [*sic*] teaches us to think of ourselves as ontological atoms for whom the formation of society is a puzzle and a mystery (Solomon, 1983, p. 514).

For Marx, too, "man ... is an animal which can develop into an individual only in society" (as cited in Ollman, 1976, p. 105). Similarly, Lacan (1956/1968) saw the "symbolic order" not "as constituted by man, but rather as constituting him" (p. 141), and as leading to the creation of such "imaginary" objects as the ego (Fink, 1995).

... In a Social Context

The second theme is that this formation and transformation of the person can occur only in a social context that is constitutive of being (cf. Taylor, 1971/1987). Variations of this theme can be found in Foucault, Lacan, Marx, Heidegger, even Kuhn, and in Habermas, Bourdieu, and Latour, as well as Hegel.

Foucault (1969/1972) insisted that a "discursive formation" forms a "field," a "totality," a "background" (p. 26) against which facts and events stand out. Bourdieu (1993) employed concepts of "social field" and "habitus" to capture the interrelation of social context and person. Habitus and field are "linked ... by a relationship of ontological complicity" (p. 273)—that is to say, each determines the being of the other. Habitus is the embodied way in which we engage the world: "a system of durable, transposable dispositions which functions as the generative basis of structured, objectively unified practices" (Bourdieu, 1979, p. vii). Social fields are history objectified, each is a multidimensional space of positions, defined by the distribution of forms of capital.

Similarly, Kuhn (1970, 1977) saw the "paradigm" as central to an understanding of scientific activity. It is the "disciplinary matrix" that defines a community of scientific practitioners and the "world" inhabited by its members.

In another variant, Latour (1997) invoked "a network-like ontology," an "irreductionist and relationist ontology" in

¹Because "Hegel use[d] *das Bewusstsein* ['consciousness'] to denote not only an individual's consciousness, but the conscious person himself, in contrast to the object of which he is conscious" (Inwood, 1992, p. 61), his analysis addressed both the construction of knowledge (and its justification) and the construction of the knower. The human person advances from immediate sensuous experience (of the present here and now), to self-consciousness, consciousness of others, consciousness of society as an objective reality, consciousness that society is the product of human activity, and consciousness of how society is produced through human activity. This movement is, on a larger scale, that of *Geist*, variously translated as mind (Lukács, 1978), the human mind and its products (Inwood, 1992), cosmic spirit (Taylor, 1975), ambiguously mind and spirit (Loewenberg, 1965), and universal mind, infinite subject, the world (Solomon, 1983). Human being is a product of this larger unfolding of *Geist*, as it advances through forms of social organization and levels of awareness and knowledge.

which “actors are not conceived of as fixed entities” but are “a new ontological hybrid, world making entities.” The old distinction between things and representations, between material and texts, is dissolved: Both have the same ontological status. Society, argues Latour, has “a fibrous, thread-like, wiry, stringy, ropy, capillary character”; it is “a global entity—a highly connected one—which remains nevertheless continuously local.” And Habermas (1981/1984) similarly insisted that “lifeworld” is a necessary part of any social analysis.

Each of these is an analysis of people and things as parts of a whole, in a “philosophy of internal relations” (Ollman, 1976, p. 26). The whole is a public, intersubjective, taken-for-granted context, within which people and artifacts are posited: in terms of which their *being* is defined.

How does context—whether conceived of as field or as rootlike network—have this ontological power? In short, because the being of an entity—colloquially speaking, what it *is*—is not a timeless, essential property but is determined by the human practices in which it is encountered, grasped, and comprehended. Being is not essentially mind or matter, but varies with the historical and societal context. Heidegger (1927/1996) argued that “it is not the case that human being ‘is,’ and then on top of that has a relation of being to the ‘world’ which it sometimes takes upon itself” (p. 53). Rather, the “totality of involvements” of “world” exerts a “constitution” on human being, and “discloses” entities. His “fundamental ontology” in *Being and Time* is a detailed cultural analysis of human being. Being is an answer to a human concern; humans have an “ontological priority”; we have an “understanding of being” (p. 34) that is rooted in our way of life. “Man is not only a being that *thinks* [but also] the being that *reveals* Being. ... He reveals in addition ... the being that he himself is” (Kojève, 1947/1969, p. 36). Not just our knowledge but we ourselves, and the objects we know, are constructed: What counts as real varies culturally and changes historically.

Consider Marx’s (1867/1977) central example: the “commodity” is a kind of entity—a way for something to be—that becomes possible only in a particular kind of society, at a particular period in history. The same can be said of other “objects” we find around us—tools, signs, money, food, music, art, clothing—each is a cultural artifact. To say that each is, at bottom, material is, first, false (because some are immaterial) and, second, unhelpful (because material is itself no natural category). As Engeström and Cole (1997) pointed out, the concept of context or situation is not unproblematic (what is its width, where are its boundaries, how are multiple contexts related?) but it is surely unavoidable.

