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A CULTURAL THEORY OF DEVELOPMENT: WHAT DOES IT IMPLY ABOUT THE APPLICATION OF SCIENTIFIC RESEARCH?

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Abstract

Following the tenets of a theory of development which accords culture a fundamental constituting role in creating human development, this paper proposes a critical approach to the application of research by developmental psychologists. After sketching the sociohistorical context within which developmental research is currently being conducted, a concept of culture derived from agricultural metaphors that run deep in the English language is introduced. These general considerations are followed by an example of basic/applied research in the author's own community.*

Introduction

"I do not reflect on the purely abstract concepts of literacy, those divorced from the practice that informs them. Rather, I think about literacy in terms of the practice in which I am involved." (Freire & Macedo, 1987, p. 63).

Over the past quarter of a century, my colleagues and I have been engaged in research on the role of culture in the process of human development. This effort has taken us to the jungles of Liberia, small villages in remote areas of the Yucatan peninsula, as well as urban ghettos and middle class suburbs in the United States. Whatever the locale, our work from the beginning has had a dual character: on the one hand, we sought to overcome the generally acultural nature of theories of development dominant in most of academic psychology; on the other hand, we were concerned that our research would help those among whom we worked to solve pressing problems associated with the schooling of their children.

In this paper I want to place this research program in its broader intellectual and historical context in order to make clear certain contradictions that face academic psychologists when they seek to move beyond the protected walls of their universities

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*These remarks were made in a presentation to a meeting of developmental psychologists meeting in Brazil.

and laboratories to intervene in the lives of children. One set of contradictions arises when someone like myself, from an industrially advanced country seeks to "do good" in a Third World country. But the complexities of moving from theory/research to practice are not restricted to such intercultural, international, situations. They are just as real when working in one's own country.

My understanding of the concept of "cultural psychology" renders it close kin to the views of Paolo Freire, whose statement on the relation between theory and practice is the epigram for this paper. In particular, I believe that a cultural approach to the study of child development requires that one's research and theorizing be organized to blend theory and practice. The resulting methodology, which I will describe presently, ineluctably forces one out of the laboratory and into the many contexts in which the process of development takes place. In so doing, it requires one to adopt a critical stance toward existing theories and practices in the attempt to modify them.

Freire's work leads one to another idea that is central to cultural psychology: "text" and "context" are not independent entities, however much reification may make them appear so. Each constitutes the other and hence it is necessary to examine the tangled history of their interdependence in order to determine how they are interwoven in the present.

In building this "text" about a cultural psychological approach to applying psychological theories of development, I will adopt a rhetorical strategy based on the principles of cultural psychology itself: starting with an historical analysis of the problem (text) and its context to get some idea of the way in which current circumstances represent transformations of the past: then use this information to help you think productively about the future.

1948–1984: Optimism and Despair

The immediate post WWII situation is an appropriate place to begin this discussion because two very different visions of humanity's predicament and prospects existed side by side in the minds of many people. First, there was the optimistic perspective embodied in the charter of the United Nations that through massive programs of modern education and child welfare it would be possible to transform the "underdeveloped" peoples of the world and to bring about a condition of prosperous self determination for all. The applied tasks of the developmental psychologist were clear in that historical context: to promote the psychological and physical development of children as the surest way to their economic and political development.

Side by side with this optimistic perspective, in which the world's societies were assumed to form a continuum from underdeveloped→ developing→ developed, was another more sinister vision, as depicted in George Orwell's chilling gedanken experiment, *1984*. You will recall that Orwell also conceived of a world divided into three categories: Oceania, Eurasia, and Eastasia. These three groupings were locked in a state of perpetual war against each other in constantly shifting alliance of two against one. It was a world in which Government operated by the control of information, including the meanings of words, in order to make real Orwell's nightmare of complete control, using terror where erasure of the past and perpetual propaganda in the present did not suffice.

Both Orwell's groupings of superpowers and the correspondence to the map of the "real" 1984 are fictions in their own way. But their joint similarity to the world in 1984, when the U.S. was labelling the USSR an evil empire and cold war tensions were high, are sobering nonetheless. In fact, a good case could be made for the claim that by 1984, Orwell's prognosis had been proven more accurate than that of the founders of the United Nations.

