

Cultural Psychology

A ONCE AND FUTURE DISCIPLINE

Michael Cole

The Belknap Press of Harvard University Press
Cambridge, Massachusetts, and London, England
1996

Rather than start with the concept of a tool, as did the Russians, I shall treat the concept of a tool as a subcategory of the more general conception of an artifact.

Artifacts

Ordinarily one thinks of an artifact as a material object—something manufactured by a human being. In anthropology, the study of artifacts is sometimes considered part of the study of material culture, which is somehow distinct from the study of human behavior and knowledge. According to this “artifact as object” interpretation, it is easy to assimilate the concept of artifact into the category of tool—but from this nothing much is to be gained.

According to the view presented here, which bears a close affinity to the ideas of John Dewey and also traces its genealogy back to Hegel and Marx, an artifact is an aspect of the material world that has been modified over the history of its incorporation into goal-directed human action. By virtue of the changes wrought in the process of their creation and use, artifacts are simultaneously *ideal* (conceptual) and *material*. They are ideal in that their material form has been shaped by their participation in the interactions of which they were previously a part and which they mediate in the present.

Defined in this manner, the properties of artifacts apply with equal force whether one is considering language or the more usually noted forms of artifacts such as tables and knives which constitute material culture.¹ What differentiates the word “table” from an actual table is the relative prominence of their material and ideal aspects and the kinds of coordinations they afford. No word exists apart from its material instantiation (as a configuration of sound waves, hand movements, writing, or neuronal activity), whereas every table embodies an order imposed by thinking human beings.²

The dual material-conceptual nature of artifacts was discussed by the Russian philosopher Evald Ilyenkov (1977, 1979), who based his approach on that of Marx and Hegel. In Ilyenkov’s system, ideality results from “the transforming, form-creating, activity of social beings, their aim-mediated, sensuously objective activity” (quoted in Bakhurst, 1990, p. 182). From this perspective, the form of an artifact is more than a purely physical form. “Rather, in being created as

56

Putting Culture in the Middle

IN THIS CHAPTER I begin the process of reconstructing the cultural-historical approach to development by elaborating on the notion of tool mediation, and by retaining some features of the Russian approach while changing others. I initially found the Russian cultural-historical psychologists’ ideas about culture attractive because they seemed to offer a natural way to build up a theory of culture in mind that begins from the organization of mediated actions in everyday practice. This was the same point to which our cross-cultural research had brought my colleagues and me, so it was an obvious point of convergence. But our cross-cultural experience had also induced a profound skepticism about concluding, on the basis of interactional procedures treated as if they were free of their own cultural history, that nonliterate, “nonmodern” people think at a lower level than their modern, literate counterparts. In their belief in historical and mental progress, the Russians were led into many of the same methodological traps we had fallen into in our own cross-cultural work (Cole, 1976).

In light of these considerations, I shall begin my attempt to create a conception of culture adequate to the theories and practices of a second, cultural psychology with the phenomenon of mediation.

an embodiment of purpose and incorporated into life activity in a certain way—being manufactured for a *reason* and put into *use*—the natural object acquires a significance. This significance is the 'ideal form' of the object, a form that includes not a single atom of the tangible physical substance that possesses it" (Bakhurst, 1990, p. 182).

Note that in this way of thinking mediation through artifacts applies equally to objects and people. What differs in the two cases is the ways in which ideality and materiality are fused among members of these two categories of being, and the kinds of interactivity into which they can enter.

⊗ This view also asserts the primal unity of the material and the symbolic in human cognition. This starting point is important because it provides a way of dealing with the longstanding debate in anthropology and allied disciplines: Should culture be located external to the individual, as the products of prior human activity, or should it be located internally, as a pool of knowledge and beliefs? Both views have a long history in anthropology (D'Andrade, 1995; Harkness, 1992). However, over the past twenty years or so, coincident with the cognitive revolution in psychology and the advent of Chomskian linguistics, the study of culture as patterns of behavior and material products appears to have given way to the tradition that considers culture to be composed entirely of learned symbols and shared systems of meaning—the ideal aspect of culture—that are located in the head.

The concept of artifacts as products of human history that are simultaneously ideal and material offers a way out of this debate. At the same time, as I hope to demonstrate, it provides a useful point of contact between cultural-historical psychology and contemporary anthropological conceptions of culture in mind.³

The Special Structure of Artifact-Mediated Action

The Russian cultural-historical psychologists used a triangle to picture the structural relation of the individual to environment that arises *pari passu* with artifact mediation (see Figure 5.1). Simplifying their view for purposes of explication, the functions termed "natural"

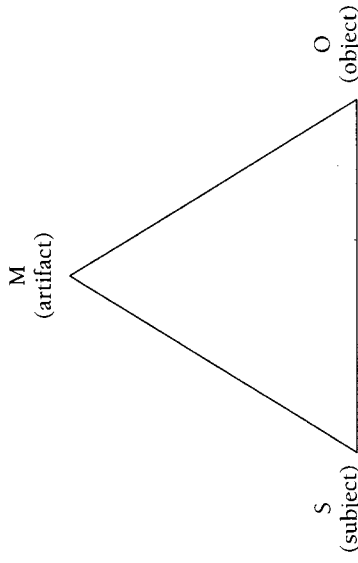


Figure 5.1. The basic mediational triangle in which subject and object are seen not only as "directly" connected but simultaneously as "indirectly" connected through a medium constituted of artifacts (culture).

(or "unmediated") are those along the base of the triangle; the "cultural" ("mediated") functions are those where the relation between subject and environment (subject and object, response and stimulus, and so on) are linked through the vertex of the triangle (artifacts).

There is some temptation when viewing this triangle to think that when cognition is mediated, thought follows a path through the top line of the triangle that "runs through" the mediator. However, the emergence of mediated action does mean that the mediated path replaces the natural one, just as the appearance of culture in phylogeny does not mean that culture replaces phylogeny. One does not cease to stand on the ground and look at the tree when one picks up an axe to chop the tree down; rather, the incorporation of tools into the activity creates a new structural relation in which the cultural (mediated) and natural (unmediated) routes operate synergistically; through active attempts to appropriate their surroundings to their own goals, people incorporate auxiliary means (including, very significantly, other people) into their actions, giving rise to the distinctive, triadic relationship of subject-medium-object.