... Formed Through Practical Activity

Our third theme is that this relation between social context, people, and things is sustained and transformed in practical activity. Any social context—a classroom, for example—is itself the product of human language and social practice, not

fixed but dynamic, changing over time, in what we call history. As Berger and Luckmann (1967) put it,

Man is capable of producing a world that he then experiences as something other than a human product. ... [T]he relationship between man, the producer, and the social world, his product, is and remains a dialectical one. ... The product acts back on the producer. (p. 61)²

Hegel (1807/1967), too, described the mutual constitution of person and social context, and the dynamic of contradiction in both.

In Hegel’s (1807/1967) account, however, these transformations unfold in a somewhat mysterious way. Marx (1867/1977) insisted that they are consequences of *human praxis*, open-ended and contingent, and should be studied in their concrete particularity. Human activity has a central ontological significance here. Labor, crucial to the reproduction of human existence, transforms natural objects into artifacts and physical forces into sources of power, and also transforms the laborer’s nature. For Marx, like Hegel, social being is distinct from natural organic and inorganic being, but the natural and the social are related dialectically. Labor produces an “ontological leap” (Lukács, 1978, p. 6), giving rise to social forms and categories, to new forms of objectivity. These do not rise above inorganic and organic being, they must reproduce themselves in it, but there is a progressive move, an ontological development, of abstraction: Social forms become increasingly less dependent on materiality—consider for instance the move from barter to money to credit. Objective being does not exist only in concrete things; whether or not we are conscious of them, abstract forms have “facticity in practical life.” A drop in the stock market has “the same ontological rigor of facticity as a car that runs you over” (Lukács, 1978, p. 40). In such an ontology, objectivity is not the result of cognitive activity, as it was for Kant (1787/1965) and Piaget (1970/1972), but the product of practical, social activity:

Objects are not merely given or discovered by the subject, but rather are made objects by the subject’s activity. ... But they are not constituted out of nothing, that is, they are not merely projections of the subject. Rather, the subject works on that which is given to it, as external to it or other than it. (Gould, 1978, p. 41)

²There is the basis here for a response to Sokal’s (1996a, 1996b) critique of social constructivism. Sokal (1996a) reminded us that anyone who steps out of his apartment window falls to the ground. From this he infers that physical laws are matters of fact, not social constructions. Sokal (1996a) confused construction and convention here; more importantly he also fails to recognize that the laws that physicists formulate are precisely those that have relevance to events such as falling to one’s death. Galileo’s (1638/1954) *Dialogues Concerning Two New Sciences* begins with a discussion about which animals can and cannot survive such a fall. The facts, events, and entities that science describes are ‘real’ because they are socially relevant. And Norretranders (1991/1998, p. 36) explained how thermodynamics is similarly grounded in human interests.

It might be objected that Piaget saw the child as actively transforming the world. But in fact Piaget saw the child's action as merely "displacing" objects in the spatio-temporal field, not as constructing objects or producing artifacts. Action for Piaget is instrumental activity that manipulates a preexisting, independent reality, neither creating nor consuming—knowledge of the world is constructed, but not the world itself.

The activity of labor in which objects are transformed is also a process in which the individual is transformed.

The agent thus recognizes him or herself through this objectification of his or her capacities and needs. ... Furthermore, the agent becomes different through this objectification in that the circumstances of his or her agency, that is, the world in which he or she acts, have been transformed and now present the agent with a different range of problems and opportunities which give rise to new purposes and new modes of action. (Gould, 1978, p. 42)

Other analyses (e.g., Lacan, Foucault, Habermas) stress the ontological role of communicative action as well as labor. As Hanks (1996) put it, "the referential process is one in which subjects, objects, and social relations are simultaneously produced in the course of even the most mundane utterances" (p. 237). To speak is not just to represent the world but also to occupy it; and we do many things "through" language—"we realize ourselves; effect changes in our worlds; connect with other people; experience beauty, rage, and tenderness; exercise authority; refuse; and pursue our interests" (p. 236).

... And Formed in Relationships of Desire and Recognition

If the previous themes are familiar to readers of writing on social construction, the next three are probably less so. The first is that the person is formed not only in practical activity, but in the human relationships this activity sustains (O'Neill, 1996). Hegel (1807/1967) sought to demonstrate "the radical view that, without interpersonal interaction and the mutual demand of what he calls 'recognition,' there is no 'self' and no 'self-consciousness'" (Solomon, 1983, p. 430). The self is not a purely cognitive construction, let alone the transparent source of action and cognition; it is formed in desire, conflict, and opposition, in a struggle for recognition. Self-consciousness is not the result of the individual reflecting on him- or herself, but emerges in the relationship with another. Dreyfus and Rabinow (1993) pointed out that Bourdieu's (1993) notion that people seek "symbolic capital" is influenced by Hegel's emphasis on recognition.

