THE QUARTERLY NEWSLETTER OF THE

LABORATORY

OF

COMPARATIVE

HUMAN COGNITION

Center for Human Information Processing
University of California, San Diego

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Introduction

Two beginnings are needed for this issue: an introduction to the articles and an introduction to a group of people. Starting with the new volume in January of 1987, the editorial board not only enlarges but takes on a different character.

An International Editorial Board

Articles in the newsletter indicate our long-standing international interests; now, the editorial board members are international. What unifies them is their study of human growth and development in the socio-cultural medium. An international board provides for different views of culture and cognition in at least two ways. First are differences in everyday life: of each board member, of the problems and people they study. There are advantages to bringing these differences into juxtaposition: Some aspects of the "ordinary" can be foregrounded, seen in a different light, producing more understanding of local issues as a result of looking at them with the help of the eyes of others. The range of concrete variety is, in a sense, a set of multiple representations of the human condition in material form. While the ultimate goal may be change in local practice and policy, a detour through the international viewpoint can be most productive.

A second source for different viewpoints among our new international board is the variety of cultural traditions in which their own growth and development as scholars is embedded. In some ways, the community of scholars is trans-national -- theoretical constructs and methodological advances spread quickly (and even more so with the development of modern communication technologies); however, and particularly with studies of culture and cognition, there is a great range of national differences among the threads that constitute the web surrounding and supporting a scholar in training and in productive work. The history of even a single and relatively well-bounded field of intellectual inquiry is impacted by differing aspects of the rest of the life of a country; socio-political circumstances and cultural factors speed up, slow down, modify the direction, and even interrupt the course of events that contribute to the history of a field. Thus "heterochrony of development" can be expected as we view the history and impact of fields among nations. More complexity, and more opportunities for constructive variations, must be considered when interdisciplinary fields are involved. The heterochrony increases exponentially. Different disciplines, developed in different ways, contribute to the training and audience for these international scholars. As the members of the board participate in decisions about jointly produced issues and as they take particular responsibility for special issues, we expect to see an impact from these differing viewpoints on the individual articles as well as on the range represented among them.

The Members of the New Board

The board members' residences span East and West and Northern and Southern hemispheres. There are nine in all, representing six different countries. Terezinha Nunes Carraher is at the Universidade Federal de Pernambuco in Brazil. Yrjo Engestrom is from the University of Helsinki in Finland. Japan is represented by Giyoo Hatano from the Dokkyo University. David Middleton is from Loughborough University in the U.K. Vladimir Zinchenko is from the Academy of Pedagogical Sciences in the USSR. Five members are in the United States. Two are continuing members: Luis Moll, now at the University of Arizona, and Stephen Diaz, at the University of California at San Diego (UCSD). They are joined by William Hall, from the University of Maryland (who was a co-founder of the Newsletter) and by James Wertsch, now also at UCSD. (The Managing Editors, Peggy Bengel and Michael Cole are still at UCSD.)

This issue

The articles in this issue focus on development: one on the development of theory and the others on children. Norris Minick notes that work within and expansions on Vygotskian theory require a systematic understanding of the diversity within this school of Soviet psychology. Minick traces the theoretical constructs and the productive changes in Vygotsky's viewpoint with respect to the relationship between mind and activity. From Vygotsky's earliest attempts to avoid dualism, his goal was to reconceptualize the object of study, not merely to fuse the constructs of psychologies that dealt with behavior and those that dealt with matters more of the mind. As Minick describes the discontinuities in Vygotsky's own development that eventually point to a synthesis, those

currently working within this framework can see themselves as co-participants with the school's founders in a continuing intellectual journey.

Cynthia Klingler writes about the symbolic tool that Vygotsky was most interested in: speech used to regulate one's own behavior, the epitome of higher psychological functioning. Klingler's subjects are those privileged to have access to two culturally elaborated language systems, Spanish and English; her question is whether this privileged access gives them an edge in the use of "private speech" as a tool in problem solving situations.

Mary Brandt's article picks a different Vygotskian theme: the constitution of an activity system that motivates behaviors. She describes the variation hidden within what might seem to most psychologists a most routine activity -- a free recall experiment. Comparing children who live in Hawaii but who otherwise have very different home and school experiences, Brandt goes beyond the typical report of results to examine non-targeted behaviors, and, even beyond that to consider the ways that school and home practices might be related to the differences that count (and are counted) and those that are not usually noticed.

The final article is a self-report of self-regulation as well as of the engineering of a change in the activity system for reading instruction by a primary participant in the activity. Terry Chadsey reports on his teaching of reading in the primary grades. Supported by personal experience and relevant research literature, he sought to replace ability grouping in his reading curriculum. Chadsey does not have poor readers; he has some who are "strugglers" but struggling is a positive thing, especially with Chadsey's careful arrangement for instruction that sets a climate of achievement, esteem, self-empowered locus of control, and most of all actual reading. Many reasons can be put forth about why a change from homogeneous reading group instruction cannot take place; Chadsey did it anyhow and his report on that makes him an interesting companion on the journey Vygotsky points toward that is not only intellectual but very much related to everyday social interactions and changes in institutionalized activity systems.

The Early History of the Vygotskian School: The Relationship between Mind and Activity

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Only within the past decade have Western scholars begun to appreciate the diversity and breadth of the Vygotskian tradition. Most of us gained our introduction to this tradition through *Thought and Language* (Vygotsky, 1962), an abridged translation of Vygotsky's final attempt to address the problem of the relationship between verbally mediated social interaction and the development of thinking in ontogenesis. With this as a point of departure, the interest of Western scholars moved first to other efforts by Vygotsky and his colleagues to address the relationship between social interaction and cognitive development (e.g., Vygotsky, 1978) and then to the broader range of problems, theory, and research addressed by modern activity theory (Leont'ev, 1978, 1981; Minick, 1985; Wertsch, 1981, 1985).

For those interested in applying and extending this paradigm, the discovery of its diversity has raised several important questions. What is the connection between Vygotsky's work, much of which focused on the role of social interaction in cognitive development, and activity theory, where the inclusion of the individual in socially organized goal-oriented actions provides the foundation for explanations of the development of cognition as well as personality, affect, and motor skills? Is there something more than a general conviction that social and cultural factors play an important role in psychological development that links Vygotsky's work on the development of inner speech and word meaning (Vygotsky, 1962, in press) to Leont'ev's work on personality and affect (e.g., Leont'ev, 1978); is there something that links either of these to the work of Zaporozhets and V. P. Zinchenko on the development of perception, movement, and motor skills (Zaporozhets, Venger, Zinchenko, & Ruzskaia, 1967; Zaporozhets & Zinchenko, 1966; Zinchenko, 1981) or to the work of P. I. Zinchenko and Istomina on the development

of memory (Istomina, 1977; Zinchenko, 1981, 1984)? In more general terms, are there principles that simultaneously unite these various middle level theories and differentiate them from their counterparts generated within other theoretical paradigms, principles that might provide some direction to our efforts to extend the theories of the Vygotskian tradition to new problem domains?