In this and later chapters I will expand upon this basic structural diagram to develop an appropriately complex approach to the cultural mediation of thought. But even this basic notion that human thought is the emergent consequence of intermingling of "direct, natural, phylogenetic" and "indirect, cultural" aspects of experience is

sufficient to bring to the fore the special quality of human thought referred to as the duality of human consciousness. Many expressions of this idea can be found in both the Russian and the Western European/American traditions (Durkheim, 1912). For example, the American anthropologist Leslie White wrote: "An axe has a subjective component; it would be meaningless without a concept and an attitude. On the other hand, a concept or attitude would be meaningless without overt expression, in behavior or speech (which is a form of behavior). Every cultural element, every cultural trait, therefore, has a subjective and an objective aspect" (1959, p. 236).⁴

True to the spirit of cultural-historical approaches, White emphasized the temporal aspect of cultural mediation and its psychological implications: "With words man creates a new world, a world of ideas and philosophies. In this world man lives just as truly as in the physical world of his senses . . . This world comes to have a continuity and a permanence that the external world of the senses can never have. It is not made up of present only but of a past and a future as well. Temporally, it is not a succession of disconnected episodes, but a continuum extending to infinity in both directions, from eternity to eternity" (White, 1942, p. 372).

Luria described this double world in the following way:

The enormous advantage is that their world doubles. In the absence of words, human beings would have to deal only with those things which they could perceive and manipulate directly. With the help of language, they can deal with things that they have not perceived even indirectly and with things which were part of the experience of earlier generations. Thus, the word adds another dimension to the world of humans . . . Animals have only one world, the world of objects and situations. Humans have a double world. (1981, p. 35)

A great deal more can and will be said about this basic mediational conception and the peculiar form of consciousness to which it gives rise. Artifacts and artifact-mediated individual human action are only a starting point for developing the needed conceptual tools. Neither artifacts nor actions exist in isolation. Rather, they are interwoven with each other and with the social worlds of the human beings they mediate to form vast networks of interconnections (Latour, 1994).

Some way is needed to talk about structure in the resulting cultural medium.

The minimal mediational structure given in Figure 5.1 cannot stand alone as a representation of mediated action in its social context. In order to elaborate a cultural-historical psychology to guide our research in complex, everyday settings, we need to be able to talk about aggregations of artifacts appropriate to the events they mediate and to include the mediation of interpersonal relationships along with mediation of action on the nonhuman world.

Three Levels of Artifacts

One useful suggestion for how to elaborate on the notion of artifact was made by Marx Wartofsky, who proposed a three-level hierarchy. Wartofsky described artifacts (including tools and language) as "objectifications of human needs and intentions already invested with cognitive and affective content" (1973, p. 204).

The first level of Wartofsky's framework consists of *primary artifacts*, those directly used in production. As examples, he gives "axes, clubs, needles, bowls"; my examples will include words, writing instruments, telecommunications networks, and mythical cultural personages. Primary artifacts correspond closely to the concept of artifact as matter transformed by prior human activity that I provided earlier, although I do not distinguish for current purposes between production of material goods and production of social life in general.

Secondary artifacts consist of representations of primary artifacts and of modes of action using primary artifacts. Secondary artifacts play a central role in preserving and transmitting modes of action and belief. They include recipes, traditional beliefs, norms, constitutions, and the like.

The third level is a class of artifacts "which can come to constitute a relatively autonomous 'world,' in which the rules, conventions and outcomes no longer appear directly practical, or which, indeed, seem to constitute an arena of non-practical, or 'free' play or game activity" (p. 208). Wartofsky calls these imagined worlds *tertiary artifacts*. Such imaginative artifacts, he suggests, can come to color the way we see the "actual" world, providing a tool for changing current praxis. In modern psychological jargon, modes of behavior acquired

when interacting with tertiary artifacts can transfer beyond the immediate contexts of their use. Wartofsky applies his conception of tertiary artifacts to works of art and processes, of perception; I want to generalize his conception by linking the notion of artifact on the one hand to notions of schemas and scripts and on the other hand to notions of context, mediation, and activity found in contemporary cognitive psychology, anthropology, and allied parts of the cognitive sciences.

If one accepts this characterization of artifacts as the linchpin of cultural mediation along the lines suggested by Wartofsky, one next step is to look at ways in which artifacts of the three different kinds are woven together in the process of joint human activity. How patterned are the artifacts constituting human culture?

The Cohesion and Coherence of Culture

Contemporary anthropologists are divided with respect to the closely linked issues of how different parts of culture are interconnected and how coherent culture is across situations. In a wide-ranging discussion of this issue a few years ago, Paul Kay suggested "semi-seriously" that the supposed coherence of culture is a coherence imposed on the anthropologist by the need to publish a coherent story. It is an illusion: "if I go out and study the 'whoever,' I've got to come back and tell a consistent and entertaining story about what the 'whoever' are like—and everything they do better fit into this one story" (in Shweder and LeVine, 1984, p. 17).

Kay was immediately challenged by Clifford Geertz, whose work was almost certainly one of the sources of Kay's provocative remark. Geertz is justly famous for developing the notion that different parts of culture cohere such that, for example, one could use a Balinese cockfight or puppet theater (tertiary artifacts in Wartofsky's scheme of things) as an organizing metaphor for all of Balinese society (Geertz, 1973). In the early 1970s Geertz cited with approval Max Weber's image of humankind as "an animal suspended in webs of significance he himself has spun," and declared: "I take culture to be those webs" (1973, p. 5). Later in the same work, Geertz suggested that culture should be conceived of by analogy with a recipe or a computer program, which he referred to as "control mechanisms."

Geertz's work is pivotal in my efforts to reconcile the ideas of the Russian cultural-historical psychologists with those of contemporary cultural anthropologists. Geertz is often read as an anthropologist who adopts the conception of culture as inside-the-head knowledge. While this is certainly an aspect of his thinking that has become more dominant over time (Geertz, 1983), I find it significant that he explicitly rejects the strictly idealist notion of culture in favor of a view that links up neatly with the notion of artifact mediation:

The "control mechanism" view of culture begins with the assumption that human thought is basically both social and public—that its natural habitat is the house yard, the marketplace, and the town square. Thinking consists not of "happenings in the head" (though happenings there and elsewhere are necessary for it to occur) but of traffic in what have been called, by G. H. Mead and others, significant symbols—words for the most part but also gestures, drawings, musical sounds, mechanical devices like clocks. (1973, p. 45)

I hope it is clear that there is a close affinity between this notion of culture as control mechanism and the mediation of action through artifacts.

Geertz's use of Weber's metaphor of "webs of significance" evokes images of the beautiful patterning of a spider's web, while the recipe metaphor suggests that the patterning is quite local and specific to particular ingredients, the rules for combining them, and the circumstances in which they are cooked. Diversity and uniformity, no less than the internal versus external interpretations of culture, were war-
ring in Geertz's definition.