As Kojève (1947/1969) put it, "the man who attentively *contemplates* a thing, who wants to see it as it is without changing anything ... *forgets himself* ... [But] when man experiences a desire ... he necessarily becomes aware of *him-*

self" (p. 37).³ Desire, especially desire for recognition, creates a lack, an absence, a hole, in the human person. And desire directed toward another person, another "greedy emptiness" (p. 40) seeks recognition that gives not just consciousness of self but self-consciousness. "The self is for itself only by being for another" (Williams, 1997, p. 49).

The struggle with a more powerful other offers one form of recognition. The famous master-slave dialectic is not an exercise in psychology or sociology but "is in brief an ontological theory about the nature of 'selfhood' in which the whole history of philosophy, and in particular the Cartesian-Leibnizian vision of the fully formed individual ego is summarily rejected" (Solomon, 1983, p. 428). The struggle for prestige, to define who is master and who slave, eventually "produces a free and historical individual, conscious of his individuality, his freedom, his history, and finally, his historicity" (Kojève, 1947/1969, p. 6). And it is the slave, the one who works, who becomes civilized and educated, sublimating the drive of desire, giving form to objects and finding self in the product, the "real, objective ... , cultural, historical, human World" (p. 26). But recognition need not require such struggle (Williams, 1997).

... That Can Split the Person

The fifth theme is the insistence that the person, constituted in activity and relationship in social context, is fundamentally split, estranged from him- or herself—alienated, inauthentic, and divided. To become human is to be split; to become a participant in community is to be divided. The person's relation to self, to others, to activity, and to the world is constituted and mediated by discourse and social practices; community defines the modes of appropriation and recognition that obtain, and the kinds of relationships in which recognition can be achieved: In doing so, it transforms desire and comes between the self and itself (Ricoeur, 1992). The result is "the cultural knotting of [the] subject who must 'split,' so to speak, in order to become a social subject" (O'Neill, 1996, p. 2). As Lacan saw it, "The subject is nothing but this very split" (Fink, 1995, p. 45); only the psychotic lack the split between ego and unconscious. "Alienation represents the instituting of the symbolic order—which must be realized anew for each subject—and the subject's assignation of a place therein. ... Separation, a neither/nor involving the subject and the Other, brings forth being" (Fink, 1995, p. 52). "Power acts on the subject [in] a splitting and reversal constitutive of the subject itself" (Butler, 1997, p. 15).

The oppositions of thought and action, conscious and unconscious, self and other, subject and object are created, not natural. There is a "double movement" to culture (Hyppolite,

³Kojève's lectures on Hegel, given from 1933 to 1939, were attended by Merleau-Ponty, Sartre, and Lacan.

1946/1974, p. 378):⁴ Our activity produces a social context that defines who we are. But that context also confronts us as something alien, so we are divided from ourselves and need to discover ourselves. "Man is, as such, the objectifying being who creates outside supports for himself and ... incongruities result between the petrified objectivation and his living desires and will, which run in a different direction" (Landmann, 1975/1978, p. 189).

In other words, there are costs to membership in a community, to participation in a social context, as well as benefits. "To cultivate oneself is not to develop harmoniously, as in organic growth, but to oppose oneself and rediscover oneself through a rending and separation" (Hyppolite, 1946/1974, p. 385).

... Motivating the Search for Identity

If the person is divided in and from herself, she is not self-same—she lacks identity. Our final theme is that the person strives to achieve identity. This search is an effort to overcome division; not to root out or eliminate it so much as to transcend it.

It may seem that identity is just a matter of membership of a community, and indeed "in societies with very simple division of labor and minimal distribution of knowledge ... everyone pretty much *is* what he is supposed to be. In such a society identities are easily recognizable, objectively and subjectively" (Berger & Luckmann, 1967, p. 164). But, typically membership is the start of a struggle for identity, an attempt to overcome division and achieve wholeness, unity—to become self-same. And, because human identity is achieved in practical activity, in desire and often in struggle, this identity is not simply equality with itself but "negating-negativity" (Kojève, 1947/1969, pp. 5, 213n). Human being is becoming—striving to be what it is not (yet).