Scholars working within this tradition have generally assumed that these various theories are indeed united by a common conceptual framework. In recent years, there have been several attempts to identify the principles which define it (e.g., Davydov & Radzikhovskii, 1985; Zinchenko, 1985; Wertsch, 1981, 1985). In my view, there is a consistency in perspective and problem which unites these diverse middle level theories and explanatory frameworks (Minick, 1985, in press). In fact, it could be argued that it is the general conceptual foundations of the Vygotskian paradigm rather than any particular middle level theory or explanatory framework that will ultimately make the most valuable contribution to our own efforts to develop theory and research on the relationships between mind and society.

Elsewhere, I have argued that one factor which unifies this research tradition is a unique perspective on the relationship between mind and activity (Minick, 1985). In this paper, I would like to take a brief look at the early history of the Vygotskian school in order to provide some of the historical background for this general line of argumentation.[1]

I will begin with a paper published by Vygotsky in 1925, a paper that played a pivotal role in the formation of the Vygotskian school (Vygotsky, 1982). It was the arguments that Vygotsky developed in this paper that initially brought him to the attention of Luria and Leont'ev. This led to a position for Vygotsky at the institute with which Luria and Leont'ev were affiliated in Moscow and to the initiation of their collaborative work. More significantly in the present context, it was also in this paper that Vygotsky first outlined several problems which were extremely important to the subsequent history of the Vygotskian tradition. In fact, I would argue that much of the subsequent development of theory and research within this tradition can best

be understood as a series of efforts to resolve the problems that Vygotsky outlined in this paper.

In the present context, I will consider only one of these problems, the problem of the relationship of mind and behavior.

Entitled "Consciousness as a problem of behavioral psychology," Vygotsky's 1925 paper represented a critique of the behaviorist theories of Pavlov, Bechterev, and others that dominated Soviet psychology in the 1920s (Vygotsky, 1982). Vygotsky applauded the behaviorists for making it clear that behavior is an important aspect of the object of psychological research. In his view, the more traditional psychology of consciousness had made a fundamental error in abstracting mind from behavior, in trying to investigate the flow of ideas, perceptions, and associations in conceptual isolation from the individual's activity or behavior. On the other hand, Vygotsky was convinced that the behaviorist psychologies had simply reinstantiated the dualism inherent in the subjective psychologies they criticized. He argued that the attempt to study behavior without reference to mind or consciousness was:

> Simply the dualism of subjective psychology - the attempt to study a purely abstracted mind - turned inside out. It is the other half of the same dualism. There, there was mind without behavior; here, behavior without mind. And both there and here 'mind' and 'behavior' understood as two different phenomena. (Vygotsky, 1982, p. 81)

For our present purposes, perhaps the most important aspect of this argument is reflected somewhat cryptically in the final sentence of the preceding statement. As Davydov and Radzikhovskii (1985, pp. 40-41) have pointed out, Vygotsky rejected not only the perspectives of the subjectivists and behaviorists but those of a third group of Soviet psychologists who were attempting to create a unified theoretical system based on a fusion of these traditions. What Vygotsky rejected in these efforts was not the goal of developing a unified science of mind and behavior, but the assumption that this could be accomplished by utilizing the systems of theoretical constructs that

had been developed by the subjectivists and behaviorists. In Vygotsky's view, these attempts to study mind and behavior in conceptual isolation from one another had produced systems of scientific constructs which fundamentally misrepresented the nature of both. He was convinced that the problem of developing a unified science of mind and behavior could not be solved by combining these inadequate systems of constructs in the formulation of a unified psychological theory. What was required was an effort to reconceptualize mind and behavior such that they could be understood as aspects of an integrated object of psychological research.

In the remainder of this paper, I will try to outline three "stages" in the early development of the Vygotskian school which can be understood at least in part as attempts to resolve this problem.

The first of these stages is reflected in the work carried out by Vygotsky and his colleagues between 1925 and 1930. During this period, their research focused on what were called the higher mental functions, cognitive processes such as voluntary memory, voluntary attention, and rational thought. As his point of departure, Vygotsky began with the notion that the stimulus-response unit provides the common foundation for psychological functioning in both animals and humans. He defined his immediate task as that of explaining how the higher or *voluntary* mental functions develop in humans on the foundation provided by the S-R unit.

Vygotsky's solution to this problem included two components. First, he argued that the higher mental functions are based on the mediation of behavior by sign systems, especially speech. Signs were represented as a special form of stimuli which function as "psychological tools," tools that are directed toward the mastery or control of *behavioral* processes in the same sense that ordinary tools are directed toward the control of nature (Vygotsky, 1981, p. 137). Vygotsky argued that it is by controlling these sign-stimuli that human beings gain voluntary control over their own behavior and that it is this that leads to the development of the "volitional" mental processes that he called the higher mental functions.

Second, to explain the emergence of these verbally mediated forms of behavior in both history and ontogenesis, Vygotsky looked to the initial function of speech as a mediator of social interaction. It is in behavior carried out cooperatively by two or more individuals and mediated by speech that signs first function as psychological tools in the mediation of human behavior. Following Janet, Vygotsky argued that the individual first participates in social activity where signs are used by one individual to influence the behavior of another and that it is only later that he or she begins to use these signs as a means of influencing his or her own behavior. Vygotsky believed that both the organization and the mediational means that allow dyads or larger groups to carry out cooperative social activities are taken over by the individual, and that it is this internalization or individuation of the means of activity involved in social interaction that leads to the development of mediated, voluntary, and historically developed mental functions.

It was with this general conceptual framework that Vygotsky first established the kinds of conceptual links between mind and behavior which he had called for in his 1925 paper. Here, social behavior was not represented as a system of conditions to which the mind adapts nor as one source of experience that combine with others to push cognitive development forward. Still less was social behavior portrayed as the manifestation of the individual's cognitive characteristics. To the contrary, rather than two variables with characteristics that interact or influence one another like balls on a billiard table, it becomes impossible within this framework to separate the organization and content of the higher mental functions from the organization and content of social behavior. Though primitive, this conceptual framework allowed Vygotsky to begin the analysis of the development of certain aspects of mind in connection with the analysis of the organization of social behavior.

By 1930, Vygotsky had abandoned the notion that the stimulus- response unit is the basic building block of mind and behavior. This move allowed him to begin to incorporate his extensive knowledge of semiotic theory into his thinking about the relationships between speech and thinking. Perhaps even more importantly, it allowed

him to expand his work beyond the domains of memory, attention, and thinking to deal with problems of personality, affect, perception, and imagination; it allowed him to begin to work toward a general theory of the history of mind, consciousness, and human behavior.

In his initial efforts (1930-1932) to deal with this broader and more complex range of psychological problems, however, Vygotsky failed to establish meaningful conceptual links between mind and behavior. Even in his work on the relationship between the development of speech and thought, Vygotsky was unable to link the development of semiotic means to the development of social behavior or social activity in a meaningful way.

What I would call the second stage in the effort of the Vygotskian school to create a conceptual bridge between mind and activity is reflected most clearly in the work Vygotsky carried out in the two years preceding his death in 1934. During this period, Vygotsky made several important conceptual moves that allowed him to reestablish links between mind and activity compatible with the more cognitivist framework that he was now working with. These moves were made in two overlapping phases. The first of these phases was associated with his efforts to reestablish the relationship between social interaction and cognitive development that had been so important in his earlier work. The second involved the extension of the ideas that he developed in this first phase to a broader range of problems and issues.