When responding to Kay's suggestion that the coherence of culture may be entirely in the eye of the outside observer, Geertz sought a new metaphor to describe his sense that human beings' cultural medium is neither made up of unconnected bits and pieces nor a perfect configuration: "the elements of culture are not like a pile of sand and not like a spider's web. It's more like an octopus, a rather badly integrated creature—what passes for a brain keeps it together, more or less, in one ungainly whole" (quoted in Shweder, 1984, p. 19).

The Geertz-Kay discussion suggests two extremes to be avoided in anthropologists' efforts to characterize the overall degree of cultural

cohesion: (1) human life would be impossible if every event was experienced *sui generis*, as an isolated instance, and (2) it is no more helpful to believe that a single, uniform configuration of cultural constraints is constitutive of all events within a culture. Rather, it is essential to take into account the fact that human activity involves elaborate and shifting divisions of labor and experience within cultures, so that no two members of a cultural group can be expected to have internalized the same parts of whatever "whole" might be said to exist (D'Andrade, 1989; Schwartz, 1978, 1990).

As a consequence of these difficulties, it is not possible to say, in general, how much cultural coherence and integration exists between the two extremes of uniqueness and chaos; in order to say anything useful, it is necessary to specify sources of coherence and patterning as a part of the ongoing activities that the inquirer wants to analyze. In fact, when one considers simultaneously the heterogeneous sources of structure in the cultural medium and the necessarily partial knowledge of the people who use it, the wonder is that human beings are capable of coordinating with one another at all (a point made many decades ago by Durkheim, 1912).

The "internal" and "external" approaches to culture, applied to how to locate structure in the cultural medium, veer in predictably different directions. As external sources of coordination one can point to the many material manifestations of human action, the intricate "webs of significance" in its outer aspect. These are clearly visible as embodied symbols, routines, and rituals for coordinating artifacts. The opposite, internal line of explanation posits internal psychological structures or cultural knowledge as the sources of intersubjectivity and coordinated action and seeks to understand the processes of interpretation.

The version of a cultural-historical approach that I am proposing identifies the point of articulation of these two sides of culture in the dual nature of artifacts. The challenge is to show that this formulation supersedes the "inner" and "outer" approaches to culture and mind that dominate contemporary discourse.

Cultural Models, Schemas, and Scripts

It was my good fortune that when I began formulating the ideas described in this chapter I was a member of an informal interdisciplin-

ary discussion group associated with the Center for Human Information Processing at the University of California at San Diego. Our topic was our differing approaches to human thought processes, and possible ways to bridge the differences between them.⁵

Several members of this group had pioneered the idea that human experience is mediated by cognitive schemas which channel individual thinking by structuring the selection, retention, and use of information. In psychology *schema* is a term used to refer to knowledge structures in which the parts relate to one another and the whole in a patterned fashion (Mandler, 1985). According to David Rumelhart, "a schema contains, as part of its specification, the network of interrelations that is believed normally to hold among constituents that are instances of the schema" (1978, p. 3). There are schemas representing our knowledge of objects, situations, events, sequences of events, actions, and sequences of action (Rumelhart and Norman, 1980).

Schemas are selection mechanisms. They specify how certain essential elements relate to one another while leaving other, less essential elements to be filled in as needed according to the circumstances. Some elements, so-called default values, may not be specified at all. For example, if I hear my cat meowing outside the door, the elements, "breathes," and "warm blooded" are plausible default values. I know they are true without having to think about them. Under some circumstances, such as when I see the cat lying under the car and it is not clear if it is dead or alive, those elements of the schema may be crucial to my reasoning.

One appealing characteristic of the kind of schema theory my colleagues were developing is that it implies the context-specificity of thinking. Rumelhart made this point with respect to adult reasoning, arguing that while schemas play a central role in reasoning, "most of the reasoning we do apparently *does not* involve the application of general-purpose reasoning skills. Rather it seems that most of our reasoning ability is tied to particular schemata related to particular bodies of knowledge" (1978, p. 39). Jean Mandler pointed out an implication of this view that seemed to describe both the cultural differences in thinking and the difficulties engendered by the use of standardized psychological testing in cross-cultural research when she remarked that **behavior will differ in familiar and unfamiliar sit-**

uations because "familiar situations are those for which schemata have already been formed and in which top-down processes play a larger role" (1980, p. 27).

Roy D'Andrade (1984, 1990, 1995) has generalized the notion of schemas for objects and events in order to link these concepts from psychology with the concepts and phenomena of psychological anthropology. He introduced the idea of *cultural* schemas, patterns of elementary schemas that make up the meaning system characteristic of any cultural group. In D'Andrade's terms, "Typically such schemas portray simplified worlds, making the appropriateness of the terms that are based on them dependent on the degree to which these schemas fit the actual worlds of the objects being categorized. Such schemas portray not only the world of physical objects and events, but also more abstract worlds of social interaction, discourse, and even word meaning" (1990, p. 93).

D'Andrade (1990, p. 108) refers to intersubjectively shared cultural schemas as *cultural models*. Cultural models function to interpret experience and to guide action in a wide variety of domains, "including events, institutions, and physical and mental objects." A monograph edited by Naomi Quinn and Dorothy Holland (1987) contains studies which illustrate how adults use cultural models to reason about objects (such as cats), social institutions (such as marriage), and general properties of human beings (such as how the mind works).

An especially important kind of schema for purposes of grounding a cultural-psychological theory in people's everyday activities is event schemas, often referred to as *scripts* (Schank and Ableson, 1977). A script is an event schema that specifies the people who appropriately participate in an event, the social roles they play, the objects they use, and the sequence of actions and causal relations that applies.

Both Jerome Bruner (1990) and Katherine Nelson (1981, 1986) base their analysis of cognitive development on such event representations. Nelson refers to scripts as "generalized event schemas." Scripts, she writes, provide "a basic level of knowledge representation in a hierarchy of relations that reaches upward through plans to goals and themes" (1981, p. 101). Nelson illustrates the development of script-mediated thinking using the following examples, the first from

a three-year-old, the second from a child a little under five, responding to a request to "tell me about going to a restaurant." Here is the three-year-old:

Well, you eat and then go somewhere.

The five-year-old has more to say:

Okay. Now first we go to restaurants at night-time and we, um, we and we go and wait for a while, and then the waiter comes and gives us the little stuff with the dinners on it, and then we wait for a little bit, a half and hours or a few minutes or something, and um, then our pizza comes or anything, and um [interruption] . . . [The adult says, "So then the food comes . . ."] Then we eat it, and um, then when we're finished eating the salad that we order we got to eat our pizza when its done, because we get the salad before the pizza's ready. So then when we're finished with all the pizza and all our salad, we just leave. (Nelson, 1981, p. 103)

Several points about these children's formulations stand out. First, they are indeed generalized, although grounded in particulars; the children are talking about a habitual event ("You eat," "We go"). Second, the descriptions are dominated by the temporal sequencing of actions. Third, the causal logic of the event inheres in the temporal ordering of actions (pizza is eaten after salad because it takes longer to prepare). Finally, there is a good deal left unsaid, in part because it is taken for granted—we open the door and enter the restaurant, we pick up our forks and use them to eat the salad, and so on—and in part because the child is not involved and most likely does not understand (for example, that one pays for the food and leaves a tip).