To be posited by the public practices of a community is not all it is to be human, and it is not enough. Human being is always positing as well as posited—always pushing beyond the identity conferred by a community of practice. People actively strive to come to terms with the practices of their community, adopting an attitude, taking a stand on the way membership of a community has positioned them. As they do this their activity acts on that community, reproducing it or transforming it. In Hegel's (1807/1967) account, the person, confronted with an apparently objective social order, seeking to overcome alienation, accomplishes this positively in philosophy, art, religion, and other forms of representation, and negatively in the revolutionary destruction of their own creation. For Lacan (1968), psychoanalysis aims to help the analysand assume responsibility for what brought him or her

into existence as split subject, through signification of that cause, in "a discourse of separation" (Fink, 1995, pp. 62, 67).

RECONCILING THE EPISTEMOLOGICAL AND THE ONTOLOGICAL

These, then, are the six central themes of the nondualist ontology we see struggling to emerge in the sociocultural perspective. It is an ontology, a view of human and nonhuman being, in which person and social world are internally related to one another, mutually constituting. In contrast with the "constituting subjectivity" of Kant (1787/1965) and Piaget (1970/1972), who viewed construction only as a cognitive activity in which subjectivity applies its forms to data from a distinct and separate objective world, this ontology envisions a practical process of construction where people shape the social world, and in doing so are themselves transformed. This mutual constitution is accomplished in the social practices of human relationship and community. Human beings are formed and transformed in relationship with others, in the desire for recognition, in the practices of a particular community, and in a manner that will split and initiate a struggle for identity.

What does this nondualist ontology add to our understanding of learning? In this section we aim to show how it suggests a relation between sociocultural and constructivist perspectives, and a way to reconcile them.

The nondualist ontology clarifies the sociocultural perspective's notion that learning—gaining knowledge or understanding—is an integral part of broader ontological changes that stem from participation in a community. A community of practice transforms nature into culture; it posits circumscribed practices for its members, possible ways of being human, possible ways to grasp the world—apprehended first with the body, then with tools and symbols—through participation in social practices and in relationship with other people. Knowing is this grasping that is at the same time a way of participating and of relating. The reader may recognize here the two metaphors of "acquisition" and "participation" that Sfard (1998) saw as central to the constructivist and sociocultural perspectives respectively, but with the former interpreted as a kind of "having" that does not commodify.

But participation requires forgetting as well as knowing, and often the separation of knower from known. The costs, the losses, of participation must be figured into any equation of learning. Indeed, the very capacity for "cognition" must be seen as the result of a splitting, a division of mind from body that cleaves the embodied understanding, the "somatic" or "mimetic" (Egan, 1997) understanding of infancy, and later cleaves again the "mythic" understanding of early childhood. The mental processes and schemata of cognitive activity that constructivism emphasizes are formed in and through participation in specific social practices, culturally and historically situated. The very formation of an "inner" mental realm of deliberation and cognition is a consequence of particular prac-

⁴Hyppolite's lectures on Hegel, given from 1949 to 1954, were attended by Foucault, Derrida, Deleuze, and Lacan.

tices and forms of relationship. Mind is not from the outset a distinct ontological realm, but a cultural and historical product.

This splitting is a loss of childhood's vivid participation in an immediate life world, the loss of an intuitive involvement in the world. There are benefits too, of course, not least of which are new kinds of relationships with significant others. But the costs of membership, and the conflicts of the relationships in which desire and recognition play out, act back to transform the person and their participation and engagement. The knowing and learning individual is both active and acted on. When constructivism assumes that this activity is always intellectual and individual it fails to grasp the affective, relational, and cultural dimensions of activity. And knowing is not an end in itself, but a means to the ends of recognition and identity. The search for these ends is what leads people to "participate in communities in many different ways" (Greeno & TMSMTAPG, 1998, p. 10), and occasions of what might seem a failure to learn can be reinterpreted as a struggle for identity.

Our claim here, then, is that the constructivist perspective attends to epistemological processes and structures that the sociocultural perspective is able to locate in an ontological process, and so trace their cultural and historical genesis. The ontological dualism that constructivism presumes is not primary or inevitable. Dualism of mind and body, subject and object, becomes a reality; it is not how things are at the outset. And a precognitive awareness, born of practical activity, precedes cognitive activity and always supports and sustains cognition. Constructivism comes in at the end of the first act, so to speak. However, the constructivist perspective is helpful if it is read not as making "ontological stipulations" but "as bringing an 'as if' message" (Sfard, 1998, p. 12): How things go when we act as if we are mind, independent from world.

Therefore, to the constructivist emphasis on the active learner must be added the recognition that knowledge is not all that is constructed. The human individual is a construction too, as is the social world. Constructivism fails to see that the individual cognizer is not a natural creature, but one possible creation of human culture and history. The cognizing individual and the inner realm of mind are not natural, they are both human products, the bittersweet fruit of particular social arrangements. Mind is only one possible product of the dialectic of person and world. Constructivism also can take for granted the objective appearance of the world and fail to recognize its cultural and historical basis; the objects we know are also products of human activity.