Two of the moves Vygotsky made during the first of these phases are of particular significance in the present context. First, Vygotsky outlined what he perceived as a new approach to the definition of constructs in psychological theory. As developed in his classic work on the relationships between thinking and speech in verbal thinking (Vygotsky, 1962, in press), Vygotsky argued that units of analysis in psychological theory must be defined such that they are at one and the same time units of mind and units of social interaction. Vygotsky rejected the use of scientific constructs such as "concept" or "language" in this context, arguing that they are derived by abstracting the semantic and grammatical aspects of speech from their concrete embodiment in social interaction. In contrast, Vygotsky insisted constructs such as

"word meaning" are the proper units of analysis for this research, since "word meaning" is at one and the same time a unit of abstraction or thinking (i.e., a unit of mind) and a unit of communication or social interaction (i.e., a unit of behavior) (Vygotsky, in press, p. 11).

Second, Vygotsky insisted that any genetic analysis in psychology (whether focused on the historical or ontogenetic plane) must begin with the analysis of the development of these kinds of analytic units in connection with the development of social interaction. Just as the physical or technical tool evolves in connection with the systems of productive activity it mediates, Vygotsky argued that psychological tools develop in connection with the development of social interaction. In his words, it is

> only when we learn to see the unity of abstraction and social interaction [that] we begin to understand the actual connection that exists between the child's cognitive development and his social development (in press, p. 11).

These two moves allowed Vygotsky to reestablish the kinds of conceptual links between mind and social interaction that had characterized his earlier theory, though within a much more sophisticated conceptual framework. As developed in this work, however, the implications of these ideas were limited primarily to the problem of the development of thinking in the context of social interaction. They did not begin to provide the foundation for the construction of a general theory of psychological development, for the development of the new framework for research on the development of mind, consciousness, and behavior that Vygotsky had called for in 1925. The next phase in the development of Vygotsky's theoretical perspectives represented his attempt to extend these conceptual moves to a broader domain of theoretical problems.

First, in several works completed just prior to his death in 1934, Vygotsky expanded the scope of his explanatory framework by shifting his focus from social interaction to the broader domain of socially or culturally organized activity. In this work, Vygotsky emphasized the fact that the activities which constitute the individual's life are

socially constituted and argued that the individual's involvement in these activities plays a central role in ontogenetic development.

In a paper on the relationship between the development of imagination and play that was written during this period, for example, Vygotsky did not even mention the role of the child's interaction with adults or peers (Vygotsky, 1978, ch. 7). Rather, he argued that "like all functions of consciousness, [imagination] emerges initially from action," that imagination develops in connection with the development of the form of socially defined activity that we call play (see: Vygotsky, 1978, p. 93). Recapitulating his earlier attempts to trace the development of word meaning in connection with the development of social interaction, Vygotsky attempted in this paper to trace the development of imagination in connection with the development of the socially and culturally constituted activity of play.

The central assumption reflected in this paper on imagination and play was outlined in a more general form in a series of lectures on child development that Vygotsky delivered in 1933 and 1934 (Vygotsky, 1984). Here, he argued: 1) that each stage in the child's development is characterized by modes of social activity that are of particular significance to that stage; and, 2) that the central task of developmental psychology is to clarify how the new psychological formations characteristic of the child at each stage arise and develop in connection with the way the child's life is organized by these modes of social activity.

Second, in this same series of lectures, Vygotsky attempted to extend his ideas concerning the proper approach to the definition of scientific constructs in psychology to this broader explanatory framework. For example, Vygotsky criticized traditional approaches to the study of the relationship between the child and the environment in psychological theory, noting that the two are generally represented as interacting forces with characteristics that can be defined in conceptual isolation from one another (1984, p. 380). In contrast, Vygotsky argued that for the purpose of constructing psychological theory the environment must be conceptualized in terms of "the child's relationship to the various aspects of his [objective] environment" (1984, p. 381). Implicit in the examples he used to illustrate this point was the notion that this relationship is defined not by the child's inner psychological state but by the child's developing activity. Thus, when the infant begins to crawl or talk, or when the child is introduced into the system of activities that constitute formal schooling, Vygotsky argued that there is a corresponding change in the child's relationship to the environment, a change in the environment as it exists psychologically for the child.

The development of activity theory by Vygotsky's students and colleagues in the late 1930s and early 1940s represents the third stage in the efforts of the Vygotskian school to create a unified science of mind and behavior. In important respects, the development of activity theory - as well as subsequent efforts to extend and refine it - reflects the effort of Vygotsky's students and colleagues to realize the implications of the conceptual moves that Vygotsky made in the last few years of his life.

There is a great deal that could be said in this connection, but in the present context I will limit myself to three points. First, the idea that psychological characteristics develop in connection with the systems of social actions and activities that constitute the individual's life provided the basic explanatory framework for activity theory. Second, Vygotsky's concern with identifying an analytic object that is simultaneously a unit of mind and a unit of social activity led to the identification of the goal-oriented action as the focus of psychological analysis in activity theory (Davydov & Radzikhovskii, 1985; Zinchenko, 1985). As a unit both of the systems of actions which constitute the individual's life and of those which constitute society, the goal-oriented action has provided those working within the framework of activity theory with a key conceptual link in the analysis of the relationships between the development of mind and the development of social behavior, or stated more broadly, in the analysis of the relationships between the individual's psychological development and the development of social systems. Finally, Vygotsky's approach to the definition of psychological constructs, as reflected in the 1933-1934 lectures, was extended to whole systems of theoretical constructs designed to maintain conceptual links between not only mind and activity, but between mind, activity, and the

external object world in which human activity occurs.

I am convinced that the efforts of the Vygotskian school to reconceptualize the relationship between mind and activity have profound and wide ranging implications for the psychological and social sciences, implications which even those trained within this paradigm are only beginning to appreciate fully. For the readers of this Newsletter, however, among the most important implications of this work is the foundation it provides for a reconceptualization of the relationship between the individual and the social system in which he or she lives and develops. In my view, the theoretical framework provided by these theories allows us to avoid:

1. The conceptual isolation of systems of social activity and psychological characteristics that is reflected in their treatment as independent and dependent variables in a great deal of contemporary research in developmental psychology, cross-cultural psychology, and psychological anthropology.

2. The reductionism inherent in the tendency of some cultural theorists to represent certain aspects of psychological development as the consequence of a simple transfer of cultural values and knowledge from one generation to the next.

3. The tendency of what I would call the "social behaviorists" to characterize the organization and the development of human social activities without reference to the mental processes of the individuals whose activities they are.

The theoretical framework provided by the Vygotskian school provides the rudiments of a research paradigm in which the historical evolution of social and cultural systems are intimately bound together with the development of human psychological characteristics. In my view, it provides the rudiments of the kind of research paradigm that is needed for the creation of a unified science of the systems of activity that constitute socio-cultural systems and of the mind that mediates these activities.

