Culture and Human Development

The importance of cross-cultural research for the social sciences

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Using Cross-Cultural Psychology to Design Afterschool Educational Activities in Different Cultural Settings

Michael Cole

Introduction

The goal of this chapter is to introduce a somewhat unorthodox cross-cultural research strategy and to show that it can be of practical use to social scientists interested in the design of environments for the development of children. The initial motivation for undertaking this work was my long term dissatisfaction with the difficulties of conducting methodologically adequate cross-cultural research involving large demographic groups or entire nations, combined with my growing interest in specifying the role of culture in development in rather precise detail. These two concerns appear to be at odds with each other, so I will begin by outlining a view of culture which I believe to be well suited to purposes of designing environments to illustrate culture's role in development. I will then go on to argue that deliberately constructed cultures offer analytic advantages to those interested in both the role of culture in development and cross-cultural comparisons, in addition to arguing for the efficacies of the particular cultures studied. While this approach does not solve problems facing those concerned with macro comparisons of culture in development, my hope is that by highlighting the issues involved, my work may inspire more effective responses to unsolved problems of cross-cultural psychology, traditionally understood.

Some Commonplace Definitions of Culture

In their often quoted book about the many definitions of culture, Alfred Kroeber and Clyde Kluckhohn (1952) offered a definition which continues to pervade cross-cultural psychological work to this day. Culture, they wrote, refers to "patterns ... of and for behavior acquired and transmitted by symbols, constituting the distinctive achievements of human groups, including their embodiments in artifacts" (p. 151). Culture also refers to traditional ideas and their attached values and constitutes both products of action and conditions for future actions.

Edwin Hutchins (1995), who, like me, has focused his recent work on cultures as they develop in small, specialized groups, refers to culture as "an adaptive process that takes place inside and outside the minds of people. It is the process in which everyday cultural practices are enacted" (p. xx).

Finally, Raymond Williams (1973) offers a definition which explicitly links the concept of culture to the process of development. By his account, since its appearance in the English language in the 16th century, culture has always been "a noun of process, the process of tending of something, basically crops or animals (e.g., horticulture, agriculture, etc.)" (p. 77).

Some Commonplace Observations Concerning the Difficulties of Applied Cross-Cultural Research

I will not rehearse here the many methodological difficulties of conducting typical cross-cultural research on large social systems. I believe that the difficulties have been well articulated and the search for methods to circumvent those difficulties have also received extensive attention (Berry, Poortinga, & Pandey, 1997; Boesch, 1997; Cole, 1996; Jahoda, 1993).

In large measure, the very reasons cross-cultural research is difficult to conduct in a methodologically satisfactory way where one's goal is to make causal attributions from culture to behavior are the very reasons one wants to conduct such research in the first place: growing up in different cultural environments presumably influences one's development, but that environment/culture exists prior to the arrival of the analyst and is a pre-existing condition that makes random assignment of people to treatment groups impossible, thereby undermining the logic of experimentation that warrants the very causal attributions one was interested in investigating the first place.

When it comes to efforts to apply knowledge learned from cross-cultural work for (presumably) beneficial purposes, the uncertain knowledge obtained from the initial research carries with it additional dangers. For both practical and usually ethical reasons as well, it is inappropriate to even contemplate changing entire cultural systems because the unintended consequences of such changes are impossible to anticipate, although there are historical circumstances that may motivate us to do

so. I have in mind here the catastrophic dislocations currently occurring in parts of Africa and elsewhere as a result of AIDS epidemic. Certainly we know that relatively rapid cultural change with identifiable health benefits (for example) *can* occur (the rapid diminution of smoking among pregnant women in some parts of the world, for example), but *experimentation* in cultural change on a large-scale basis remains an unviable alternative strategy for either applied or basic research on culture and development.

These and other factors suggest that for purposes of design, we consider smaller social systems that nonetheless qualify as socio-*cultural* systems where design and experimentation are ethically acceptable. That is the course I chose to follow.

Idiocultures

Williams' emphasis on interpreting culture as the process of creating an environment to promote growth has several salutary consequences for my purposes to design experimentation on culture and development.

First, it points toward the use of environmental design, including the need to develop appropriate physical and conceptual tools to carry out our task of promoting development as a part of the design process. Hence, it links nicely to theories of the role of artifact mediation in human development (e.g., Vygotsky, 1978).

Second, it practically forces upon us a developmental/historical approach in which we study the success of our design over generations. After all, we cannot just plant the seeds and walk away. We cannot just allow the seeds to sprout, pick weeds, and walk away. We must see what natural predators appear, how to deal with them, and how to see that we have seeds enough left over from one growing season to assure the birth of a next generation.

Third, Williams' emphasis on the organization of environments rather naturally reminds us that it is necessary not only to design environments which are effective "inside the fence," but which are sustainable in the larger ecological settings within which they are embedded. So, study of culture/development over time requires a dual focus on the traditional objects of psychology, that is, people in their immediate environments, but also larger units of analysis such as the institutional context of the immediate environment as well. This latter topic is especially highlighted in the study of after school activity systems, where exclusive attention to proving that they are effective detracts attention from the fact that they often fail to be sustained in their socio-ecologies, despite their effectiveness locally.