In her work on children's acquisition of event representations, Nelson highlights other important properties of scripts that mark their nature as mediators. First, she suggests that scripts, like the cultural schemas discussed by D'Andrade, serve as guides to action. When people participate in a novel event, they must seek out an answer to the question, "What's going on here?" Once a person has even a crude idea of the appropriate actions associated with going to a restaurant, he or she can enter the flow of the particular event with partial knowledge, which gets enriched in the course of the event itself, facilitating

later coordination. "Without shared scripts," Nelson writes, "every social act would need to be negotiated afresh" (p. 109).

Nelson also points out that children grow up within contexts controlled by adults and hence within adult scripts. By and large, adults direct the children's action and set the goals, rather than engage in direct teaching. In effect, they use their notion of the appropriate script to provide constraints on the child's actions and allow the child to fill in the expected role activity. In this sense, "the acquisition of scripts is central to the acquisition of culture" (p. 110). I will return to this point in Chapter 7.

According to Bruner (1990), scripts are best considered elements of a narrative, which play a role in his theorizing similar to that of cultural models in D'Andrade's approach. For Bruner, it is narrative, the linking of events over time, that lies at the heart of human thought. The representation of experience in narratives provides a frame ("folk psychology") which enables humans to interpret their experiences and one another. If it were not for such narrativized framing, "we would be lost in a murk of chaotic experience and probably would not have survived as a species in any case" (p. 56).

Schemas and Artifacts

Since schema theory started to gain wide acceptance among cognitive psychologists and anthropologists somewhat over a decade ago, schemas have generally been interpreted as mental structures inside the head. Interpreted in this way, schemas and scripts fit comfortably with the internal notion of culture as meanings, which come unmoored from their material instantiation. Interpreted in this light, the notion of schema is incompatible with the notion of artifact-mediated mediation I have been seeking to develop. The solution, of course, is to say that scripts are not uniquely inside-the-head phenomena but, like all artifacts, participate on both sides of the "skin line."

Interestingly, F. C. Bartlett, whose ideas have inspired several modern schema theorists, provided an alternative interpretation of schema when the term came into psychology in the 1920s (Bartlett, 1932). Bartlett wrote about schemas as conventions, social practices which were both inside and outside the head; they are both materialized practices and mental structures (Edwards and Middleton,

1986). This notion of schema obviously coincides nicely with the notion of artifact-mediated mediation I am proposing.

Recent developments indicate that something akin to Bartlett's approach is finding favor in cognitive anthropology. For example, D'Andrade (1995), who once adhered to the "inside" view of culture, has recently argued for a definition of culture that harks all the way back to E. B. Tylor: culture as the entire content of a group's heritage, including both its cultural schemas and models and its material artifacts and cultural practices. Still, the two sides of culture remain separate in D'Andrade's approach. He posits two kinds of cognitive structures, schemas and symbols. *Schemas* are the ideal side of artifacts as conceived of here; they are abstract mental objects. *Symbols* are physical things: words, phrases, pictures, and other material representations. The meaning of the symbol is taken to be the schema which the symbol signifies.

D'Andrade summarizes the relationship of symbols, schemas, and the world as follows: "The schema which represents the sound of a word and the schema which represents the thing in the world referred to by that word are entirely different, although tightly connected in that the schema which represents the sound of a word signifies (has as its meaning) the schema which represents the thing in the world" (1995, p. 179). While differences remain, it is clear that there is agreement of a tight connection between symbol/schema and artifacts.

Edwin Hutchins (1995), another anthropologist who has sought to integrate the internal and external conceptions of culture, proposes a different way to think of the intimate three-way connection of culture, cognition, and the world. Culture, according to Hutchins, should be thought of as a process, not as "any collection of things, whether tangible or abstract." Culture "is a process and the 'things' that appear on list-like definitions of culture are residues of the process. Culture is an adaptive process that accumulates the partial solutions to frequently encountered problems . . . Culture is a human cognitive process that takes place both inside and outside the minds of people. It is the process in which our everyday cultural practices are enacted" (p. 354).

In more recent work, Bruner (1996) and Nelson (1986) also treat scripts as dual entities, one side of which is a mental representation, the other side of which is embodied in talk and action. For example,

Bruner writes that "learning and thinking are always *situated* in a cultural setting and always dependent upon the utilization of cultural resources" (1996, p. 4).

Whether one draws on D'Andrade, Hutchins, or other like-minded anthropologists (see the volumes edited by D'Andrade and Strauss, 1992, and Holland and Quinn, 1987) or on Nelson and Bruner, I find encouraging the compatibility of their ideas with the notion of schemas as conventions (in Bartlett's terms) or artifacts (in mine). Nor am I alone in making this connection.⁶

The Need for More Inclusive Analysis

Secondary artifacts such as cultural schemas and scripts are essential components of the "cultural tool kit." They partake of both the ideal and the material; they are materialized and idealized (reified) in the artifacts that mediate peoples' joint activities. By that very fact of reification they are present as resources both for the idiosyncratic interpretation that each person will have of their joint activity and for the constant reproduction of the coordination necessary to reproduce that activity.

However, it requires little reflection to realize that even when conceived of as secondary artifacts, scripts and schemas are insufficient to account for thought and action. Even under the most generous assumptions about mechanisms that link object schemas together into hierarchies or event schemas into sequentially ordered sets, such knowledge structures drastically underdetermine what one should think or how one should behave on any given occasion *even assuming that one has acquired the cultural model or script in question.*⁷

Every schema "leaves out an enormous amount and is a great simplification of the potential visual, acoustic, sensory, and propositional information that could be experienced" (D'Andrade, 1990, p. 98). Consequently, while culture is a source of tools for action, the individual must still engage in a good deal of interpretation in figuring out which schemas apply in what circumstances and how to implement them effectively. For example, a large, orange, striped, furry leg with a cat-like paw dangling from the shelf in our child's closet is likely to evoke a different schema, different emotions, and different actions from those evoked by a similar object glimpsed under our

hammock in a lean-to in the middle of a Brazilian rain forest. Such considerations lead to the unavoidable conclusion that in order to give an account of culturally mediated thinking it is necessary to specify not only the artifacts through which behavior is mediated but also the circumstances in which the thinking occurs.