At the same time, to the sociocultural emphasis on situation and participation must be added the recognition that membership of a community is never an unproblematic enculturation, a simple "putting into" culture. The sociocultural perspective can seem to value social conformism and fail to recognize the diverse ways people can relate to any community. Membership has its costs; conflict is inherent in community. And, although "acceptance by and interaction with acknowledged adept practitioners" legitimates learning

(Lave & Wenger, 1991, p. 100), it does so through complex dialectics of desire and recognition. (See Hodges, 1998, for an account of participation in a community of practice as "dis-identification"; cf. Litowitz, 1993, 1999.)

Both perspectives offer valuable insights: Without attention to community, the person who learns can seem merely an unchanging epistemic subject exploring an independent world. Equally, without attention to the learner's activity and attitude, the learner can appear merely enculturated into the ways of a community. Prior efforts at reconciliation have appreciated that learning presumes a social context—but in addition, person and social world are in dynamic tension, and community membership sets the stage for an active search for identity, the result of which is that both person and community are transformed. Learning entails both personal and social transformation—in short, ontological change.

SCHOOL AS A SITE FOR THE PRODUCTION OF PERSONS

What does this view of learning mean for the study and practice of schooling, a specialized locus for learning? We believe the six themes provide an interpretive framework that fruitfully directs attention to persistently overlooked elements of schooling. In this section we give an account of schooling that, although provisional and preliminary, receives some backing from empirical work (cf. Packer, 2001; Packer & Greco-Brooks, 1999), and in the section that follows we offer an illustration.

We begin with the observation that educational researchers readily refer to children in classrooms as "students," but often without pausing to consider what this new title means. What does it mean to be a student? How is it that a child becomes a student? Student and teacher are new social positions constituted by the classroom community of practice. In most schools, children and adults now relate in an impersonal way, distinct from the concrete particularity, the personal ties of family relationships. Dreeben (1968) recognized how student and teacher are positions distinct from the persons who occupy them. He suggested that the school's "prime function is to bring about developmental changes in individuals," and he noted that "the traditional notion of learning as a function of teaching, of engagement in instructional activities, may be an overly restricted view of what happens during the schooling process" (p. 20). But, Dreeben tried to explain what happens when child becomes student in terms of role theory, as the internalization of new norms and values. That approach is unsatisfactory, in part because it tries to explain concrete behavior by appealing to something ideal. The task is really to do the opposite: to explain how people become able to play a role successfully and appropriately—to live an ideal—in and with their concrete behavior.

The shift from family member to student is already an ontological transformation. The new kind of individual does not

replace the old—the children return home at the end of each day—but neither is it simply added on. The child assumes different modes of subjectivity in the two different contexts. Where the family is lived as natural necessity, in relationships among particular concrete individuals, in school the child becomes one of a type.

Second, adopting the position of student, speaking and acting from that position, children become subject to the explicit rules and the implicit sanctions of the classroom community. The social context of the classroom is a community in which students and teacher are governed by apparently objective constraints, and in which people engage with apparent abstractions. Classroom rules are typically presented as an objective disciplinary order children are expected to act in accordance with. And the classroom is populated with abstractions like number, shape, size, quantity: entities understood in terms of apparently independent, decontextualized properties.

Third, these impersonal relations and abstractions are sustained by the practices of the classroom community. They cannot exist in their own right; they must be continually reproduced in practice. For example, Packer and Greco-Brooks (1999) analyzed interactions on the first day of first grade, as the teacher worked to establish an impersonal “you”—a person who must raise a hand to be recognized as speaker, who must follow the classroom rules, pay attention, put their “thinking cap” on—where the students are indexed as a class instead of as individuals. The teacher worked, too, to shift the topic from the family—where the children had taken it, bragging about what made them special—to the way first graders talk about family in the classroom. Discourse moved from the family dog to animals—academic subject matter. Changes were made, then, in context, in topic, and in turn-taking devices.

Rotman (1993) suggested that abstraction is a matter of forgetting indexicality, sense, and meaning. Consider, for example, three girls working on a pizza problem, combining toppings. One girl rejects another’s choice of toppings, saying, “We might actually have to eat this pizza!” But the third talks in a way that makes it clear the actual toppings chosen are irrelevant to the task. She has successfully forgotten sense and meaning (cf. Walkerdine, 1988). Abstractions are introduced, in part, through the school’s demands that students become skilled in the use of the symbolic media of reading, writing, and arithmetic (Egan, 1997; Ong, 1982). These forms of representation permit a variety of new modes of engagement (Scribner, 1968/1997a), but typically, in the traditional classroom, they are used to foster a mediated, objectifying attitude to what has to this point been grasped with immediacy (Serpell & Hatano, 1997). Participation is transformed into inspection. When children—as students—write essays about their family, use the calendar to render time abstract and organized, and so on, these practices invoke a new manner of relating to the world, to self, and to others: an attitude of objectification and abstraction. These

are ontological changes in which the child starts to become an autonomous self, inspecting an independent reality.