Idiocultures: A unit of analysis to substitute for cultures characterizing large scale societies

It has been known at least since the study of culture formation in small groups during the 1950's that no sooner do two or more people get together to accomplish some task in common than they begin to develop special terminology and proce-

dures which become routine and fade into the background of their interactions (Rose & Felton, 1955). When new people enter the group, they quickly and easily begin to use these new cultural artifacts and begin introducing new items of their own. The same is true, of course, of naturally forming groups where people congregate at work or play, giving rise to such popular expressions as "office culture," observations of which have made the American comic page character, Dilbert, famous.

In a number of his writings, particularly his ethnographic study of Little League Baseball, sociologist Gary Alan Fine (1989) has suggested the term "idioculture" to apply to such social entities. In his words,

> an *idioculture* is a cultural formation that emerges in a *small* group: system of knowledge, beliefs, behaviors, and customs shared by members of an interacting group to which members can refer and that serve as the basis of further interaction. Members recognize that they share experiences, and these experiences can be referred to with the expectation they will be understood by other members, thus being used to construct a reality for the participants. (p. 125)

This definition of an idioculture fits well the formation of cultures in the small groups ranging in size from approximately eight to 25 members present at any one time, although numbers and characteristics of participants varied from one idioculture to the next, as we shall see in the idiocultures to be described below.

Fifth Dimension: A prototype idioculture for afterschool educational activity

As will become clear, an essential feature of the idiocultures that I refer to as Fifth Dimensions is their adaptability to specific local conditions. Nonetheless, there was an "original" Fifth Dimension (LCHC, 1982) and an initial set of ideas which constituted the starting point of its development as an idioculture, which then underwent change across implementations. Consequently, it is useful to provide a description of that ideal type as a provisional benchmark for evaluating the subsequent diversity (for other descriptions, see Cole, 1996; Vasquez, 2003).

The Fifth Dimension is an educational activity system that offers school aged children a specially designed environment in which to explore a variety of off-the-shelf computer games and game-like educational activities during the afterschool hours (see Figure 1). The computer games are a part of a make-believe play world that includes non-computer games like origami, chess, and boggle and a variety of other artifacts.

College or university students enrolled in a course focused on fieldwork in a community setting play, work, and learn as the children's partners. In assisting children, the students are encouraged to follow the guideline: Help as little as possible but as much as necessary for you and the child to have fun and make progress. The presence of college or university undergraduates is a major draw for the children.

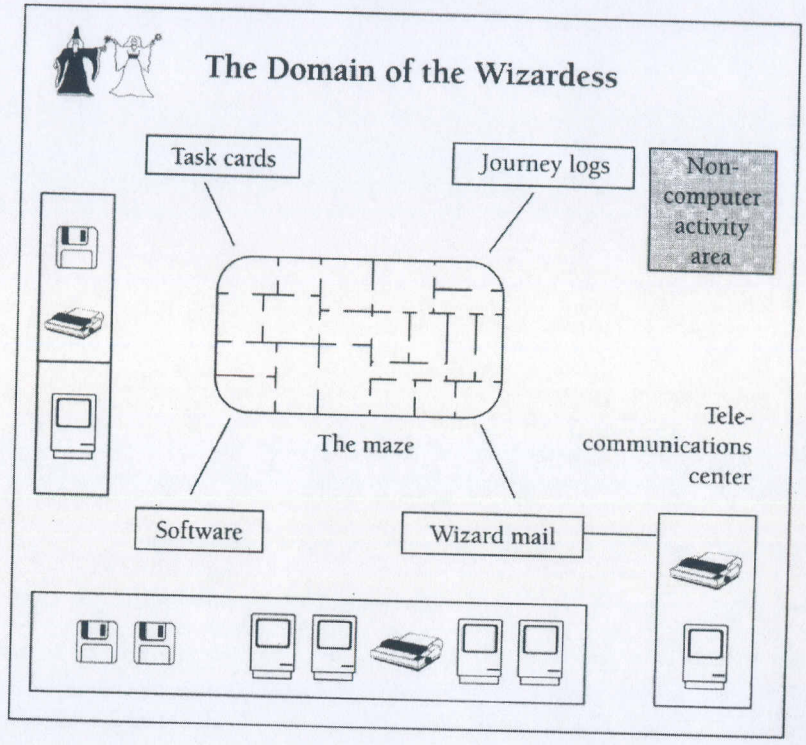

Figure 1. Layout of a Prototype Fifth Dimension

As a means of distributing the children's and undergraduates' use of the various games, the Fifth Dimension contains a table-top or wall chart maze consisting of a number of rooms, initially 20. Each room provides access to two or more games, and the children may choose which game to play as they enter each room

Games are played using task cards written by project staff members for each game. Task cards fulfill several goals. They are designed to help participants (both children and undergraduate students) orient to the game, to form goals, and to chart progress toward becoming an expert. They provide a variety of requirements in addition to the intellectual tasks written into the software or game activity itself. These additional requirements routinely include having participants externalize their thinking and learning or reflect upon and criticize the activity, sometimes by writing to someone, sometimes by looking up information in an encyclopedia, or by teaching someone else what one has learned (see Figure 1).