Notes

[1]For a more detailed outline of the early history of the Vygotskian school, see Minick, in press.

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Signs Have Two Sides

This land is your land. This land is my land.
From California, to the New York Island.
From the redwood forest, to the Gulf Stream waters.
This land was made for you and me.

As I went walking, I saw a sign there.
And on the sign it said, "No Trespassing."
But on the other side, it didn't say nothing.
That side was made for you and me.
Woody Guthrie

The Self-Regulatory Speech of Children in an Additive Bilingual Situation

Cynthia Klingler
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Does the bilingual child, by being freed from the constraints of one language system, and by acquiring more than one word for his referents, possess an advantage in the use of language as a tool of thinking? The impact of bilingualism upon cognitive development is of great import in the planning, implementation and assessment of bilingual programs in the U.S., where there are more than three million children who are speakers of a minority language (Diaz, 1983). The relationship between language and cognition is therefore worthy of examination.

The Role of Language in Cognitive Development

In order to assess the impact of the knowledge of more than one language on the cognitive development of the child, it seems necessary to examine the position of language in the sequence of cognitive development in humans. To some researchers of cognition, it appears evident that the use of language is what makes possible the growth and use of the higher functions of the intellect (Beaudichon, 1973). Language plays the leading or primary role. To others, such as Piaget, language assumes a secondary role. Piaget maintained that "intelligence precedes language, not only ontogenetically, but phylogenetically, as numerous experiments in the higher orders of monkeys have proven" (Piaget; 1968; Bronckart & Ventouras-Spycher, in Zivin, 1979). Piaget claimed that a relatively important part of the spontaneous speech of children under seven to eight years of age does not have a socialized function. He categorized speech for oneself as egocentric speech which could occur in situations where no one was present as well as in situations involving someone else. In young children this is part of the general egocentrism of the child and his/her inability to take the role of the other person. An example of this speech is the "parallel" speech of a

young child in a group who discusses his/her activity at great length as if everyone were really listening. This speech decreases, according to Piaget, until it disappears totally as a function of age and level of cognitive development.

In Piaget's view, the disappearance of egocentric speech is viewed as progress. The child has achieved socialization. In Piaget's terms, general cognitive development leads language; that is, cognitive development, while affected by language, imposes its own parameters.

A different view is proposed by Soviet psychologists, who believe that all language has social origins. They view mental activities as the internalization of social interactions with adults. According to Vygotsky's student, Luria (1961), by this process the child acquires not only new knowledge but new ways of behaving. The works of Vygotsky are based upon the concept that the most important mental activities evolve from the social development of the child, in the course of which new functional systems arise. A full understanding of the child's cognitive development requires an examination of the child's relations with the adult world, his/her experience with the world of nature, and the interaction of these varied lines of development.

Therefore, Vygotsky, in contrast to Piaget, attributed major importance to language in cognitive development. Language and thought arise from different sources; there exist pre-verbal thought and pre-intellectual language. These two streams flow from their sources and unite in the very young child. The private language observed in the child does not disappear but becomes progressively interiorized. Rather than being the less functional phenomenon proposed by Piaget, it has regulative abilities. Far from being a useless trait, it forms the premise for private speech, which for Vygotsky is linked to the processes of thought. The private language of the child is thought spoken out loud; gradually, it loses its audible characteristic. It occasionally reappears in an audible form on occasions of great cognitive effort in the adult, often when the adult is engaged in work in contexts which are frustrating. Private speech, when it is transformed into inner speech, becomes increasingly important in the planning of activities (Beaudichon, 1973).

Vygotsky (1962), a proponent, therefore, of the importance of the role of language in cognitive development, further proposed that bilingual children, because of their access to more than one language and one referent system, have the ability to separate the word from the referent (1962 in Cummins, 1976). The child is able to realize the arbitrary nature of his language system and is freed from the constraints of the phonemic aspect of the word. Thus there is bilingual advantage in the use of language as a facilitator and mediator. The presence of this ability has been corroborated by later investigators (Leopold, 1949, Ianco-Worrall, 1972, Ben-Zeev, 1977).

The present study explored the effects of a dual language system upon the role of language as a facilitator or mediator in children beginning to acquire this system. We examined private speech during the solution of problems requiring visual, perceptual and classification skills. The cognitive process examined in depth was the use of verbal self-regulation as a functional system in the planning and guiding of children's activities. It is important to note also that this study was accomplished in an additive bilingual situation. The additive model seeks to actively maintain and increase learning in the first language while introducing the child to learning in the second language. Thus both languages are seen as possessing equal value.

Methodology

The investigation took place in two private bilingual schools in a solidly middle class neighborhood of Mexico City, Mexico. Both of these schools maintain a curriculum in which both Spanish and English are actively used as languages of instruction. The schools are matched in terms of the number of students and socioeconomic level of students as well as location and tuition.

The population of the study was selected from the children 3 years, 11 months through 6 years, 11 months. There were 41 children from both schools: 14 6-year-olds (seven girls and seven boys), 15 5-year-olds (nine boys and six girls) and 12 4-year-olds (five boys and seven girls).

Subsequent to selection, the children were ranked by two measures of bilingual competence

(production and comprehension), IQ, mental age and metalinguistic awareness. The *Bilingual Syntax Measure* (Dulay, Burt & Hernandez-Chavez, 1973) and a story-retelling task (John-Steiner & Osterreich, 1975) were administered as production measures. For the latter, the children were asked to retell the story in both languages using picture cues. The Peabody Picture Vocabulary Test in both Spanish and English (Dunn, 1965; Wiener, et al., 1978) was used as a receptive measure with the PPVT in English ultimately considered the measure of English and the basis for grouping the children for comparison. The PPVT was used only as a comparative measure and not as any definitive measure of intelligence. The range is narrow because these children are beginning their bilingual experience. In addition, the vocabulary is restricted and may not tap all of the subjects' receptive vocabulary.

Cognitive ability was measured with the Pictorial Test of Intelligence (French, 1964). This measure consists of six subtests. The questions relate to pictures on large cards. Because of standardization difficulties, this test was used as a comparison measure only; it was not considered a measure of intellectual potential.

The schools are private schools; the children's IQ's are concentrated in the high average and superior range. Thus this population is rather restricted; this is a limitation of the study.

Tasks

The children were videotaped with an inconspicuous audio back-up. They performed four tasks; a simple categorization, a multidimensional sorting task, a block matching measure and a jigsaw puzzle called a "floor puzzle" because the fifteen pieces are oversized.

Task #1 required the sorting of 20 picture cards into separate stacks according to use. Four stacks were set out as a model. The child then had to assign each card to a stack. One stack, for example, has pictures of drawing implements such as pencils and crayons.

Task #2 required the sorting of 16 picture cards. These cards could be sorted according to category, function or association. There are four people dressed according to occupation, four vehicles, four animals and four shelters. A doctor, for example, could be placed with another person in the category of people, with the ambulance, as a function of occupation or with the hospital. The farmer could be placed with a cow, a barn or a person. The scoring was differential, according to the assigned placement. Assigning the picture to one of the four categories (person, building, vehicle, animal) earned the greatest number of points.