I will not press the point generally, but in the domain of direct concern to us, the application of knowledge gained by developmental psychologists to solve world problems, basic concepts of development had undergone a major change, with a much less optimistic set of conclusions about practice. In 1948 it seemed easy to link the concept of development to the idea of progress, generating strategies which called for the application of modern (read "developed") economic strategies to newly independent, generally preindustrialized, societies. By 1984 that paradigm of development was in disrepute.

The waning of the development-as-progress paradigm has been accompanied by a chorus of voices sounding the alarm, that modern industrialized economic practices are destroying the fabric of the earth as a biosphere, that has been becoming louder and louder, and is beginning to seep into the consciousness of everyday citizens in the industrially advanced countries. By 1984 one heard suggestions that not only might there be "limits to growth", but an unthinkable diminution in material conditions began to enter the night thoughts of some.

The Present Situation

Some of the trends evident in 1984 have been strengthened, while new ones have emerged to capture our attention. Concerns about the ecology, in particular, have grown markedly more evident. At the same time, we know that the Unity of Oceania and Eurasia is undergoing serious realignment. But two facts have not changed as a result of *perestroika*:

(1) As a result of technological "progress" nations in one part of the world can put an end to the existence of humanity as we know it. The nations with control of these powers at present are (not without internal conflict on the two sides) the NATO allies and the members of the Warsaw Pact. These same countries and their allies are consuming world resources at a rate which threatens the existence of human life on earth even without nuclear war..

(2) A majority of the world's population fall into the third category, the "Third World". These people face staggering difficulties in attaining the "quality of life" of the advanced industrial countries, and those envied countries are themselves experiencing high levels of internal conflict — high enough to be the focus of attention along with the height of the garbage heaps around people's homes.

A new realization, which world leaders are only beginning to come to grips with, is that it will be impossible for Third World countries to "catch up" by intensive industrialization in the 1948 or 1984 mold. Not only must the decimation of Brazilian and Southeast Asian rain forests to provide wooden houses in Japan, Europe, and North America stop, but some way must be found to prevent this same decimation in the interests of local

consumption, even as the legitimate desires of people for better material conditions need to be met.

I am fully aware that responsibility for solutions to humanity's predicament cannot be laid at the doorstep of developmental psychologists. However, an approach to the study of human development which commits itself to the application of its knowledge as a constitutive part of its practice cannot ignore the real circumstances within which we find ourselves. How are we to act in accordance with our scientific principles and avoid being a part of the problem rather than the solution?

I do not pretend that my notions of cultural psychology and development contain a magical solution to these problems, but they do provide a useful theoretical framework for thinking about them and for guiding practice that may hold some promise both theoretically and practically.

Garden Variety Cultural Psychology

The conception of culture which my colleagues and I have been advocating can be approached from several directions (see Cole, 1990, for a more extended discussion). For purposes of examining the relation between the theory and practice of a cultural psychology of development, it is particularly helpful to trace the roots of the modern concept of culture into Latin and early English. As Raymond Williams has noted, the core features which coalesce in modern conceptions of culture refer to the process of helping things to grow . . . which is not a bad characterization of what society expects developmental psychologists to do when they set out to apply their knowledge. "Culture," Williams wrote, "in all of its early uses was a noun of process: the tending of, something, basically crops or animals." (Williams, 1973, p. 87)

Sometime around the 16th century the term, culture, began to refer to the tending of human children, in addition to crops and animals. In the 18th century, culture when applied to human affairs began to differentiate quantitatively: some people came to be considered more "cultured" or "cultivated" than others. It was not until the 19th century that the idea of culture as a social group's medium of adaptation to (and transformation of) its ecological circumstances forced attention to the variety of cultural forms and brought into question the linear scaling of cultures into more and less developed kinds. At present these two latter conceptions live side by side in science and society.

From the beginning, the core idea of culture as a process of helping things to grow was combined with a general theory for how to promote growth: create an artificial environment where young organisms could be provided optimal conditions for growth. Such tending required tools, of course, and is somehow provocative to learn that one of the early meanings of *culture* was "plowshare".

Although it would be foolish to overinterpret the metaphorical parallels between the theory and practice of growing next generations of crops and next generation of children, the exercise, I will argue, has particular heuristic value for thinking about applying developmental psychology. Broadly speaking, gardeners must attend simultaneously to two classes of concerns: what transpires inside the garden and what transpires around it. These issues often seem to be addressable independently of each other, but in reality are as interdependent as the text and context of development. *Inside*

the garden, for every kind of plant, there is the quality of the soil to consider, the best way to till the soil, the right kinds of nutrients to use, the right amount of moisture, as well as the best time to plant and nurture the seeds, and the need to protect the growing plants against predators, disease, etc. Each of these tasks has its own material needs, associated tools, and knowledge. The theory and practice of development at this level will be focussed on finding exactly the right combination of factors to promote life within the garden walls.