There is an electronic entity (a wizard/wizardess/Maga, Golem, Proteo, etc.) who is said to live in the Internet. The entity writes to (and sometimes chats with) the children and undergraduates via the Internet and they write back. In the mythology of the Fifth Dimension, the electronic entity acts as the participants' patron, provider of games, mediator of disputes, as well as the source of computer glitches and other misfortunes.

Because it is located in a community institution, the Fifth Dimension activities require the presence of a local "site coordinator" who greets the participants as they arrive and supervises the flow of activity in the room. The site coordinator is trained to recognize and support the pedagogical ideals and curricular practices that mark the Fifth Dimension as "different" – a different way for kids to use computers, a different way of playing with other children, and a different way of interacting with adults.

In short, considered in its community context, the Fifth Dimension is organized to create an institutionalized version of the form of interaction that Vygotsky (1978) referred to as a zone of proximal development for participants. Unlike the more formal interactions envisioned by Vygotsky, from time to time there is creative confusion about who the more capable peers might be, e.g., when novice undergraduates encounter children highly skilled in playing educational computer games about which they know nothing. But the general culture of collaborative learning that is created within the Fifth Dimension is designed to serve the development of all.

How does one know that one is dealing with an idioculture in the Fifth Dimension?

All I have done above is to characterize some design principles that went into construction of an activity where a group of children, accompanied by a few undergraduates, get together several days a week to engage in a rather peculiar mixture of play, academic work, and peer interaction. How do I know, or perhaps more importantly how can I convince you, that the activity I have just described is in fact an idioculture?

For this purpose, my best alternative is to return to the classical definitions of culture provided at the beginning of this chapter, and supplement them by field notes written by undergraduate participants as part of their participation. According to the classical definitions, we should expect to encounter "patterns ... of behavior acquired and transmitted by symbols, constituting the distinctive achievements of human groups, including their embodiments in artifacts (...)." These patterns ought to take place in, and constitute, cultural practices and they should take place in an environment designed for the development of children. All of these definitions, including their inclusion in Fine's definition of an idioculture, are practically unavoidable.

Here is a brief sample of field notes from newcomers at a Fifth Dimension in a Boys and Girls Club (BGC):

> "It seems pretty chaotic with kids coming and going, arguments in progress, and computers blinking. Pretty soon I noticed that almost everyone seemed to know what to do. No one was bumping into or fighting with anyone else, the children seemed to enjoy themselves, and they were doing a lot of academic stuff. They are excited by invisible events, they say odd things like 'Wildcat is down!'; 'Right 45 degrees'; 'Katmandu'; 'I hate the Wizard,' and so on. And it all seems to make sense to them."

> "It was really odd having a young adolescent guiding us through the game. I felt sort of helpless in a way, considering that knowledge is power in this society. Here we were, elders who would soon take on the challenge of helping children develop their minds and to help them to get through the Fifth Dimension and we couldn't even finish the first round! Boy was I humiliated in a fun way!"

Over the course of any given 10 week quarter during which a group of undergraduates are present, or a year, during which three groups of undergraduates are present, the idioculture of the Fifth Dimension undergoes constant change.

The sources of change are so diverse that I have not yet been able to dimensionalize them, although a change in the hardware (the advent of the computers with large memories or the internet, for example) and the software (which began with *Pacman* and now includes highly sophisticated simulation games) certainly has played its role. But so have games which do not depend in the least upon computer hardware or software, such as the African board game mancala, which from time to time has developed its own micro-culture of devotees, invasion from Pokemon and other faddish games that appear and disappear like locusts in the deserts of Utah, or the appearance among the undergraduates of a very feminine undergraduate woman wearing long skirts who was easily the most accomplished skateboarder in the group, and so on.

Analyzing the Fifth Dimension

Participants' behavior in the Fifth Dimension can be analyzed with respect to cultural mediation of children's development both within and between different Fifth Dimension idiocultures located in different socio-cultural environments.

Cross-cultural analysis of different Fifth Dimensions

A major analytic advantage that we gain in comparing Fifth Dimension idiocultures is that we know the "original" since we created it and described it with some care at the time. Of course, the original design required a process of culture formation just as the formation of all of its subsequent varieties. And the particular formation that evolved was very much a product of the special circumstances we faced and the goals we hoped to attain. But at least we know who started it and the stated goals and outcomes of their efforts (LCHC, 1982).

Despite this presumed advantage, I was insensitive to the potential for comparative, cross-cultural research for many months after actually initiating a trio of Fifth Dimensions in a suburb north of San Diego. The three locales were a child care center, a library, and a Boys and Girls Club (BGC). I was hugely preoccupied with simply getting three systems going at one time. Each organization had its own local constraints and demands. The child care center catered to young children, roughly five to eight years old. The BGC had attendees who ranged in age from about six to 14 years of age, but with a large cluster between seven and nine years. The composition of the Library group was similar to that of the Club.