Fourth, long ago, Parsons (1959) noted how a single “axis of achievement” operates in elementary school. Children are sorted along this axis, something Parsons viewed approvingly as a functional preparation for the different tasks and strata of adult life. Particularly in the early grades, little distinction is made between cognitive and ethical aspects of classroom work; the major criterion of recognition is achievement motivation—crudely put, the child’s willingness to work.

This evaluation of students’ conduct and their academic work is a crucial form of recognition of children by the adult who teaches them. It is the institutionalized way the teacher gratifies the children’s desire for connection and recognition, not meeting these needs directly, however, but transmuting them. It is in relationship to their teacher that the children become students, drawn into the classroom community of practice and its new way of being. As Felman (1987) put it, “teaching is not a purely cognitive, informative experience, it is also an emotional, erotic experience ... [and] cognition is always both motivated and obscured by love” (p. 86). And Schoenfeld (1999) spoke of the teacher’s “challenging” and “draining” task of “seducing” students (p. 13).

Fifth, the costs of membership of and participation in the classroom community of practice are paid in the form of binary divisions that become lived: dualisms of mind and body, reason and emotion, and thought and action (Martin, 1993). The oppositions of control and impulse, self and other, subject and object are produced, not natural. Mind itself, as we typically understand it, is a product of these social practices: disembodied and cerebral, quietly reflective, dispassionate and deliberate.

Sixth, these costs of schooling are ones most of us consider worth paying. The benefit is full membership of the abstract, albeit alienated, world of modern society. But not all school children agree with us. For various reasons, some reject the classroom community. Either way, identity is at stake. The notion that schools influence identity is not new, but treatments of the notion have generally been vague about the ontological processes involved. The notion of identity is central to some analyses of schooling (e.g., Eckert, 1989; Wexler, 1993; Willis, 1977/1981), but just what identity is, other than self-concept (i.e., knowledge of self), is not articulated (e.g., neither Willis nor Eckert define identity). It is important to insist that students are active participants in the classroom, not passive recipients. Contrary to the formulations of some critical pedagogists, the classroom is a site of active cultural production, not just of exchange (cf. Packer, in press-c). As students, children are actively engaged in the ongoing reproduction of the classroom community of practice—and sometimes its transformation. Students can always actively align with or against the power and authority of their teacher. They can accept or reject the costs of participation in the community, embracing, or seeking to avoid or to overcome, the split-

ting demanded of them. We have all heard teachers talk, if we have not done so ourselves, of students with attitude. Engagement signifies an attitude of alignment with and acceptance of the terms of one's position in the classroom; resistance signifies an attitude of opposition to and rejection of the authority of the teacher and the position of student, often in a way that instead seeks status in the eyes of peers—the second source of recognition in the classroom. When a student takes an oppositional stance, his or her attitude becomes salient and problematic, but in a real sense attitude is always an important outcome of schooling—"character and mind," wrote Dewey (1916/1966) "are attitudes of participative response in social affairs" (pp. 316–317).

In this account, the work central to schooling is the effort to answer the question, "Who am I?" (cf. Luttrell, 1996; Rival, 1996). Participation in both the formal and the hidden curricula is means to this end. A child who rejects the reality of the classroom community of practice, finding the costs too much to bear, can seem to be failing to learn when he or she is seeking a basis for identity in opposition, as the next section illustrates.

Illustration of the Ontological Processes of Schooling

Imagine a sixth-grade teacher who describes herself as "strict" and for whom rules and discipline are important. She will not tolerate a lot of noise, or side talking, and she demands respect from her students. She has also just implemented a project-based science curriculum.⁵

To the children starting middle school, this teacher's classroom is an unfamiliar world, its routines different in tone from those of their elementary school. Most seek to become members of this new community by adopting the manners and proper behavior of a "good student," and in doing so they become bound into a larger social unit, the class, relinquishing the sense of being unique individuals.

And, they discover they have alienated themselves—the proper behavior of the classroom demands a duality: a split between an "inside" self who must speak quietly or keep silent, sit still, and complete the assigned work, and an "outside" self who can yell, run, and jump. Something like this is familiar from elementary school—but this middle school has a closed-building policy, with no recess, even at lunch time. The school staff consider their adolescent charges "bundles of hormones" to whom they make little effort to explain their

firm discipline. The lively, spontaneous outside self must be held firmly in check.