These considerations lead us back to the essential point that all human behavior must be understood relationally, in relation to "its context" as the expression goes. But implementation of this insight has been a source of continuing disagreement and confusion. These difficulties are indexed by the varied vocabulary used to speak about the "something more" that must be added to artifact mediation if one is to give an account of the relationship between culture and mind. In the previous paragraph I used the term *circumstances* as a commonsense gloss on what that something more might be. When we turn to technical discussions of this issue, the relevant terms include *environment, situation, context, practice, activity*, and many more. At issue here is a problem very similar to the one we encountered in thinking about the relation of the material and the ideal in artifacts. In that case argument swirled around which comes first in shaping artifacts, materiality or ideality. In this case the argument turns on which comes first in human thought, the object (text) or its surround (context).

As Kenneth Burke remarked several decades ago, considerations of action and context create inescapable ambiguity because the very notion of a *substance* (sub stance) must include a reference to the thing's context "since that which supports or underlies a thing would be a part of the thing's context. And a thing's context, being outside or beyond the thing, would be something the thing is *not*" (1945, p. 22). Faced with these complexities that have defeated so many others, I will not aspire to a definitive treatment of context in this book. But I will aspire to distinguishing between two principal conceptions of context that divide social scientists and to accumulating some necessary conceptual tools to act as heuristics in guiding research on culture and development.

Situations and Contexts

Many years ago John Dewey (1938) proposed a relational theory of cognition in which he used the term *situation* in a manner that leads

naturally into a discussion of context: "What is designated by the word 'situation' is not a single object or event or set of objects and events. For we never experience nor form judgments about objects and events in isolation, but only in connection with a contextual whole. This latter is what is called a 'situation'" (p. 66). Dewey goes on to comment that psychologists are likely to treat situations in a reductive fashion: "by the very nature of the case the psychological treatment [of experience] takes a *singular* object or event for the subject-matter of its analysis" (p. 67). But: "In actual experience, there is never any such isolated singular object or event; an object or event is always a special part, phase, or aspect, of an environing experienced world—a situation" (p. 67).

Isolating what is cognized from life circumstances is often fatally obstructive to understanding cognition. It is such isolation (typical of experimental procedures in psychological studies of cognition), Dewey argued, that gives rise to the illusion that our knowledge of any object, be it "an orange, a rock, piece of gold, or whatever," is knowledge of the object in isolation from the situation in which it is encountered.

Dewey's equation of situation with a contextual whole provides a proper relational orientation for the concept of *context*, perhaps the most prevalent term used to index the circumstances of behavior. Despite Dewey's prescient comments half a century ago, psychological analysis of context has all too often fallen into the difficulties about which he warned us.

Context as That Which Surrounds

When we retreat to Webster's dictionary as a starting point for examining the concept of context, we find crucial ambiguities that serve to obscure the errors to which Dewey pointed. Context is defined as "the whole situation, background, or environment relevant to a particular event," and "environment" is defined as "something that surrounds." "The whole situation" and "that which surrounds" are mixed together in the same definition.

The notion of context as "that which surrounds" is often represented as a set of concentric circles representing different "levels of context" (see Figure 5.2). The psychologist's focus is ordinarily on

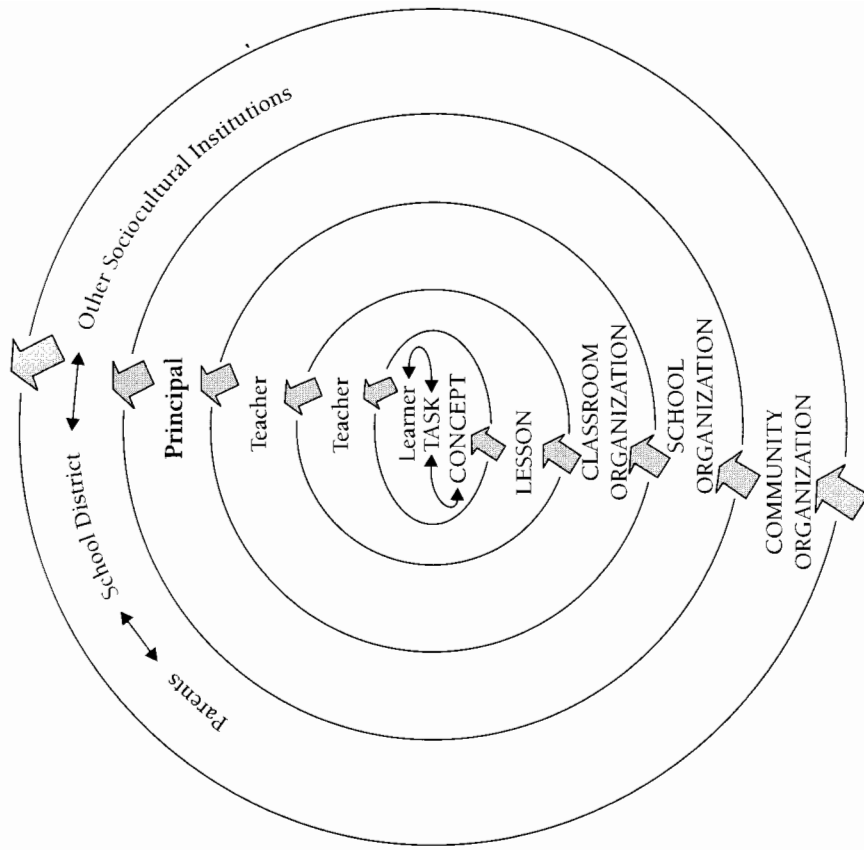


Figure 5.2. Concentric circles representing the notion of context as "that which surrounds," with a child at its center. The context here is the one surrounding children's performance in a classroom lesson.

the unit "in the middle," which may be referred to as a task or activity engaged in by individuals. When using the "surrounds" interpretation of context, the psychologist seeks to understand how this task is shaped by the broader levels of context.

This image is probably best known in connection with Urie Bronfenbrenner's (1979) book on the ecology of human development. He describes embedded systems, starting with the microsystem at the core and proceeding outward through mesosystems and exosystems, to the macrosystem. In applying the notion of context to issues of education, Peg Griffin and I took as the "unit in the middle" a teacher-

pupil exchange that was part of a lesson that was part of a classroom that was part of a school that was part of a community (Cole, Griffin, and LCHC, 1987).