The child care center ran the Fifth Dimension in one of its classrooms. Because all the computers and other artifacts of the Fifth Dimension were absent from the classrooms, the undergraduates and researchers were required to put together the requisite materials at the beginning of each of their twice weekly visits. This research, begun in 1987, when computers were scarce, required us to carry a set of Apple 2 computers with us to each site and forced the policy of running no more than two of the three initial sites on any given day owing to both limits on the number of computers and on the number of undergraduates and researchers who could be deployed simultaneously. The Library devoted a corner cleared to allow the setup of several computers at a large table and room for other artifacts connected with the activity (to be described below). The BGC had a relatively large room where computers could be placed along the walls and two large tables for arraying the associated artifacts.

At the child care center the children all arrived simultaneously on a bus provided by the school district, and their presence was carefully documented. At the Library the children were brought by their parents, because the Library was located across the freeway from their schools and it was too dangerous for them to be left alone to walk there. At the BGC children walked from a nearby school. In all cases, children stayed for about an hour and a half, and were picked up on a haphazard schedule by their parents, according to exigencies of the day.

During the first year of research, creating, seeking to sustain, and documenting change of the children and the idiocultures that formed in each site, we discovered that just as every garden differs from every other garden, depending upon the goals of the gardeners, the conditions of the soil, the weather, the availability of nutrients, and water, etc. as well as the institutional setting of which it is a part – the garden's context, according to one ubiquitous use of that term – so too with Fifth Dimensions. As undergraduates began to experience more than one Fifth Dimension, they spontaneously commented in their field notes that no two Fifth Dimension cultures are alike. Despite a common origin, both institutionally and ideologically, and many common artifacts, the differences among different Fifth Dimension were a constant source of wonderment to the students. Yet, at the same time, each seemed to be recognizable as a Fifth Dimension. What were some of the common features, despite the variability? And how are we to describe and explain the variability?

Some similarities

Since they have been conceived of for the same purpose, have key participants who attend the same undergraduate course, and are all supervised by a single research team, it is only to be expected that different Fifth Dimensions would have similar idiocultural features and they do. All, for example, deliberately mix play and education and involve multigenerational social interactions among participants. These and other common starting points result in recognizable similarities across sites.

One of the striking similarities is what Nicolopoulou and Cole (1993) referred to as a "culture of collaborative learning." This similarity manifests itself in many ways. Primarily, perhaps, is, that activities within various instantiations of the Fifth Dimension provide little or no evidence of overt competition or hierarchy. Even though there is hierarchical potential in the existence of a site coordinator, undergraduates, and children of different ages, activities at all of the sites share what I might term a "horizontal structure." In photographs taken at different sites over a period of many years, one sees time after time that by and large (despite differences in size) the head levels of children and undergraduate participants, and even the older adults are at more or less the same level (see Figure 2).

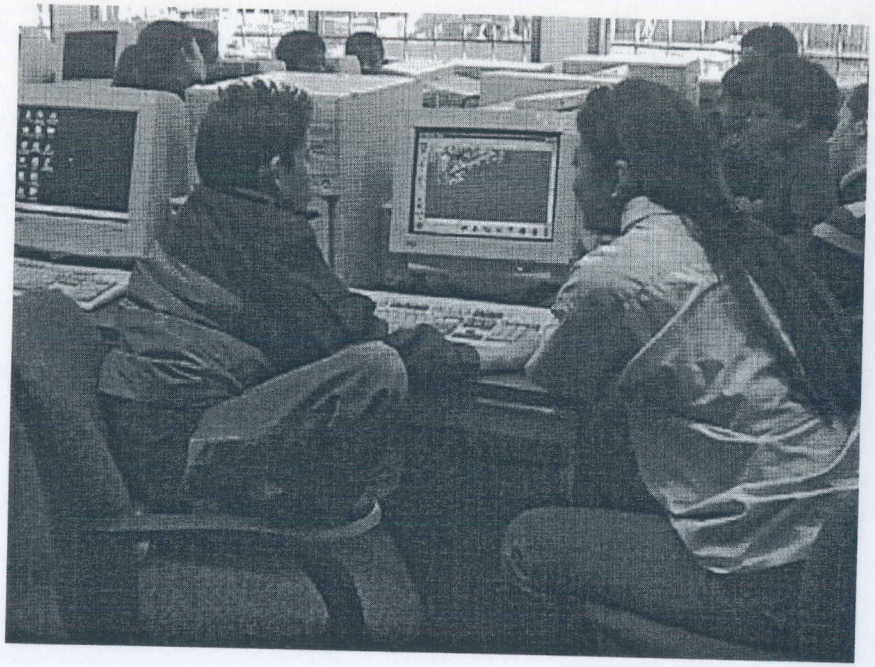

Figure 2. Illustration of Horizontal Structure

Another striking similarity is that each site has a wide variety of activities that go well beyond the presence of different kinds of computers and different computer games. The specifics of this variety naturally differ from one idioculture to the next, but the presence of such variety bespeaks the common goal of arranging to meet the interests of a wide variety of children and to be in a position to find something interesting for children and undergraduates to engage in when computers or computer games are not working (a ubiquitous shared condition in all of the sites). Such ancillary activities range from the use of drawing materials, board games, to tasks associated with physical exercise, photography, and so on.