Where to find one's identity in such a situation? How to keep a sense of who one truly is? Perhaps in alignment with one or another of the classroom's two sources of recognition: the teacher or other children. Those who align with the teacher, doing their best, strive to overcome the impulses of their outside self, struggle to behave. The classroom rules demand responsibility, courtesy, and respect, and the teacher tells the students she is a "professional" and each of them is "a professional student in my classroom." She relates to them in an impersonal manner, with no recognition of personal qualities or character. No sense of who one uniquely is is offered here. Furthermore, when one student misbehaves, the whole class is punished—kept after class, bonus points deducted, extra work assigned—so even the children striving to be good find themselves judged as bad anyway. Aligning with the teacher appears no better than misbehaving; the recognition one receives is mainly negative.

At the same time, a child who instead aligns with peers and fails to attend to the teacher brings punishment to everyone, and so quickly earns peer group ire and condemnation. Even unintended lapses are punished: A boy who is unable to open his locker is scolded for not bringing books to class—and for showing attitude. (A wall poster declares, "Attitude, to me, is more important than facts. . . .") Gradually a clandestine peer culture forms, "sneaking stuff by" the teacher, employing special handshakes, and argot.

Furthermore, the classroom activities make contradictory demands. Students must work together in groups and the teacher insists they "have to talk," but any informal conversation is a sign they are off task, "not doing your job." There is no opportunity to build the relationships needed for collaboration. The science projects become a fiasco. Getting the wrong answer is hard to avoid, but it also becomes something to be feared, an indication to the teacher that they are not doing their job, grounds for reproach and public shaming. The groups collapse into acrimony, aggravation, and accusation. Some students reject teacher and school: "I hate school, 'cause of the work." Others disparage their peers: "I like school; I can't work with him!" Collaboration turns into recrimination.

Now, openly brazen and impertinent behavior emerges in an attitude of opposition to the order the teacher represents. When the teacher tells someone to turn around, the student interprets her literally and turns all the way, facing backward. Before the teacher comes into the room, a student yells, "Raise your hand if you hate the teacher!" Someone caught talking now is likely to stare back challengingly. The teacher's response is to heighten order and discipline, but students' conformity is increasingly grudging, sullen, and superficial. For many, the classroom has become oppressive and unfair, offering nothing of value. The children can hardly wait for school to end.

This may strike the reader as an unduly negative case, but it is in occasions of apparent failure to learn that the ontologi-

⁵This account is based on Martin J. Packer's observations of two classrooms, here melded into one and interpreted freely in a manner influenced by Loewenberg (1965) and Hyppolite (1946/1974). We must emphasize that we in no way attribute the events described to any individual failings on the part of the teacher.

cal aspects of schooling are highlighted. And our account of schooling might seem surprisingly agonistic to call sociocultural (Packer, in press-a): Vygotsky's work (e.g., 1978) has become the basis of prescriptions for a pedagogy of cooperation and collaboration. But Vygotsky also wrote of "a bitter struggle, now concealed, now explicit, between teacher and student" (p. 348, emphasis removed) and of the "atmosphere of tense social struggle" (p. 349) in the classroom. He declared that "education and creativity are always tragic processes, inasmuch as they always arise out of 'discontent,' out of troubles, from discord" (p. 349). And he approvingly quoted William James:

Bad behavior, from the point of view of the teacher's art, is as good a starting-point as good behavior; in fact, paradoxical as it may sound to say so, it is often a better starting-point than good behavior would be. (p. 347)

The Conduct of Educational Research

At first glance the ontological processes we have articulated in this article might seem obscure and mysterious. But in fact all of them can be observed in everyday discourse, and they can be studied with the appropriate research methodology. The nondualist ontology we have articulated and the account of learning that follows from it offer an interpretive framework that defines both the scope and method of a research program that attends both to cultural and historical context and to the details of interaction.

This is not the place to lay out in great detail such a research program, but it is important to make a few main points. First, in terms of scope, we observe that the six themes can help weave together several threads of current research on schooling and link otherwise loosely connected observations. They can explain the finding that "positive, supportive relationships between teacher and child and among peers" are important for children's adjustment to elementary school and success in social and academic outcomes (Perry & Weinstein, 1998, p. 188), as well as the suggestion that "development of antiacademic values and disidentification with schooling" can be a "positive" or functional response (p. 189). They offer a new way of understanding the "relationship dimension" of middle school environment (Midgley & Edelin, 1998), especially how in adolescence lack of "positive interpersonal relationships in school" (p. 202), such as an advisor-advisee relationship with a teacher, can lead to the deterioration of achievement and well-being. They can reconcile observations of the formation of oppositional peer culture in high school (Eckert, 1989) with those of the effectiveness of "caring school communities" (Battistich, Solomon, Watson, & Schaps, 1997).