Task #3, Brainy Blocks, required placing of different shapes into an outline of an abstract design on a card. At the top of a card is a model which has the number of blocks of each shape needed for the design printed on that shape.

Task #4 required solving the jigsaw puzzle. The child was allowed to see the picture on the box.

Coding of Utterances

All of the children's utterances during the performance of the tasks were recorded. An utterance was defined as a speech segment separated by a three second pause from other speech segments. The utterances were examined in terms of number and quality of utterances, that is, counted and categorized. The utterances were categorized into nine categories: Task Irrelevant, Emotive, Social, Social-cognitive, Transitional, Labels and Descriptions, Direction and Planning, Task Relevant and Whispers.

The categories were defined as:
Task irrelevant - Commentary irrelevant to the task but not accompanied by any indication of sharing with another person.
Emotive - Exclamatory, expression emotion. "Wow."
Transitional - Indicating a transition between completing one task and beginning another. "I'm through."
Labels and Descriptions - Labeling of objects, counting, descriptions of actions. "One, two, three." "This is to cut, this is to draw." "This is a farmer."
Task Relevant - Relevant to task but does not appear to fit into other categories. (This category eventually became superfluous).

Whispers - Inaudible, lacking voice content but characterized by lip movements.

Direction and Planning - Giving some indication of planning ahead. "This red car will go right here."

Social - Addressed to examiner or accompanied by gazes. For purposes of analyses, Social was counted in two ways: as Social Cognitive or as Social according to the nature of the contents. Social Cognitive has not been mentioned in the literature but was found by this investigator and others (John-Steiner, 1985) to be of major importance. An example of Social Cognitive would be: "This policeman goes with this police car, doesn't he?" Social Cognitive was considered Social for purposes of the quantitative analyses but is discussed separately as part of the qualitative analyses.

Task Irrelevant, Emotive, and Social were considered of lesser value for self-regulation since they did not relate to the task. Transitional, Labels and Descriptions, Direction and Planning and Whispers were considered task relevant or, in the case of Whispers, a later stage of development.

Results

The principle question of the research was whether exposure to a second language during the pre-school years affects the development of verbal self-regulation as described in previous research.

The following findings were hypothesized, based upon previous research and theoretical analyses:

1. These children would use more task relevant than task irrelevant speech.

2. There will be a relationship between the degree of bilingualism and the type of private speech. One of the variables investigated is the quality and functional diversity of private speech utterances. It is expected that bilingualism will contribute to this diversity.

3. There will be a curvilinear relationship between mental age and the number of self-regulating utterances as suggested by Vygotsky (1962) and mentioned in previous research with monolingual children. Whispers will increase linearly. There will be an interaction of whispers and task relevant speech.

In order to consider Hypothesis 1, whether bilingualism would contribute to a more effective reliance on task relevant speech, regardless of mental age, the data were organized into the two groups according to the character of the utterances (See above). The categories of Task Irrelevant, Emotive, and Social (including Social Cognitive) were labeled C_1. Transitional, Labels and Descriptions, Direction and Planning, Task Relevant and Whispers were labeled C_2. These labels were used for counting the number of responses. The utterances were further organized so that the number of range of functions could be counted. For example, all kinds of speech included in C_1 (Task Irrelevant, Emotive and Social) were labeled F_{1-3}, similarly the different forms of C_2, like Transitional, Label and Descriptions, Direction and Planning, Social Cognitive, Task Relevant and Whispers were labeled F_{4-9}.

According to the theoretical analyses, both bilingualism and age should influence the use of private speech for task solving purposes. In order to determine the effects of these variables, an analysis of covariance with repeated measures, covarying mental age and the Spanish PPVT score, was performed. The calculation showed a clear main effect for speech across all tasks (C_2, task relevant utterances), $F (1,37) = 14.26$, p< .001.

While all of the children in this study used a greater number of task relevant than irrelevant utterances, the more bilingual children were proficient in the use of functional categories. In order to examine the effects of varying degrees of bilingualism, the two groups of more or less proficient speakers according to the English PPVT (see above) were examined. The expectation was that the children with a higher degree of bilingual proficiency would make greater use of self-regulatory utterances. Two analyses of covariance in a repeated measure design were performed on

this organized data. Again, mental age and the scores on the Spanish PPVT were covaried. Bilingualism was compared with numbers of utterances and the range of functional categories across tasks. An analysis of covariance for speech (C_1 and C_2) with bilingualism shows no overall effect of bilingualism with the number of utterances nor a bilingualism X speech interaction F $(1,37)$ = 1.73, p< .196.

When bilingualism is analyzed with the number of functions, however, using an analysis of variance with mental age and Spanish PPVT as covariates, there is a significant effect of bilingualism, F $(1,36)$ = 4.1, p< .05 and a bilingualism X function (F_n) interaction, F (1.37) = 5.12, p< .03. Bilingual proficiency affects the range of functions - that is, the more bilingual children rely on a greater number of functions than those who are beginning to learn another language.

In order to answer Hypothesis 3, whether the course of development in these children follows that of previous findings with monolingual children, the total number of utterances per individual, the number of utterances per task, and the number of utterances in total across tasks were computed. The investigator also calculated the percentages of utterances in each category to the total number of utterances. The children were divided into four groups according to mental age. The mean mental age in months for group 1 is 57.3, 75.1 for group 2, 86.2 for group 3 and 101 months for group 4.

In addition, the investigator plotted the number of utterances for each of the four categories: task relevant speech (Labels and Descriptions, Direction and Planning, Transitional and Task Relevant), task irrelevant speech (Task Irrelevant and Emotive), Social and Whispers in each of the four mental age groups. The whispers increase linearly as a function of increase in mental age. Figure 1 (next page) shows a curvilinear relationship between mental age and speech across the four tasks and the four mental age groups. Figure 1a demonstrates an interaction between whispers and task relevant speech. These two graphs confirm that these children follow the course of development proposed by Vygotsky (1962) that is in agreement with that described in the private speech literature.

To summarize this data, we may conclude:

1. Exposure to a second language not only does not have a negative effect but has a positive effect on verbal self-regulation, a phase of cognitive development.

2. It appears that the best way to measure the quality of self-regulation is not to look at the number of utterances but to look at the number of functional categories used by the children (Diaz, 1983). In other words, a child who says, "One, two, three, this red one goes here, this is a fire engine," is using language in a more diverse manner than a child who states, "This one here, this one here, this one here."

A Summary of the Qualitative Analyses

Although traditionally, utterances accompanied by eye contact were characterized as social in nature, in this study a significant number of social utterances appeared to have a cognitive content. Coding separately for Social Cognitive utterances made a difference in the accounts for 19% of the participants in Classification 1, 34% of the participants in Classification 2, 34% of the participants in Brainy Blocks, and 19% for the puzzle. Only Whispers accounted for the participation of as many children (See Figure 2). When examined for content, this category, by definition, contained only self-regulatory utterances. Social Cognitive, when considered non-regulatory, along with Task Irrelevant, Emotive and Social, accounted for 21 of 25 non-regulatory utterances of Classification 1, 21 of 24 of Classification 2, 26 of 31 in Brainy Blocks and 15 of 28 on the puzzle. If the category of Social Cognitive were removed from the Social or non-task relevant category, there would be few utterances remaining. This category would be "washed out" if the utterances were placed within the appropriate self-regulatory categories. Thus, these children are using more task relevant than non-relevant utterances across all tasks. Traditional distinctions may have to be rethought because these types of utterances may be commonplace for children raised in this sort of cognitive environment.