A third similarity is associated with the common need across sites to distribute scarce and uncertain resources to make the idioculture a place where children voluntarily come to spend their time. As mentioned in our description of a prototypical Fifth Dimension, there is a means for distributing activities among children and providing them with a variety of specific activities to choose among, instantiated in the prototype as a physical maze. Some version of such a maze is ubiquitous as a flexible means of task allocation across all Fifth Dimensions, although, again, the specifics of how this artifact is constructed vary not only across sites but within sites across time (see Figures 3 and 4).

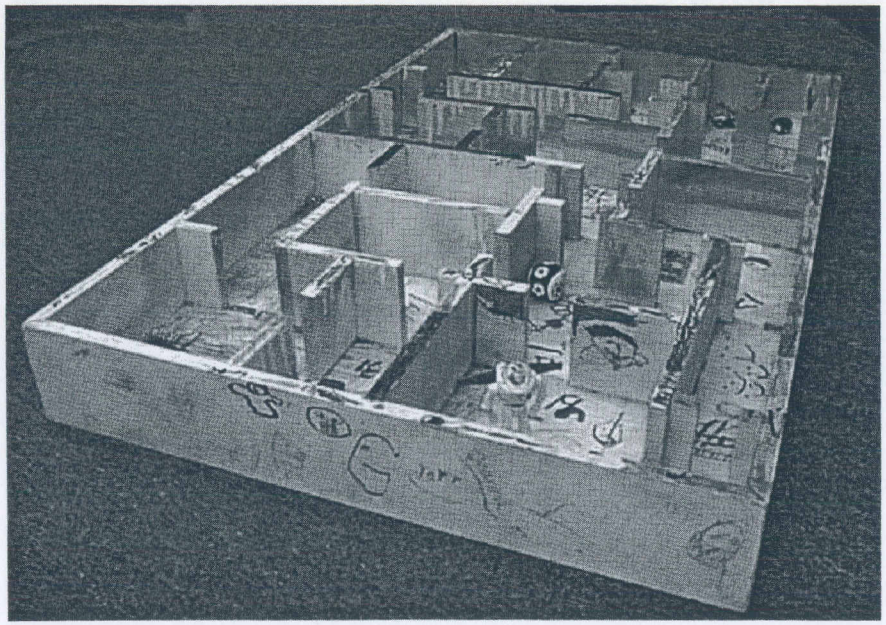

Figure 3. Example of a Fifth Dimension maze retrieved from the Fifth Dimension Clearinghouse (http://129.171.53.1/blantonw/5dClhse/clearingh1.html)

Figure 4. Further Example of a Maze

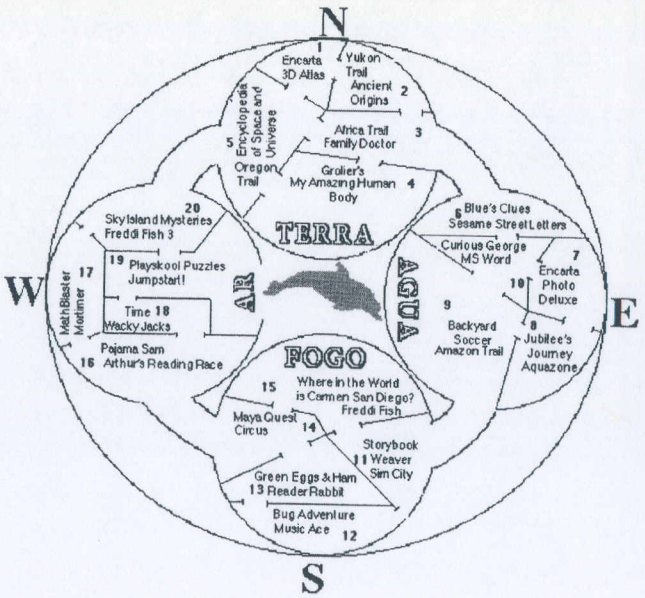

Figure 5. Map of the Fifth Dimension (Play Pen) from Escola Cidade Jardim, São Paulo, Brasil

While other similarities could be mentioned, those noted above are typical as is their source. They are common solutions to common problems. At the same time, each idioculture exists under at least slightly different institutional conditions, involves different people as participants, somewhat different specific tools (e.g., different computers, different games that have been donated or purchased) and so they differ in their specifics according to the tastes and opportunities of their users.

Differences

One of the most widely accepted ideas in cross-cultural research is that cultures represent ways of life that have evolved to meet the challenges posed by local circumstances. That is, the organization of any culture must be understood as a relationship between the "culture itself" and its environment. This principle is clearly illustrated in comparative analyses of different Fifth Dimensions.