The study of language is an important domain in which the promise and problems of the idea of "layers of context" has been usefully applied (Bateson, 1972; Jakobson and Halle, 1956). A fundamental property of language is that its levels of organization are mutually constituted; a phoneme exists as such only in combination with other phonemes which make up a word. The word is the context of the phoneme. But the word exists as such—"has meaning"—only in the larger context of the utterance, which again "has meaning" only in a relationship to a large unit of discourse. Gregory Bateson summarized this way of thinking: "This hierarchy of contexts within contexts is universal for the communicational . . . aspect of phenomena and drives the scientist always to seek explanation in the ever larger units" (1972, p. 402).

Note that in this description there is no simple, temporal ordering. "That which surrounds" occurs before, after, and simultaneously with the "act/event." We cannot say sentences before we say words, nor words before we synthesize phonemes in an appropriate way; rather, there is a complex temporal interdependence among levels of context which motivates the notion that levels of context constitute one another. To take our example of the teacher-child exchange, it is easy to see such events as "caused" by higher levels of context: a teacher gives a lesson, which is shaped by the classroom it is a part of, which in turn is shaped by the kind of school it is in, which in turn is shaped by the community, and so on.

While more inclusive levels of context may constrain lower levels, they do not cause them in a unilinear fashion. For the event "a lesson" to occur, the participants must actively engage in a consensual process of "lesson making." Teachers often vary considerably in the way they interpret the conventions of the school, and school communities participate in the selection of the board of education. Without forgetting for a moment that the power relations among participants "at different levels of context" are often unequal, it is no less important when using the nested-contexts approach to take into account the fact that context creation is an actively achieved, two-sided process. (See Duranti and Goodwin, 1992; Lave, 1993; and McDermott, 1993).

for trenchant criticisms of context treated as the container of objects and behaviors.)

Context as That Which Weaves Together

In seeking uses of the term *context* which avoid the pitfalls of context as that which surrounds, I have found it useful to return to the Latin root of the term, *contexere*, which means "to weave together." A similar sense is given by the *Oxford English Dictionary*, which refers to context as "the connected whole that gives coherence to its parts."

The frequency with which metaphors of weaving, threads, ropes, and the like appear in conjunction with contextual approaches to human thinking is quite striking. For example, the microsociologist Ray Birdwhistell described context this way:

I'll tell you what I like to think about: sometimes I like to think of a rope. The fibers that make up the rope are discontinuous; when you twist them together, you don't make them continuous, you make the thread continuous . . . even though it may look in a thread as though each of those particles are going all through it, that isn't the case. That's essentially the descriptive model . . . Obviously, I am not talking about the environment. I am not talking about inside and outside. I am talking about the conditions of the system. (quoted in McDermott, 1980, pp. 14-15)

When context is thought of in this way, it cannot be reduced to that which surrounds. It is, rather, a qualitative relation between a minimum of two analytical entities (threads), which are two moments in a single process. The boundaries between "task and its context" are not clear-cut and static but ambiguous and dynamic. As a general rule, that which is taken as object and that which is taken as that-which-surrounds-the-object are constituted by the very act of naming them.⁸

In light of my goal of studying artifacts and situations/contexts in terms of people's concrete activities, I was gratified to discover that there is an intimate connection between context, interpreted as a process of weaving together, and the notion of an event. This connection is provided by Stephen Pepper in his analysis of contextual

ism as a world view (what might currently be called a scientific paradigm).

Pepper (1942) suggests that the root metaphor underlying a contextualist world view is the "historic event." By this, he says,

the contextualist does not mean primarily a past event, one that is, so to speak, dead and has to be exhumed. He means the event alive in its present. What we ordinarily mean by history, he says, is an attempt to *re-present* events, to make them in some way alive again . . . We may call [the event] an "act," if we like, and if we take care of our use of the term. But it is not an act conceived as alone or cut off that we mean; it is an act in and with its setting, an act in its context. (p. 232)

An "act in its context" understood in terms of the weaving metaphor requires a *relational* interpretation of mind; objects and contexts arise together as part of a single bio-social-cultural process of development.

Bateson (1972), in a way very reminiscent of Pepper's writing, discusses mind as constituted through human activity involving cycles of transformations between "inside" and "outside." "Obviously," he writes, "there are lots of message pathways outside the skin, and these and the messages which they carry must be included as a part of the mental system *whenever they are relevant*" (p. 458, emphasis added). He then proposes a thought experiment: "Suppose I am a blind man, and I use a stick. I go tap, tap, tap. Where do I start? Is my mental system bounded at the handle of the stick? Is it bounded by my skin? Does it start halfway up the stick? Does it start at the tip of the stick?" (p. 459).

Bateson argues that such questions are nonsensical unless one is committed to including in one's analysis not only the man and his stick but his purposes and the environment in which he finds himself. When the man sits down to eat his lunch, "the context changes," and with it the stick's relation to mind is changed. Now it is forks and knives that become relevant. In short, because what we call mind works through artifacts, it cannot be unconditionally bounded by the head or even by the body, but must be seen as distributed in the artifacts which are *woven together* and which weave together individ-

ual human actions in concert with and as a part of the permeable, changing, events of life.

The relevant order of context will depend crucially upon the tools through which one interacts with the world, and these in turn depend upon one's goals and other constraints on action. Similarly, relevant interpretation of context for the analyst of behavior will depend upon the goals of the analysis. According to this view of context, the combination of goals, tools, and setting (including other people and what Lave, 1988, terms "arena") constitutes simultaneously the context of behavior and ways in which cognition can be said to be related to that context.⁹

Activity and Practice

While *context* and *situation* continue to appear in discussions of culture in mind, in recent years there has been increasing use of the terms *activity* and *practice* in their place. In part this shift has resulted from dissatisfaction with the concept of context in the reduced form of an environment or cause (Lave, 1988; Zuckerman, 1993). In part it has been brought about by the infusion of ideas from social and cultural theory which trace their roots back to Karl Marx and to post-Marxist debates about human agency and social determination.

In contemporary discussions, the terms *activity* and *practice* are sometimes taken as synonyms and sometimes treated as if they index different kinds of social structuration. This terminological confusion can be traced back to the formulations of Marx. In the first of his *Theses on Feuerbach* (1845), Marx wrote: "The chief defect of all materialism . . . is that the thing, reality, sensuousness, is conceived only in the form of the *object* or of *contemplation*, but not as *sensuous human activity, practice*, not subjectively."

This passage leads us to understand that Marx meant to rearrange the ontological separation among humans and artifacts as a way of superseding the dichotomy between the material and the ideal. His formulation of the interpenetration of activity and practice and materiality/ideality is based on the assumption that "The object or product produced is *not* something 'merely' external to and indifferent to the nature of the producer. It is his activity in an objectified or congealed form" (Bernstein, 1971, p. 44). It is this duality that gives

activity "the power to endow the material world with a new class of properties that, though they owe their origin to us, acquire an enduring presence in objective reality, coming to exist independently of human individuals" (Bakhurst, 1991, pp. 179-180).