Gardens do not, obviously, exist independently of the larger ecological system within which they are embedded. While it is possible to raise any plant anywhere in the world, given the opportunity first to arrange the appropriate set of conditions, it is not always possible to create the right conditions, even for a short while. And if what one is interested in is more than a short run demonstration of the possibility of creating a development-promoting system, but rather the creation of conditions which maintain the need properties of the artificial environment without much additional labor, then it is as important to attend to the system in which the garden is embedded as the properties of the garden itself. A garden cannot exist by itself, either.

Some Familiar Examples of Garden-Variety Thinking

As a first step toward concretizing the metaphor of culture as an artificial system for growing things, let me remind you of some well known examples of applied research that are readily interpretable within these terms.

A somewhat unusual example, because in this case what researchers must do is to create an artificial environment that is as good as the biological system it replaces, is research attempting to create effective postnatal environments for premature infants. My reading of this literature is that at great expense it is possible to create systems of interaction between child and environment that are relatively effective in compensating for immature lungs and the loss of an automatic feeding/waste removal system, and to some extent for the sensory-motor affordances of the human uterus. Yet prematurity, especially pronounced prematurity, remains a risk factor in children's later development even when the most advanced systems are used.

When we turn to the issue of how to make routinely available the specialized prenatal environments for the nurturing of children in need, the picture is far gloomier. The evidence so far is that such specialized facilities place a great financial strain on the institutions that construct them, surviving primarily in the specialized socioecological niches of the wealthier segments of wealthy societies.

Moving a bit up the ontogenetic scale we encounter a domain in which the metaphor of culture-as-garden has entered directly into several European languages, the special systems of interaction referred to as kindergartens (children's gardens). Although the originators of such institutions were more likely to be adopting a botanical metaphor for the process of child development than to be reinventing archaic intuitions about culture, what they in fact did was to create protected environments where children could be nurtured and cultivated so that somewhat later they could be "transplanted" to the rougher terrains of middle childhood.

A careful study of the growth and diversity of kindergartens during the past century

would, I believe, reveal many suggestive parallels with the problems of designing, constructing, and maintaining artificial systems that I suggested earlier. A great deal of research has been conducted on optimal properties of interaction for 4–5 year old children in kindergartens in industrialized countries and extensions of this research to "Third World" countries exist as well (Lazar, 1982; Tobin, Wu, & Davidson, 1988).

Because my space is limited and I want to concentrate my remarks elsewhere, I will make only two comments about this line of work. First, specialists on early education and socialization ordinarily take it for granted that the larger environment that they are preparing children to enter is the modern school. This assumption, while undebatable in a general way, is problematic enough in application to give a thoughtful applied developmental psychologist pause. For example, when conducting research among preschool children in a large urban slum in the United States, I learned from several preschool teachers that while the children entered regular schools with a "head start" as the planners of the program hoped, this head start got them into trouble in two ways. First, since they had already learned a good deal of what their peers were being drilled on by the teacher, they got bored and ceased to pay attention. Second, since they were used to learning in an environment infused with play and affection (both characteristics of the preschool) they reacted especially negatively to the conditions of the school. These two early "achievements" combined to get them into a lot of trouble, which was specifically acknowledged by local first grade teachers. By grade two or three they "got over" their headstart.

So here is a case where, by the criterion of wide diffusion, the innovations arising out of the applied work of developmental psychologists must be considered a success. However, when we start to look at the matter more closely, it forces us to reflect once again on the relation between our specially constructed context and its context — and to question our earlier optimism.

I should add here that when we start to extend this same inquiry to third world countries, an even more critical stance is immediately called for. I have often heard applied developmental psychologists working in desperately poor countries advocating a universal system of kindergartens as a solution to a variety of ills adhering to the domains of schooling and work. While I do not question for a moment the good intentions of those who make such suggestions, I do question the adequacy of their theories to deal with the practical realities they are addressing.