Cultural environment

Although I have already commented that the particular way in which common features across cultures are constructed differs across instantiations of the Fifth Dimension the point is worth further examination because it is true even when we restrict our attention to Fifth Dimensions that appear to exist under very similar circumstances (e.g., they are run by a single community group, the same group of undergraduates taking the same course from the same institution, all of whom are in constant contact with each other). And, it is of course obvious when the larger cultural context of the local Fifth Dimension is taken into account: For example, a Fifth Dimension conducted in a Gypsy community in Barcelona uses a gypsy symbol of a wagon wheel as its maze, reflecting Gypsy culture, while the symbol used to represent the maze at one of the BGCs (Boys and Girls Clubs) where the Fifth Dimension currently runs is a pizza pie cut into slices because pizza parties are a locally common way to mark celebrations, such as the ascension of a child to the role of "Wizard's assistant" because she or he has completed all the games at a high level of proficiency.

But, as mentioned previously, significant differences among idiocultures arise even within a single socio-economic group, identical community organizations and in cases where the undergraduate participants come from a single course, so all have "the same idea" of what a Fifth Dimension is and how it ought to be conducted. Examination of such cases makes contact with macro-level explanations of cultural variation, and are, consequently, of special interest in understanding the process of cultural change as it relates to individual change.

Physical environment

A comparison of the idiocultures that developed in our early work with the BGC and the Library provides an especially informative case in regard to the physical environment (for more details, see Cole, 1996; Nicolopoulou & Cole, 1993).

As mentioned earlier, the Fifth Dimension in the BGC was surrounded by many other activities the children could engage in: athletics, arts and crafts, ping pong and pool, to name a few. A large swimming pool was located outside the Fifth Dimension room. Often rock music blared from a boom box in the game room outside the doors of the Fifth Dimension were always open, so children could come and go as they wished.

The situation with respect to the Library was quite different. The children were of course free to come and go from the Fifth Dimension, but their parents did not want them to leave the library. So, while they could choose to leave the Fifth Dimension at any time, their choices when they did so were restricted; they could read quietly or do homework, but they could not run around to have a good time.

As a consequence of the contrasting environments in which they were embedded, the two Fifth Dimensions bore opposite relations to each other with respect to how they related to their environments. Both mixed games, learning, and peer interaction and shared the same games, the same reading/writing tasks associated with each game, and the same set of undergraduate companions. But the BGC Fifth Dimension was, relative to its environment, a place where education was more likely to be in evidence while in the library, the Fifth Dimension play was more likely to be present than in its surroundings. If the children got excited by someone's special achievement, they were likely to make excited noises that were noticed by library patrons and librarians, and not particularly appreciated. Hence, the undergraduates and site coordinator often found themselves whispering, "Remember, this is a *library* Fifth Dimension" and in general, working to keep the atmosphere of the Fifth Dimension relatively sedate.

The consequence of these relationships is diagrammed in a crude way in Figure 6 in which the ordinate of the Figure should be interpreted as noise level. As you can see, there is good reason for undergraduates who spent time at the BGC and at the Library to see the two idiocultures as very different: one was a good deal noisier than the other. However, when considered in relationship to their local environments, it is clear that the BGC Fifth Dimension was quieter than its environment (the games room at the club) while the Library Fifth Dimension was correspondingly noisier than its environment (the reading spaces in the Library).

Other contextual factors

A large set of additional contextual factors is involved when we move beyond Fifth Dimensions that involve the same population of children to include varieties of children, neighborhoods, and other institutions. An instructive case is La Clase Mágica, an adaptation of the Fifth Dimension begun by Olga Vasquez located about the same distance from the BGC as the Library, but in a different part of town that is the largest Mexicano barrio (neighborhood) in the town. The institution which plays host to La Clase Mágica is a Catholic mission, under the control of a nearby Catholic church. The Church is predominantly Anglo and its parishioners economically well off. The parishioners of the Mission are overwhelmingly of Mexican origin –

many have lived in the town for generations, while others are recent immigrants – and economically struggling.

There are important variations in the local practices within La Clase Mágica associated with Vasquez's commitment to promoting use of the community's knowledge and resources, including knowledge of Spanish, in the design and implementation of the activity (for details, see Vasquez, 2003) as well as cultural features of the population that participates. For example, often there are many young children present because their older siblings or cousins have been put in charge of care giving and have brought them along. There are also differences which represent a combination of local necessity and ideology. So, for example, the site coordinator is a local parent who has been trained and participated in the activity when her own children were participating (the first coordinator was the catechism teacher at the Mission), which is both an externally imposed necessity – unlike the BGC, the Mission has no other ongoing afterschool program and hence no staff – and a means of engaging and empowering the local community.