Activity/practice emerges in this account as medium, outcome, and precondition for human thinking. It is in the territory of activity/practice that artifacts are created and used.

Following the Thread of Practice

A great many contemporary scholars in anthropology, sociology, and cultural studies currently invoke the notion of practice in their discussions of human thought. Central to all of these accounts, despite differences among them, is the attempt to achieve something akin to a combination of the notion of context as that-which-surrounds and the weaving conception of context.

Charles Taylor (1987) suggests that humans' baseline, taken-for-granted social reality is composed of social practices, which provide the intersubjective medium of mind. The ensemble of a society's practices provides the foundation for community and discourse. Meanings and norms (secondary artifacts in my scheme of things) are "not just in the minds of the actors but are out there in the practices themselves; practices which cannot be conceived as a set of individual actions, but which are essentially modes of social relations" (p. 53).

Anthony Giddens (1979) adopts the unit of practices in order to create a theory of socialization which assumes neither that the subject is determined by the environment ("nurture") nor by its "inherent characteristics" ("nature"). The first view, he writes, "reduces subjectivity to the determined outcome of social forces, while the second assumes that the subjective is not open to any kind of social analysis" (p. 120).

According to Giddens, practices (rather than roles, for example) are the basic constituents of the social system. They are also a unit of analysis that overcomes such dualisms as "individual versus social," which re-create one-sided accounts of development. The resolution of such dualisms, he claims (following Marx) is to be found at the level of practices: "In place of each of these dualisms, as a single conceptual move, the theory of structuration substitutes the central

notion of *duality of structure*. By the duality of structure, I mean the essential recursiveness of social life, as constituted in social practices: structure is both medium and outcome of the reproduction of practices, and 'exists' in the generating moments of this constitution" (1979, p. 5).

The French anthropologist-sociologist Pierre Bourdieu (1977) also seeks to block simplified notions of context as cause and to overcome dualistic theories of cognition and social life. Bourdieu warns against theories that "treat practice as a mechanical reaction, directly determined by the antecedent conditions" (p. 73). At the same time, he warns against "bestowing free will and agency on practices."

Central to Bourdieu's strategy for balancing these two unacceptable extremes is the notion of *habitus*, "a system of lasting, transposable dispositions which, integrating past experiences, functions at every moment as a *matrix of perceptions, appreciations, and actions* and makes possible the achievement of infinitely diversified tasks" (pp. 82-83). In Bourdieu's approach, *habitus* is the product of the material conditions of existence and the set of principles for generating and structuring practices. *Habitus*, as its name implies, is assumed to take shape as an implicit aspect of habitual life experiences. It constitutes the (usually) unexamined, background set of assumptions about the world. It is, Bourdieu remarks, "history made nature" (p. 78). "The habitus is the universalizing mediation which causes an individual agent's practices, without either explicit reason or signifying intent, to be none the less 'sensible' and 'reasonable'" (p. 79).

Following the Thread of Activity

Activity theory is anything but a monolithic enterprise. Within Russia there are at least two schools of thought about how best to formulate Marx's ideas in psychological terms (Brushlinskii, 1968; Zinchenko, 1995). There is a long German tradition of research on activity theory (Raethel, 1994), a Scandinavian/Nordic tradition (Hydén, 1984; Engeström, 1993), and now, perhaps, an American tradition (Goodwin, 1994; Nardi, 1994; Scribner, 1984). A good statement of general tenets of this approach is provided by Engeström, who writes that an activity system

integrates the subject, the object, and the instruments (material tools as well as signs and symbols) into a unified whole.

An activity system incorporates both the object-oriented productive aspect and the person-oriented communicative aspect of human conduct. Production and communication are inseparable (Rossi-Landi, 1983). Actually a human activity system always contains the subsystems of production, distribution, exchange, and consumption. (p. 67)

The attractiveness of this formulation in light of the discussion of artifact mediation at the beginning of this chapter should be apparent: Engeström's formulation promises a way to incorporate ideas about the duality of artifacts but does not privilege production over social cohesion.

Engeström represents his conception of activity in a manner that both includes and enlarges upon the early cultural-historical psychologists' notions of mediation as individual action. Once again we see a triangle, but now it is a set of interconnected triangles (Figure 5.3). At the top of the figure is the basic subject-mediator-object relationship depicted in Figure 5.1. This is the level of mediated action through which the subject transforms the object in the process of acting upon it. But action exists "as such" only in relation to the components at the bottom of the triangle. The *community* refers to

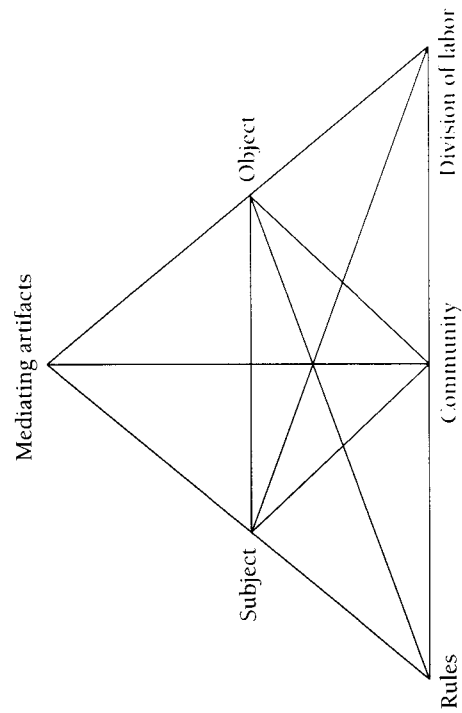


Figure 5.3. The basic mediational triangle expanded (after Engeström, 1987) to include other people (community), social rules (rules), and the division of labor between the subject and others.

those who share the same general object; the *rules* refer to explicit norms and conventions that constrain actions within the activity system; the *division of labor* refers to the division of object-oriented actions among members of the community. The various components of an activity system do not exist in isolation from one another; rather, they are constantly being constructed, renewed, and transformed as outcome and cause of human life.

In activity theory, as summarized in Figure 5.3, contexts are activity systems. The subsystem associated with the subject-mediator-object relationships exists as such only in relationship to the other elements of the system. This is a thoroughly relational view of context.