To complete this section, I will end with an example from my earliest work in developmental psychology in the course of which I investigated barriers to successful education among the children of rural Liberian agriculturalists (Gay & Cole, 1967). For the most part, this work was focused on the highly specialized artificial systems called "psychological tests" and the ordinary lessons that occurred in these children's classrooms. This work is sometimes remembered for contributing to the idea that while children from such societies may experience difficulty learning in schools, they by no means had general difficulties learning. In conjunction with later research it contributed to the current discussion about the importance of cultural context in the development and display of mental abilities and various applied suggestions for the modification of formal schooling practices.

Less often noticed (owing in part to the fact that we were more acutely concerned with scholarly theories than indigenous realities, so we gave less emphasis to the matter)

was the fact that it was by no means clear that universal schooling was less than a developmental disaster for the majority of children who participated, their children, and their parents. How could this be, one asks?

Research by economists has shown that unless children attended at least twelve years of schooling (which very few Liberian children did then, or do now) their income was reduced by school attendance when measured in early adulthood (Lave & Mueller, 1975). However, a relatively few years of schooling was sufficient to alienate children from their communities. Should they complete 6 years of schooling, they were freed of local authority and the obligation to participate in community work. Yet with 6 years of schooling, they were insufficiently skilled to find employment other than the farming which their exalted status made beneath their dignity. Liberia, which was selfsufficient in rice production before the introduction of schooling, imports this staple of the diet today.

Sometimes the "benefit" of schooling seems directly harmful as in cases reported to me by local doctors where infant mortality rates were particularly high in towns boasting elementary schools. It turned out that one of the first changes to be wrought by schooling was a special desire to "act modern". This modern behavior was selective. It did not extend to the use of birth control devices nor to sexual abstinence. But it did extend to using infant formula instead of breast feeding. This meant endangering their children in one of two ways. First, even in cases where they could afford formula, they used the local water supply which was dangerously impure. Second, since the young mothers involved were only marginally related to the cash economy, their desire to "act modern" sometimes led them to feed their babies with the water left over after washing rice, which is chalky in appearance.

An Interim Summary

Contemporary applied developmental psychology confronts conditions of human development very different from those of a generation ago. Gone is the postwar optimism embodied in the ideology of development as enlightenment/progress. Instead of the gap between rich and poor narrowing, it has widened, creating a crisis for development on a massive scale. At the same time, wealthy nations are confronting apparently unavoidable limits on their growth and possible reduction in material welfare. While there is optimism to be derived from a crumbling of postwar confrontations among superpowers that threaten the annihilation of life, there is no evidence so far that a lessening of hostilities between "Oceania" and "Eurasia" will improve the prospect for human development among third world countries. If Orwell's glum prognosis is correct, it will simply mean a temporary realignment of forces.

Assuming that this description of our historical context is even approximately accurate, it must condition one's ideas about the tasks of applied developmental psychology. In response to this new situation I have offered a way of thinking, that I refer to vaguely as cultural psychology, that builds on the antique notion of culture as a process of helping things to grow, combining it with modern ideas of activity, context, and tool mediation. In particular, I have emphasized that in theory no less than in practice, the microenvironments of development (contexts according to some uses of that concept)

that are the usual focus of psychological analysis are shaped in interaction with their contexts. Consequently, to put matters into the metaphor of biology, psychologists must begin to conduct research not only under "*in vitro*" conditions for the study of development (e.g., the creation of "cultural petri dishes") but also on creating forms of activity in those artificial contexts that can be sustained and perhaps diffused (if they are valued by the society in which they are produced or introduced) so that our artificial contexts can be "naturalized" diffusing its developmental benefits "*in vivo*".

To simplify my suggestion to its minimum components, I am saying that at least one useful way for the developmental psychologist to blend theory and practice is to create systems of interaction that simultaneously: (1) reveal processes of development, (2) serve as potential model systems of activity of potential use to the community, and (3) make it possible to introduce the model system into a community to assess whether it can retain its crucial properties as it is transformed in interaction with its broader environment over time.

For a great many reasons, this is a research program that one can carry out most effectively (and perhaps only, in a legitimate way) in one's own community. (At first I wanted to write "only in one's society" but given the class and cultural variations within large scale societies identified with nation states, community appears a more appropriate word.) So, for example, the research my colleagues and I conducted in Liberia addressed to the problem of improving learning and development in rural schools would not fit the paradigm of cultural psychology that I am proposing. While that research might be considered effective in criticizing then-dominant theories of culture and development, or schooling, we did not attempt either to create alternative model systems or to assess the viability of alternatives in the local socioecology. Nor could we in any way be said to be a part of the local community, save the community of secular and religious missionaries, and the people who paid for their presence in Liberia in the first place. (In addition, as my earlier comments about the impact of schools in rural Liberia indicated, I had at the time, and have now, the gravest doubts about the potential of formal education as a developmentally propitious form of activity.)