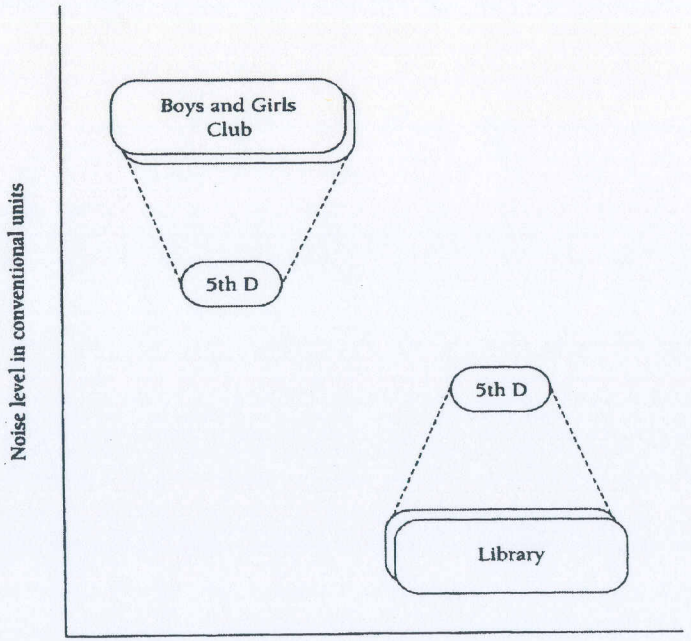

Figure 6. Comparison of Noise Levels in BGC and Library Fifth Dimensions

Such obvious cultural factors, in the usual sense of the term, are clearly important in giving La Clase Mágica its special cultural features as a member of the fam-ily of Fifth Dimension idiocultures. But just as importantly, like the Library, and unlike the BGC, the physical setting of La Clase Mágica (currently in a room that was part of a Head Start center which has expanded since the site was first opened) is not a place where children play. There is a small yard with two tables that is deserted when the Head Start program is not in operation, but the site, on the Mission grounds, is not a play yard for children, and is deserted in the afternoons. It serves exclusively as a quiet place where children who need to do homework can do so. Hence, relative to its environment, like the Library, *La Clase Mágica* is a buzzing hub of noisy activity. However, there is no effort to contain the children's enthusiasm when a child and undergraduate jointly achieve some coveted goal or El Maga, their mythical patron(ess) appears online to chat. The only constraint on noise level (as in the Fifth Dimension at the *BGC*) is that children not make so much noise it disturbs the playful problem solving of others in the room.

Yet in one respect, the common relationship of La Clase Mágica to its surroundings has a marked *common* effect on children's participation. Because the idioculture in each case is, so to speak, the only game in town, children typically come and stay for the full time the activity is running. This contrasts strongly with the Fifth Dimension at the BGC where children come and go with such high frequency that merely keeping track of how many children have participated at the site on a given day requires special attention and even is a difficult and uncertain task. This commonality with the Library and contrast with the BGC is closely related to a second one: there is stronger evidence of intellectual gains by children who attended either the Library or La Clase Mágica Fifth Dimensions than there is for the BGC.

This is not to say that no intellectual development occurs at the BGC, but it is extraordinarily difficult to document by a test or common task because children come and go on schedules that make long term assessment of groups of children very difficult. In the one case where this was accomplished by Ageliki Nicolopoulou with respect to a particular problem solving game, there was little evidence of accumulating knowledge at the BGC, but clear evidence at the Library. Such evidence for La Clase Mágica can also be found in Vasquez (2003).

Cautions and expectations

Over the 15 years when I first began this work, the Fifth Dimension has been taken up by a large number of institutions in various parts of the United States and in other countries (for relevant information, see www.uclinks.org). This proliferation has allowed us to extend greatly the potential for cross-cultural comparisons of various kinds. One of particular interest has been cases where Fifth Dimensions have been placed in schools, either as part of the school day or afterschool using school facilities (for reports of these various efforts, the reader is directed to the webpage given above).

Although the variety of idiocultures that has developed from these efforts is enormous, some regularities already anticipatable on the basis of the examples given here are obvious. For example, when a Fifth Dimension occurs in school, and especially if it occurs during school hours, the struggle is to keep its play element alive and to make possible the higher noise levels and degrees of independent child movement and choice that are necessary for the core features of the idioculture to emerge. Or, when a Fifth Dimension in a playful afterschool setting like a BGC begins to get too academic, or to include activities identifiable by the children as tests, the life goes out of the culture and it has to change or die.

Overall, while one cannot pre-scribe, let alone pre-dict(ate) the exact combination of play, education, and peer interaction, that will produce a viable and vibrant Fifth Dimension, the relational view embodied in our comparisons of many Fifth Dimensions in relation to their institutional contexts enables us to identify likely mistakes that newcomers interested in starting up such activities should try to avoid and a huge toolkit of resources that they can call upon to bring such idiocultures into being.

The Importance of Taking Sustainability as the Central Research Question

When I first began to create and compare different instantiations of the Fifth Dimension, I did not do so prove to myself that it is possible to create activities which are both educational and attractive to children during the afterschool hours. From my work with the original Fifth Dimension several years earlier (see Cole, 1996, for a description) I was convinced that this activity was both attractive to children and a good environment in which to promote their development, as well as the academic development of undergraduates. My major foci were two: Under what conditions would it be possible to conduct analysis of cognitive development in such systems and what factors were associated with the failure of successful educational innovations (of which I assumed the Fifth Dimension to be an example) to be sustained, even though they were valued by those who participated in them and their institutional sponsors?