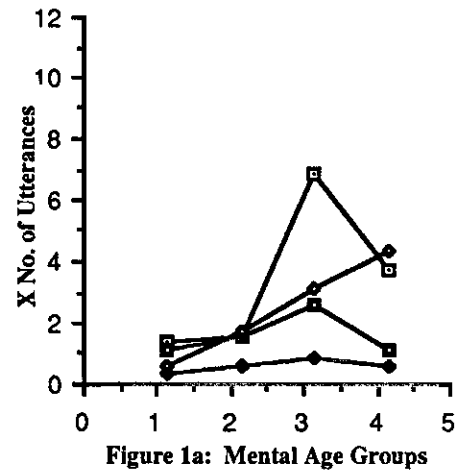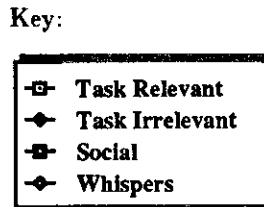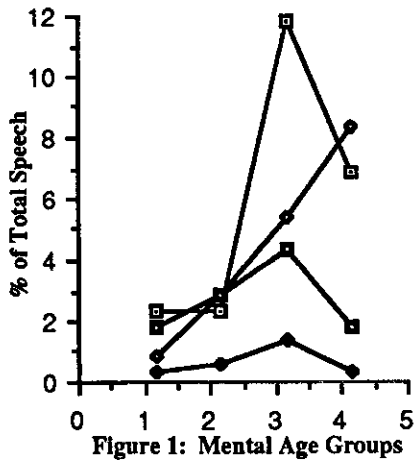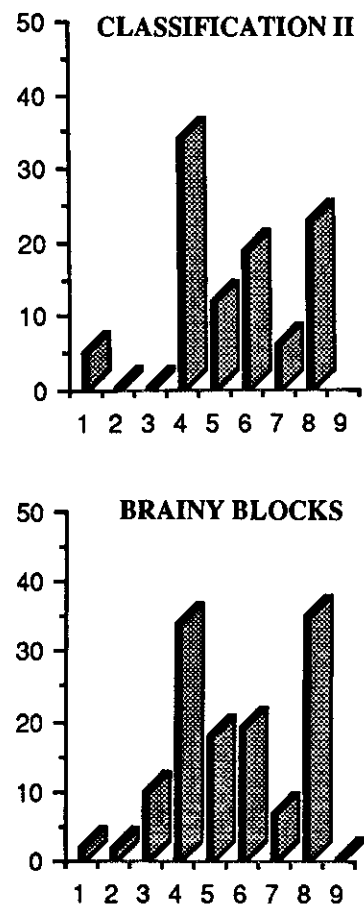# FIGURE 1 AND 1a: SPEECH BY MENTAL AGE

Key:
- Task Relevant
- Task Irrelevant
- Social
- Whispers

Figure 1: Mental Age Groups

Figure 1a: Mental Age Groups

FIGURE 2: KINDS OF UTTERANCES USED IN 4 TASKS

CLASSIFICATION I

CLASSIFICATION II

PUZZLES

BRAINY BLOCKS

PERCENTAGE OF PARTICIPANTS WHO MADE UTTERANCES
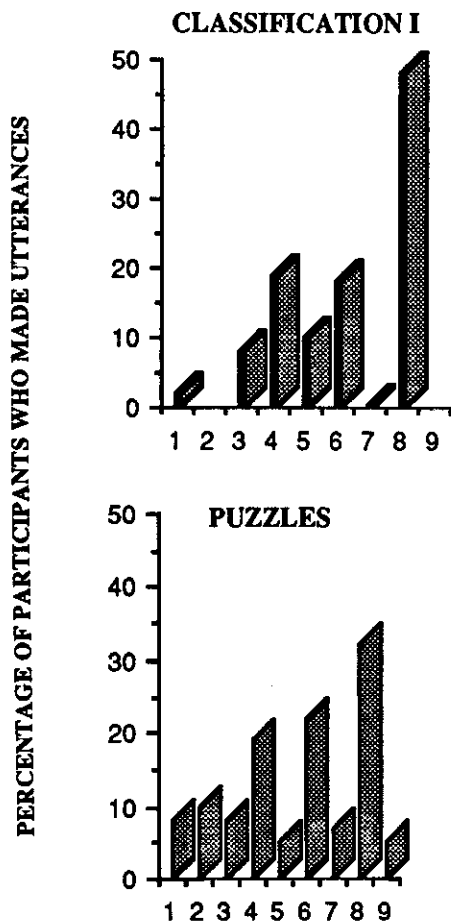
CATEGORIES

Key:
1. Task Irrelevant	4. Social Cognitive	7. Transitional
2. Emotional	5. Labels and Descriptions	8. Whispers
3. Social	6. Direction and Planning	9. Task Relevant

Discussion

This analysis of private speech utterances shows an increase in cognitive flexibility with increasing bilingual ability among young children. Their use of diverse functional categories of speech for self-regulation increased with increasing knowledge of the second language. In addition, speech previously categorized in the literature as Social (determined by gazes or remarks addressed to another) actually was task relevant although the remarks were addressed to an adult. We hypothesize that this stage, labeled "Social Cognitive" actually is a transitional stage related to the gradual interiorization or the move from the interpsychological to the intrapsychological plane proposed by Vygotsky. Although the child is not being actively instruced by the adult, he/she may be looking at the adult for reassurance, but he/she has begun to interiorize so that the speech is on its way to becoming covert.

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When Can We Believe Our Data on Children? The Importance of Being There

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> Since both our children and our profession are at stake, the study of learning is much too important to be left in the hands of persons who rarely come in contact with children. (Harste, Woodward, & Burke, 1984)

Research often results in unexpected findings and perhaps the greatest value and challenge of research are the unanticipated outcomes. At times, more important questions than those which initially stimulated a study emerge. If researchers remain close to their "subjects" during the research process, they may find themselves in the enviable position of observing behaviors other than those targeted and recorded as numerical data. These behaviors can provide insight into what occurred and permit tentative and heuristic explanations of anomalous results. Moreover, "being there" when children are tested may inform us about the degree of trust we should have in our numbers and may hold in check potentially injurious educational decisions (Wodtke, Harper, Schommer, & Brunelli, 1985).

This report concerns low-income, part-Hawaiian children in the first and third grades in special research and development classes at the Kamehameha Schools, Honolulu, who participated in a free recall memory experiment.[1] Although certain quantitative performance data are presented, the focus of this report is my observation of the children during testing. Minimal individual differences in behavior were evident and the behaviors were in sharp contrast to those exhibited in the same testing situation by middle-class, multi-ethnic children of comparable age and grade levels attending a parochial school in Honolulu.[2] The critical premise of this report is that the part-Hawaiian children interpreted or reacted to the testing situation in a way that adversely affected performance on a free recall memory task. Furthermore, the observations raised the difficult and classic problem of inferring competence from overt quantitative performance. The recorded data, in addition to the informal observations, indicated that something different was occurring during testing of the part-Hawaiian children than during testing of the other children from the parochial school. Moreover, the difference was unusual in that it has not been noted in published reports of free recall investigations.