An Example From the Work of LCHC

In the remainder of this paper I will summarize a major line of work at LCHC that eventually produced an example of the kind of approach to applied developmental psychology I am advocating. I will begin by describing the issue to which our current activities are directed, and the context which gave rise to our particular strategy.

The Problem in its Context

This project addresses a problem of general concern in my community, Solana Beach, California, a suburban town about 20 miles northwest of San Diego, a major North American population center: adults in Solana Beach are unhappy with the quality of the education that their children are receiving. As a generally well educated group they have accepted the assumptions underlying the concerns of politicians and educationalists

who speak of "a nation at risk". They are the adults in direct or indirect contact with recent advances in computer and other information technologies and believe that their children need to know a good deal about them in order to find jobs later in life, even if the parents do not understand such matters well themselves.

In addition, adults in Solana Beach worry about the quality of children's activities after school while they themselves are at work, or busy themselves in the community. They are concerned about drug use and sexual activity. They do not generally like their children being at home alone unsupervized. They make various provisions as a community for supervizing children after school.

The sports program for children from 5 to 15 years of age is impressive by any standards. A very high percentage of our children attend soccer or baseball leagues all year round. But that occupies only 1–2 days of the week. And while it is certainly considered healthy and a good social experience to engage in team sports, it does not address parental concerns for their children's intellectual development.

A variety of institutions provide opportunities to engage in enrichment activities such as arts and crafts. The Parks and Recreation Commission sponsors such activities often using school facilities after school closes for the day; there is a City Library that welcomes children and provides some special activities for them, there is a city-run Day Care Center where young children can be bussed after school for supervized arts and crafts or play activities; there is a Boys and Girls Club, one of three linked local branches of a national organization that obtains its funds for after school supervision of children from the local community. There children can swim, play ball, shoot pool, make arts and crafts, visit the library, or just hang around.

I find these arrangements pretty impressive and I support them by participating as a community member in various activities. But it is clear that when all the attention is added up, academics are by and large confined to the school and evening homework sessions prescribed by the schools. In short, while the politicians are telling parents that the nation is at risk, the educators are telling them that the kids need more time spent being instructed if they are to perform better, and nowhere do we see school days or school years being elongated as a solution to the problem. At least we do not see communities organizing to give their children more time on academic pursuits, not even my community which recognizes there is a problem.

So, what to do? In particular, if I were to set out, as a professional (not as a soccer coach or member of The Friends of the Library), to address this problem, how would I go about it using the principles of cultural psychology? One way that I might go about it would be to create an artificial environment, a new kind of activity system, to be instantiated in already existing after school institutions, that would accomplish the community's goal of increasing the amount of time their children spend engaged in educational activity, including activity centered around new information technologies, and improve their academic performance.

Following the logic laid out earlier, the initial stages of this work would be devoted to creation of the activity systems that, when they were implemented, would demonstrate promise of being a good medium for academic development. In these early stages I would be treating the activity systems I created as a sort of "petri dish" but instead of growing a *tissue* culture I would seek to create an *educational* culture. This stage would be one of theorizing and experimenting. Part of my experimenting would be "inward oriented"

into the system I was seeking to create. Part of my experimenting would be to search for environments, in different institutional settings, where it might be possible to set up a synergism between the new activity system I introduced and the overall prior structure of the activity in that institution. Then, when I thought that I had found a convergence over time, I would watch the history of that convergence to see if, in a year or two, the system maintained its integrity and became a routine part of the host institution, and how the institution changed to accommodate the new activity. I would look to see if my "culturogene", nurtured in my artificially supported ("*in vivo*") conditions, began to selfishly appropriate additional resources to it without my intervention . . . accept of course, as a member of the community.

That is what my colleagues and I have been doing.