More broadly, these themes can foster the move Salomon (1995) called for in educational psychology, away from reductionism and individualism toward recognition that "individuals are themselves composites." And they can provide

a way of investigating the "personal aspects of development" whose importance Ferrari and Mahalingam (1998) emphasized: "those pragmatic and contextual aspects of development that characterize how individuals become persons" (p. 35).

An example of the effects the view of learning articulated in this article can disclose is offered by a study of the influence of "market-place" reforms and National Science Foundation's "state systemic initiative" (Packer, 2001). Local reform efforts, informed by practitioners' awareness of the cultural and relational character of teaching and learning, contrasted with the larger reform initiatives, which imposed modes of economic and political rationality respectively. The marketplace reforms viewed schooling as a production process whose efficiency needed improving; the state systemic initiative viewed it as a delivery system whose components required alignment. The consequences were dramatic: In particular, the marketplace reform's focus on standardized testing as measure of both student achievement and school quality cut deeply to the heart of the classroom because it transformed the terms of recognition between teacher and students. Evaluation by remote experts of a child's test performance as "proficient" or "deficient" offered abstract, anonymous recognition of student, teacher, school, and district, fracturing community and derailing local reform. Testing drew the classroom into an increasingly complex "network-like ontology" that spanned school district, state, and nation—"fibrous," "highly connected" (Latour, 1997)—so that who a child became was determined not within the practices of a local community but at distal sites of power.

Second, what research methodology is appropriate? We agree with Cobb and Bowers (1999) that its unit of analysis must be broader than the individual, and with Greeno & TMSMTAPG (1998) that it must attend to the content of speech, turn taking, and reference. Ours is an interpretive logic of inquiry, in which the unit of analysis is the interaction (cf. Packer, 1985, 1999; Ricoeur, 1976; Taylor, 1971/1987; Thompson, 1990). Drawing on ethnomethodology (Garfinkel, 1967) and conversation analysis (Atkinson & Heritage, 1984), we undertake a pragmatic analysis (Levinson, 1983) attending to the turns taken and the moves made in the language games (Wittgenstein, 1953) of a community, to show the negotiated accomplishments of everyday interaction—the ways participants in discourse move and transform one another. In particular, interpersonal moves of status and intimacy reveal the dynamics of desire and recognition.

And, influenced also by ontological hermeneutics (Packer, 1997), our analysis extends to the way objects are indexed and contexts invoked, disclosing the constitutive causality of social context. This enables study of the habitual modes of activity that comprise an institution—modes and relations of production, distribution, and exchange of artifacts (goods and symbolic forms)—and the "pragmatic paradoxes" that can split people (Watzlawick, Beavin, & Jackson, 1967).

CONCLUSIONS

We have argued that sociocultural and constructivist perspectives on learning are not simply complementary views of a single phenomenon, because they presume different, and incommensurate, ontological assumptions. The sociocultural perspective's nondualist ontology avoids the paradoxes of dualism, and we have articulated six key themes of this ontology. These six themes—that the person is constructed, in a social context, formed through practical activity, and in relationships of desire and recognition that can split the person, motivating the search for identity—clarify the sociocultural perspective's claims about the link between learning and identity; they correct any simple equating of identity with community membership, and of learning with enculturation. At the same time, these themes suggest that the dualism considered natural by the constructivist perspective is produced only in specific circumstances—circumstances whose historical and cultural character and genesis come into view from the sociocultural perspective.

We have proposed that schooling is one such circumstance. The traditional classroom is a community that defines an autonomous reality of social positions, objective rules, and decontextualized abstractions that call for "rational" understanding and manipulation of written symbol systems. But these positions, rules, and abstractions are only apparently independent and objective; in actuality they must be sustained in and through ongoing interaction. School has a relational and cultural character without which problem solving, skill acquisition, and intellectual inquiry would not occur, and which makes it the site of a search, sometimes a struggle, for identity. When this is ignored we do not adequately understand either the social or the cognitive aspects of schooling, and we cannot grasp the way schools transform children into adults who will live and work in a complex modern society.

Psychologists sometimes draw a line between learning and development, and sometimes blur the distinction. In the current discussion of learning, differences between learning and development seem to have dissolved; Rogoff (1998), for example, used the terms "interchangeably" (p. 680). Piaget drew a distinction: He viewed development, the acquisition of "general cognitive structures," as natural and spontaneous, more fundamental than learning, the artificial and induced acquisition of "specific information," and making the latter possible (Ginsburg & Opper, 1979, pp. 218–219). Our account introduces a different distinction, between epistemological and ontological aspects of human change: The former is always an aspect of the latter. What constructivists call learning is only part of a larger process of human change and transformation, the process called learning by socioculturalists. Whether one attaches the label "learning" to the part or to the whole, acquiring knowledge and expertise always entails participation in relationship and community and transformation both of the person and of the social world.

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