The Task and Materials

The study employed a free recall task, a basic tool for investigating the development of memory and mnemonic organization processes. The task involved successive presentations of five randomly ordered lists of the same "concrete" nouns potentially categorizable into a priori, child-determined categories. After each auditory presentation of the 15 nouns (three from each of five categories), recall was free. That is, the children could recall the items in any order they wished. After each of the five presentation trials, recall was immediate. Each child's recall responses were recorded in the order given.

The five categories were selected from among 14 categories presented in a category item production task to low-income, part-Hawaiian children enrolled in the first and third grades of the previous school year. The categories (animal, fruit, furniture, clothes, and tools) selected for the free recall study were those easily understood by that group of children (i.e., no explanations or

descriptions were asked for or required) and had elicited a large number of category items from all children at both grade levels. (See Brandt, in press.) The items composing the recall lists were selected from among the elicited, age-appropriate item responses to each category label. This procedure ensured that: (a) the items were considered to be members of the categories by the children at each age level; and (b) the items were known and familiar to each age group.

Task Demands

Past free recall research has established that the greater the categorical organization of the list during recall, the greater the recall and that recall increases across trials. Categorical organization is considered a sequential function of two processes - detection or discovery of the inherent categorizable structure of list items followed by effective use of this structure during recall. Deficiencies in either of these two processes would lead to poor categorical clustering and consequently low recall scores.

A necessary prior condition to either of these two processes is attention to the list items. In order to transfer information into short term memory and thus have it available for retrieval during recall, an active attentional factor is involved (Norman, 1976). That is, conscious selective attention strategies are required which shut out non-task stimuli and direct efforts toward task-related stimuli.

In this memory study, the testing setting presented minimal external distractors to the task at hand and far less than in the testing setting for the middle-class parochial school children. For the part-Hawaiian children, the testing room had bare walls, drawn curtains, one table and two chairs, and a video tape monitor pushed into one corner. In contrast, the parochial school children were tested in a visually busy, cluttered school library office and were literally surrounded by potential distractions. Every child in both samples was tested individually.

It was assumed that the part-Hawaiian students would be "test-wise" and would have fairly well developed test-taking strategies compared to the parochial school students. The children in these research-development classrooms receive

numerous tests--from standardized achievement and ability tests to criterion referenced tests--as well as experimental tasks developed by the school's researchers. It was also assumed that these children viewed testing by adults as part of their usual school experience in that leaving their classrooms with an adult for testing is a familiar and frequent experience. Little of this type of testing experience occurred in the parochial school. For both samples, testing was scheduled so as not to impinge on the children's free time, i.e., no child was tested during recess, lunch or snack break, or special classroom events (e.g., birthday or holiday celebrations). No child was tested in the afternoon when fatigue factors would more likely be present.

Thus the testing setting, testing schedule, school experience with testing, and the test materials, (i.e., categories and items that were known, familiar, and age-appropriate) should have optimized performance for the part-Hawaiian children.

Behavioral Observations

Classroom Pick-Up. When picked up for testing from the research development classrooms, the children as a group appeared eager to have their turn. When they saw the experimenter (E), most raised their hands eagerly, often saying "Me, me!" or "My turn." All but one boy, who was not tested, willingly accompanied E to the testing room, chatting most of the way about school, family, etc. Thus there appeared to be little reluctance or apprehension. The contrast with the other group was striking: The parochial school children never called out and only spoke to E in response to direct questions during the walk between their classroom and the library testing office.

Stimuli Presentation. After the child was seated in the chair across from E and the instructions were given, the tape recorder was turned on for stimuli presentation. The strong impression many of the part-Hawaiian children created was that they did not carefully attend to the stimuli: They did not become motorically still; they did not physically block out or restrict visual stimuli, i.e., close eyes or cover eyes with hands, or look down, as all children in the parochial school sample did. The part-Hawaiian children, with some exceptions, would watch E, lean over the table to see the recording sheets on E's lap, move or adjust their chairs, pick at or adjust their clothing, look around the room, etc., and a few actually talked during the stimuli presentation. Unfortunately, E did not note the exceptions.

Recall. During free recall, the part-Hawaiian children were quick to say, "I don't know anymore." Although prompting was not an initial part of the design, E began to encourage these children on trial 3 (e.g., "Try real hard and see if you can remember any more words;" "I bet you can remember more words this time. Listen real hard to the words. Ready?") Although duration of each trial presentation and recall was quite short (about two minutes maximum), lasting through the total task (five trials and five recall sessions, total of ten minutes) seemed difficult for the part-Hawaiian children. Many were ready to stop by the third trial indicating that they did not particularly want to continue. Again, E modified the set procedures to verbally encourage completion and performance. At no time did any children in the parochial sample express in any discernible way that they did not want to complete the task. Rather, the parochial school children often asked about the number of words they had remembered; kept track on their fingers how many words they recalled; and often stated (more to themselves than to E) how many more words they needed in order to remember all the words on the list. They appeared task or goal oriented and expressed concern about how well they had done. No such concern was expressed by the part-Hawaiian children.

Table 1			
Mean Recall Scores (Average across 5 trials)			
School		Grade	
		1st	3rd
R. & D.	Range	4.6 to 10.6	5.2 to 11.2
	Median	6.8	8.2
Par.	Range	5.6 to 12.0	6.4 to 12.4
	Median	8.0	9.4

Key: R. & D. = Research and Development; Par. = Parochial

Quantitative Data

• The differences between first and third graders was constant and equivalent across schools. The part-Hawaiian first graders performed at the lowest level of all the groups and part-Hawaiian third graders performed at an equivalent level to the parochial school's first graders. Thus difference between the samples in recall was evident by first grade and no "catch-up" phenomenon occurred by third grade. (See Table 1.)

• There were four cases (8%) of the part-Hawaiian children) in which there was no increase in amount recalled between trial 1 and trial 5. For the parochial school children, this never occurred.

• For the part-Hawaiian children 43% obtained recall means of less than half the items; 25% was the corresponding percentage for the private school sample.

• For the part-Hawaiian children, the greatest increase across trials for both grades occurred from trial 3 to 4 which corresponded with E's encouragement and prompting. This was not the case for the parochial school children whose greatest increase occurred in the earlier trials and the rate of increase was fairly constant from trial to trial. None of the parochial school children were prompted.

Possible Explanatory Factors and Implications

What may account for the differences in performance and testing behaviors? I propose that the theoretical construct of situation definition as elucidated by Wertsch (1984) may help make sense of what happened. Wertsch, a proponent and interpreter of the Soviet Vygotskian framework, wrote:

> A situation definition is the way in which a setting or context is represented--that is, defined--by those who are operating in that setting. I use the term definition because I want to emphasize that humans actively create a representation of a situation; they are not the passive recipients of

this representation...it is essential to recognize that, even though the adult and child are functioning in the same spatiotemporal context, they often understand this context in such different ways that they are not really doing the same task (p. 8-9).