Early Stages of the Work Summarized

To be as brief as possible, I can reduce the major steps in this line of work and the major lessons we learned from it in the following chronological list:

(1) From 1976–1979 we studied the problem of ecological validity. How do you know that the system of interactions you are studying has any equivalents outside of itself? In particular, how do psychological processes manifested in standardized tests and school lessons relate to each other and to processes manifested in other settings where teaching and learning are not the motive of the activity. One important conclusion: both psychological tests and classroom interactions are very distinctive though historically interrelated kinds of activity. Analogous activity structures and associated psychological processes occur in after school arts and crafts clubs only very seldom, and then in a qualitatively different, socially distributed form (Cole, Hood, & McDermott, 1978–79).

(2) From 1979–1984 we studied the problem of interactions between tasks and settings (texts and context) through an exploration of the relationship between a range of cognitive–psychological research practices and the everyday practices of accomplished teachers. Here we were able to point to a variety of ways in which the constraints on classroom teaching differ from those on psychologists engaged in analysis of cognitive development. Among the many points of relevance to our current project was the difference in forms of authority and responsibility of the teachers and researchers. Crucial for our later work was the realization that when things went badly in an interaction between a psychologist and a child, the children were free to go back to their classrooms; the children, whatever the social pressures, could not by law be compelled to participate. But they are required to attend class and their teachers must keep them under conditions that make learning possible, like it or not. This, along with many allied factors, meant that even when we introduced our tasks into classroom settings as curriculum units, they were mangled and appropriated by the mandated instructional activities of the classroom to fit its driving necessities (Newman, Griffin, & Cole, 1989). This research revealed with special clarity how task and setting, text and context, constitute each other. Which side of the coin one notices is determined by a multitude of factors, not least of which are one's institutional location and theoretical stance.

(3) In the early 1980s we began seeking to demonstrate that it is possible to create after school educational activities that simultaneously satisfy adults' desire for their children to get academic enrichment and are yet attractive enough to children that they attend voluntarily. As described in various publications over the past several years, we have designed a number of variations on an activity we call "The 5th Dimension" which deliberately mixes school-derived educational content, fantasy play, peer interaction, and affiliation all within a single system (Cole & Nicolopoulou, 1989; Griffin & Cole, 1987; LCHC, 1982).

Materially, the 5th Dimension combines:

(1) Several low cost computers (of the Apple 2 series in most of our work), a mix of commercially available educational computer games, prototypes of games written by colleagues and friends within and outside of our laboratory, video arcade games, as well as various board games.
(2) A modem and software to provide new links between host institutions and their contexts along with ways to involve children in new forms of educational activity through electronic mail.
(3) Specially designed task cards that specify how to achieve the goals of the 5th Dimension (which include working with all of the games to a specified level of mastery). Successful completion of a task ordinarily requires writing about it through electronic mail or in some other form to communicate about its challenges and virtues (or lack thereof).
(4) A constitution written by a whimsical wizard to whom both adults and children alike are subordinated along with many rules and regulations, all of which are open to constant negotiation with the Wizard, who is reachable through electronic mail.

These props are then assembled to achieve the kind of activity system we are seeking on *theoretical* grounds.

From In Vitro *to* In Vivo

There is good deal more that can be described about the artifacts, rules, and procedures that are our props for constructing these kinds of mixed activities. To illustrate my point in this paper, it is sufficient to say that such activity systems have been constructed repeatedly by a mix of individuals in a mix of geographical and institutional locales. Moreover, wherever they have been instituted, both the researchers and the adults responsible for the workings of the host institution agreed that the activity was good not only for the children's academic development, but for their overall social development as well. Children read, wrote, figured out strategies, argued, joked, and generally engaged in what John Dewey referred to as intelligent activity.

> "Intelligent activity is distinguished from aimless activity by the fact that it involves the selection of means-analysis out of the variety of conditions that we present, and their arrangement-synthesis to reach an intended aim or purpose . . . the principle of organization of activity in terms of some perception of the relation of consequences to means applies even with the very young. Otherwise an activity ceases to be educational because it is blind." (Dewey, 1938, p. 84)

I do not want to give the impression that constructing or maintaining such activities is easy or trouble free. The task of getting to know personnel in the host institutions,

observing their standard working practices and coming to understand the constraints on them, then working with them to make arrangements for the new kind of activity all proceeds the actual running of the system. In addition, it is essential to construct a descriptive/analytic apparatus to track the course of change within the 5th Dimension as well as the interactions between this new activity and its setting both in the local institution and the community. All I want to establish for purposes of discussing this specific current research project is the possibility of creating new after school activity systems that include play and peers as well as school-derived educational activity. A successful culture in the sense of system for growing things, with the described qualities can be created.