I have touched lightly on the first issue here, and do not plan to pursue it further owing to lack space, although it is a question of considerable theoretical as well as practical importance (see information provided under "references" at www.uclinks.org for a plethora of writing on this topic). But the second point requires special emphasis because it turns out that in taking sustainability as a focus of inquiry, I unwittingly committed myself to the longitudinal study of culture and cognitive development over a period that has thus far spanned 16 years.

I would like to be able to claim that I foresaw the virtues of such longitudinal research on individuals related to idiocultures, but I did not. I actually assumed that within three to four years, all of the original Fifth Dimensions would disappear. Their failure would allow me to study the dynamics of the demise of successful educational innovations, a topic I still consider crucial. But I did not foresee that

when three years were up, the BGC would begin to pick up a significant proportion of the costs of running the program. I did not foresee a variety of changes in society that would catapult afterschool into the national consciousness as a means of meeting challenges posed by increased involvement of women in the workforce and demands for higher levels of school achievement. Consequently, I never imagined that 17 years after conceiving of this project, it would have continued at one of the original sites and spread to many parts of the globe.

All of that is interesting in so far as it speaks to the issue of the successful use of the notion of idioculture and Vygotskian theory for purposes of idiocultural design. But I wish to conclude by noting a different benefit that resulted from this emphasis on sustainability, combined with the actual fact of a project involving idioculture design lasting for so long in a number of institutions. This benefit is the ability to observe, participate in, and document the incredible dynamism of change at the cultural, ontogenetic, and micro-genetic levels of analysis, which, with rare exceptions (e.g., Greenfield, 1999), is absent from the cross-cultural literature because of the long time spans involved. In Greenfield's case, she was able to return to southern Mexico after a period of 20 years to document how cultural historical change associated with the coming of roads, modern transportation, and the commodified culture that ensued brought about changes in cultural practices of weaving including not only changes in design and materials, but changes in mother-child interactions surrounding the enculturation of children into weaving practices.

Because they operate at a smaller scale and are accessible in the locales where researchers teach and live, Fifth Dimensions routinely permit the tracing of developmental change at the level of the system as a whole, the cultural practices at the Fifth Dimension sites and university classrooms, as well as the quality of interactions between undergraduates and children and changes in the children and undergraduates over time.

Space permits me only to sketch out one such case, the one I know best, because it is the unique survivor of the original set of Fifth Dimensions that we brought to life in the suburban town near my college campus in 1987, the BGC. I have already contrasted the BGC with similar idiocultures in surrounding institutions, indicating how local context influences the characteristics of the local culture and its impact on the children. What I have not indicated is the constant process of change in the idioculture of the BGC itself over time.

All of the factors that influence synchronic differences between the idiocultures of Fifth Dimension can be seen at work in the diachronic changes in the idioculture as part of the ongoing relationship between the activity system and its institutional environment which is ever changing along multiple dimensions. So, for example, when the Fifth Dimension was first opened at the Club, it occupied a spacious, well lit room that afforded easy movement, plenty of room to place tables where children could draw and play non-computer games, and had a light, airy feel to it. But economic recession induced the Club to combine the Fifth Dimension space with space for its library/homework room in order to raise money by renting out the library

room. With its space cut in half (bookshelves were used as dividers between the two different activity systems) the Fifth Dimension became cramped. No tables were available for joint activity away from the computers and the computers themselves were crammed so close together that easy going interaction around them was difficult. The culture of the Fifth Dimension took on a cramped, somewhat strained feeling, and fewer children or undergraduates could participate, changing the overall feel of the activity.

Constant turnover of personnel has provided a constant challenge to maintaining cultural continuity across generations within the Club while the use of temporary faculty to keep the cost of running the activity at the University to a minimum provided a similar challenge from the University side. And of course, the fact that my university runs on a quarter system means an influx of new undergraduates every three months, so that personnel from the research group, aided by a variety of specially designed artifacts (handbooks for the instructor, a book full of hints about how to play the various games at the site, etc.) were in constant production. Mention should also be made of the unexpectedly rapid change in computer technologies, which meant that new games needed to be introduced into the idioculture as the means for implementing them changed.

By Way of a Summary

It is the nature of chapters such as these that the author can do little more than convey to the reader a general sense of the focal topic, especially when that topic is a deviant practice such as the use of theories of culture in development to design environments for children and study their dynamics over time. Clearly, such an enterprise cannot be a general substitute for the continued effort to understand cultural differences as they occur in historical time on national and international levels. But perhaps some of the principles which are naturally highlighted by the comparative study of idiocultures over time can be of use to those operating at more macro scales, providing first hand experience of the dynamics of culturally mediated change while at the same time providing useful tools for cultural psychologists to contribute to the well being of their local communities.

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