Jean Lave (1993) provides a succinct summary of several themes uniting scholars interested in activity and practice theory:

1. An emphasis on the dialectical character of the fundamental relations constituting human experience (in Lave's terms, human agency is "partially determined, partially determining").
2. A focus on experience in the world that rejects the structure and dynamics of psychological test procedures as a universally appropriate template.
3. A shift in the boundaries of cognition and the environment such that, in Lave's phrasing, cognition "is stretched across mind, body, activity and setting" (a perspective sometimes referred to as "distributed cognition": Hutchins, 1995; Norman, 1991; Salomon, 1993).

Context/Practice/Activity and Ecological World Views

There are important affinities between the various views about a supra-individual unit of analysis associated with the notions of context, practice, activity, and so on, and the views of those who identify themselves as ecological psychologists (Altman and Rogoff, 1987). These affinities grow out of a common starting point, the ecology of everyday human activities, and are evident in the proclivity of researchers of both views to conduct their research in naturally occurring social settings rather than experimental laboratories.

These affinities can also be seen in the appearance of the metaphor of weaving in the writings of both groups. The following example is

relative to individuals and the potential of individuals to change the environments that condition their lives. On the one hand, aspects of the "macro" level serve as constraints/resources in constituting context (and hence local activity tends to reproduce the relations in society). On the other hand, each situation is idiosyncratic in the mix of resources/constraints brought to bear and hence there is no strict determination of the consequences of action that result.¹⁰

Culture as Helping Things Grow

The discussion thus far has characterized culture as a system of artifacts and mind as the process of mediating behavior through artifacts in relation to a supra-individual "envelope" with respect to which object/environment, text/context are defined. This approach allows me to make use of the notion of culture as medium and of context as both that which surrounds and that which weaves together. It also provides me with a basic unit of analysis that has natural linkages to the macro pole of society and its institutions and the micro level of individual human thoughts and actions.

The final set of comments I invoke here for thinking about culture brings many of the conceptual tools discussed thus far together in a manner that I see as especially useful for developmentally oriented research on culture and cognition. "Culture," wrote Raymond Williams, "in all of its early uses, was a noun of process: the tending of something, basically crops or animals" (1973, p. 87). From earliest times, the notion of culture has included a general theory for how to promote development: create an artificial environment where young organisms could be provided with optimal conditions for growth. Such tending required tools, perfected over generations and designed for the special tasks to which they were put. So close were the concepts of growing things and tools that the word for culture once referred to ploughshares.

In common parlance, we speak of an artificial environment for growing crops as a "garden," a conception encoded in the idea of a kindergarten (children's garden) where children are protected from the harsher aspects of their environment. A garden constitutes the linkages between the "microworld" of the individual plant and the "macroworld" of the external environment. A garden, in this sense,

taken from the work of the pioneer ecological-developmental psychologists Roger Barker and Herbert Wright, who were attempting to characterize the relation of ecological setting to psychological processes. On the basis of their detailed records of children's activities, Barker and Wright were impressed that children's behavior appeared to be very strongly controlled by the settings they inhabited. They also noted the wide range of different behavioral settings children participated in daily:

The number of things a child did in a day, according to our criteria of episodes, varied approximately from 500 to 1,300 . . . Most of the episodes did not occur in isolation. Behavior was more often like the interwoven strands of a cord than like a row of blocks in that the molar units often overlapped . . . The behavior continuum was cord-like, too, in the sense that overlapping episodes often did not terminate at the same time but formed an interwoven merging continuum. (1951, p. 464)

This metaphorical invocation of threads and cords echoes Birdwhistell's description of context in interpersonal interaction, although the contents of their descriptions are markedly different. What makes such metaphorical correspondences possible across levels of behavioral analysis is their grounding in a unit of analysis corresponding to events and activities.

Although their vocabularies are somewhat different, I believe the same points of agreement can be attributed to Dewey in his discussions of situation and to those context theorists, such as Bateson, who held firmly to the conviction that it is essential to see an "action as part of the ecological subsystem called context and not as the product or effect of what remains of the context after the piece which we want to explain has been cut out from it" (1972, p. 338).

William Wentworth (1980) brings several threads of this discussion together. Context, he writes, is the "unifying link between the analytic categories of macrosociological and microsociological events": "The context is the world as realized through interaction and the most immediate frame of reference for mutually engaged actors. *The context may be thought of as a situation and time bounded arena for human activity. It is a unit of culture*" (p. 92).

This notion of context recognizes the power of social institutions

brings together the notion of culture and that of context, providing a concrete model for thinking about culture and human development.

In addition, the garden metaphor naturally links us to ecological thinking by reminding us that we must be concerned not only with the system of interactions within a particular setting, but also with the way the internal system is related to the "next higher level of context." While it is possible, given sufficient knowledge and resources, to induce a radish to grow in Antarctica or outer space, it is not nearly so easy to sustain the conditions that enable that growth. For the work of developmental psychologists to be widely applicable, they must be concerned not only with a theory of how to create the conditions for development *in vitro* (in artificially constructed environments such as a kindergarten) but with a theory of how to create conditions for development which will survive when the child moves out of the children's garden into the world at large *in vivo*.

© We can summarize the view of culture given here in the following terms:

1. Artifacts are the fundamental constituents of culture.
2. Artifacts are simultaneously ideal and material. They coordinate human beings with the world and one another in a way that combines the properties of tools and symbols.
3. Artifacts do not exist in isolation as elements of culture. Rather, they can be conceived of in terms of a heterarchy of levels that include cultural models and specially constructed "alternative worlds."
4. There are close affinities between the conception of artifacts developed here and the notions of cultural models, scripts, and the like. Exploitation of these affinities requires conceiving of schemas and scripts as having a double reality in the process of mediation.
5. Artifacts and systems of artifacts exist as such only in relation to "something else" variously referred to as a situation, context, activity, and so on.
6. Mediated activity has multidirectional consequences; it simultaneously modifies the subject in relation to others and the

subject/other nexus in relation to the situation as a whole, as well as the medium in which self and other interact.

7. Cultural mediation implies a mode of developmental change in which the activities of prior generations are cumulated in the present as the specifically human part of the environment. This form of development, in turn, implies the special importance of the social world in human development, since only other human beings can create the special conditions needed for that development to occur.

A number of methodological prescriptions follow from this shift in culture's status *vis-à-vis* mind and behavior. Central is the need to study culturally mediated behavior developmentally to reveal the dynamic interactions uniting different parts of the overall life system. Equally important is the need to conduct research at several developmental/historical (genetic) levels in order to analyze the ways in which they intertwine and fuse in human life over time.

This catalog of concepts could easily be extended. But it is time now to apply and elaborate the properties of culture discussed here to longstanding controversies in psychological theory and to empirical research with children. I will come back to draw upon the concepts introduced here and will introduce additional concepts along the way as I attempt to account for the empirical phenomena of interest to cultural psychology.