From Creation to a "Life of its Own"

The crucial question then becomes: Once a "successful" new activity system has been created, can it be sustained? This is the stage our research finds itself in at present. Beginning three years ago, with external funds provided by a granting agency (The Spencer Foundation) we sought to apply insights we had gained from a sequence of experiments in setting up different kinds of activity systems over the past decade. The first year of the project was spent entirely in exploration of potential community institutions that might plausibly host such activities. We explained as carefully as we could our main idea and conducted workshops that exposed community participants to a wide range of potential activities they could use as the basis for the new activity in their institution. We took special pains to make clear that the question of transferring responsibility from researcher to local personnel needed to be addressed from the outset. The next two years were spent in implementing the system. This implementation work included not only actually conducting the activity with children and observing their behavior, but meeting with personnel in the institutions who were likely to be responsible for it should it be incorporated into the institution once the grant funds were exhausted.

We began work with four institutions: an elementary school, a daycare center, a library, and a Boys and Girls Club. In one case, the school, we failed even to get the new activity implemented. Although the school was the only institution with computers when we started, they were unwilling to make those computers available to children after school hours for a variety of good institutional reasons.

In one institution, the daycare center, the activity died before the first year of implementation was completed. Although the responsible adults liked the activity, it proved extremely vexatious for them to interact with because their primary concern was to protect their children against child abuse (and the adults against parental suits) and the activity often brought strangers onto the institution's territory. With expressions of deep regret, the activity was cancelled.

In the library, the activity flourished so long as there was constant support and energy supplied from outside the institution. From our (researchers') perspective, the developmental quality of interactions in the 5th Dimension that evolved in the Library was the best we had ever achieved. However, when extra funds were no longer available, it emerged that despite the best efforts of all, the activity could not be maintained.

Finally, in the Boys and Girls Club the activity not only survived the retreat of outside support, but has continued to grow. Whereas it was initially located in only one such club, it is now in three, and the amount of money being allotted for personnel and equipment by the host institutions has been growing steadily.

We are currently monitoring the changes we instituted to see if the activity continues to gather support. Every bit as important, we are monitoring the quality of interaction within the setting to see if it maintains the positive developmental qualities that made it attractive in the first place.

It is too early to say with any certainty, what the future will hold for this small (yet difficult!) attempt at a form of psychological research which treats theory and practice as different moments in a combined methodology. We are pretty confident that we have been successful in that part of our work most closely connected to academic theories. And, at present, our theoretically-driven new form of activity is apparently live and well. It has even spread beyond the Boys and Girls Clubs to a nearby private school and some not-so-nearby replications taking place in other parts of the United States and in Europe.

Conclusions

I will conclude briefly by reflecting upon the relationship between the concrete example of research I am currently involved in and the efforts of many developmental psychologists to apply the conclusions of their basic research to applied problems in their own or others' communities. First, as I think it apparent, I think it is essential that developmental psychologists be extremely humble in their expectations of bringing about something useful for children on the basis of their research. Too often our knowledge is too incomplete and too parochial to withstand the chasm that separates laboratory from life.

This problem is, of course, severely exacerbated when we attempt to apply our knowledge outside of our own communities. The fact that these remarks were initially prepared for delivery to a group of Latin American psychologists forced me to think particularly hard about the special difficulties of exporting one's theories of development from one cultural–historical circumstance to another. At the same time, it has pushed to the forefront of attention the need to examine seriously the strategies of applied developmental research in any country.

One overwhelming fact in contemplating research in the Third World based on research derived from the industrialized world, and especially its middle class populations, are quantum differences in general material well being and the intimately associated fact of asymmetrical power that separate us as citizens of different geographical regions. I can well imagine those who have had experience working in the Third World having the impulse to reject the very local, relatively "well to do" problems of my community. I take it for granted that the specifics of the case I gave will not be suitable for direct applications outside of my own geographical region, and a small one at that. But the *principles* that have guided this work are generalizable. It is possible to be of the community and enter into critical dialog with it as a developmental psychologist under the conditions that I have sketched.

However, whenever the developmental psychologist begins to move outside of his/her community and to proclaim local values universal, one must begin to get very precise about which value system, what claims to history and legitimacy, "those others" prescribe to. In our scientific work, are we truly accepting an insider's point of view or are we importing the ideology of those who sent us, dressed up in the notion of a value-free science?

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