It is possible that most of the part-Hawaiian children interpreted the setting and recall task quite differently from both E and the parochial school children who, in turn, had definitions with more overlapping features. If this is the case, the question becomes, "What sociocultural factors may have contributed to different representations of the situation?"

Schooling and home background differences between the part-Hawaiian and the parochial school children are the likely sociocultural factors.

• The Research and Development school program with its emphasis on co-narration style or overlapping, mutual, verbal participation may not encourage or support individual language listening skill development and use.[3] The parochial school appears to emphasize acquisition of information through individual attentive listening skills where only one person speaking and others listening is the norm. Good performance on the free recall task clearly requires well developed, deliberate language listening strategies. The behavioral observations of the part-Hawaiian children suggest that either these strategies were not applied spontaneously to the task (appropriate situational cues for application were inadequate or absent) or these listening strategies were not present in the children's repertoire.

• The Research and Development classrooms emphasize the group; children are permitted to help one another with classroom work. Completion of a task is driven by peer support and affiliation.[4] The parochial school classroom emphasizes independent work and places greater value on individual task completion and individual achievement. The free recall task, despite its use of familiar and meaningful words, was arbitrary or unconnected to a social or practical purpose for performing well. For the part-Hawaiian children, expending effort on this difficult task seemed to occur when E established social-personal contact

with the children *during* the testing. For the private school children, sufficient motivation appeared to reside in the task itself--an academic intellectual challenge. Thus differences in motivational styles alone (one being more consonant than the other with the standard free recall procedures) may have been sufficient to produce the differences between these two groups of children in testing behaviors and performance levels. This interpretation suggests that performance in most standard test-taking situations would inadequately reflect the underlying competence of the Hawaiian children.

• For the part-Hawaiian children, language is not the overriding means of instruction in the home or an overwhelming means of acquiring generalizable rules or principles (Gallimore, Boggs, & Jordan, 1974; Joesting, 1980; Jordan, 1976). The children's home experiences appear to focus attention more on non-verbal messages (e.g., voice intonation, facial expressions, etc.) and verbal expressions of personal intent. The middle-class background of the parochial school children suggests that language is used a great deal not only to communicate demands and intentions but also to "play with," to describe, explain, and analyze, and used as a tool in problem solving. Differences in experiences regarding the use of language--one group seeming to have more experience with "disembodied" or meta-language use (Hymes, 1972) than the other-- may have resulted in performance differentials favoring the parochial school children on this functionally irrelevant language memory task.

Performance on this free recall task in inconsequential *per se*. However, effective use and demonstration of language memory skills and deliberate language listening skills are requirements for successful performance in numerous situations which the part-Hawaiian children will encounter in the future, particularly successful functioning in the traditional public school classroom. It would be an important contribution with practical applications to examine variations in performance on this task (or one with similar task demands) as a function of systematic changes in task materials (e.g., recall words embedded in a story context), task context (e.g., provide affiliative motivation for attending to the recall words) and prior training (e.g., in behavioral listening strategies and/or

in individual language listening experiences). The part-Hawaiian children would be expected to perform better in certain conditions than in others. Such a research plan would provide valuable information concerning task specific factors that interact with the sociocultural background of the child to increase performance.

Conclusion

If little or no attention is given to how a young child approaches a task or test, how a young child reacts during such a session, or how the task may be interpreted by the child, then our faith in the numbers collected and our belief in statistical significance should be shaken. Until we begin to view the slice of human behavior we choose to look at as cut from whole cloth, our goal of understanding ourselves may never be achieved. Perhaps the following aphorism by J. R. Tolkien may guide us:

> He that breaks a thing to find out what it is
> has left the path of wisdom.

Notes

[1]Kamehameha Early Education Project staff randomly selected the 51 part-Hawaiian participants from the population of low-income families residing in a circumscribed urban area of Honolulu. For details of the selection procedure, see Mays, Boggs, Tharp, & Gallimore, 1972-1973; 1973-1974. All the part-Hawaiian children scored in the average to slightly above average on the WPPSI.

[2]The 60 multi-ethnic parochial school participants (10% of whom were part-Hawaiian) were randomly selected from among the 120 children in the first and third grade classrooms at the urban parochial school in Honolulu. No one ethnic group predominated. Occupational status of their parents was used to determine their middle-class status. Their school achievement and ability test scores indicated average to above average skills.

[3]For a more complete description of Hawaiian talk story and peer affiliation, see Watson-Gegeo & Boggs, 1977.

[4]For how talk story style is incorporated in the classroom lessons for these Hawaiian children see Jordan, 1981 and Jordan, D'Amato, & Joesting, 1981.

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Mixed Ability Grouping for Reading Instruction: An Alternative to Traditional Practice

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The standard approach to teaching reading in the primary grades involves grouping children according to reading skills performance and applying instruction appropriate to each ability group. For five years of teaching first, second, and third grades in middle-class, suburban public schools, I followed this grouping procedure. No matter what techniques, time, and materials I used, however, the gap between the performance of the low group and that of the high group widened over time. As the low group struggled with the mechanics of decoding, the fast group picked up skills effortlessly by comparison and developed great enthusiasm for reading. This procedure obviously substantiated my initial judgements of each child's ability. Ability groups fulfilled my prophecy of children's reading abilities, but they clearly failed to serve the needs of those who have difficulty learning to read. It was clear to me that this practice deserves serious reconsideration.

Grouping by ability for reading instruction is a well established and often unquestioned practice in American schools (Esposito, 1973; Barr, 1975; Wilson & Schmits, 1978; Kulik & Kulik, 1982; Hiebert, 1983). Although teachers frequently presume ability grouping to be an effective procedure (Wilson & Schmits, 1978), decades of research have failed to support this presumption. In fact, current reviews suggest negative effects of ability grouping not only on academic achievement but also on socio-emotional development and on the effective integration of different socio-economic groups in schools (Esposito, 1973; Wilson & Schmits, 1978).

Group reading instruction is a dynamic and complex process which involves a constellation of factors. There is a growing body of literature indicating that the experience of children in different ability groups in the same classroom varies significantly in regard to many of these factors (Hiebert, 1983). Allington (1980), with a most

obvious example, demonstrates that readers in the low ability group spend less time reading than those in other groups. This differential treatment of groups is usually not a product of instructional design and is seldom even acknowledged by the teacher. The results are obvious though often overlooked. In my classroom I informally observed that the discrepancy between good and poor readers in ability groups increases as time is spent in school. This fact is well supported (Hiebert, 1983).

Three years ago I banished the concept of ability reading groups from my first grade classroom. The alternative program involves heterogeneous reading groups. This approach to classroom organization has positive consequences for the academic achievement and the emotional development of all children as well as for the effective integration of different groups within the classroom. The children in my first grades had attended a skills-oriented kindergarten program in which they were exposed to practice with consonant and vowel sounds and to sounding out simple words. In each group of 25 students, there were one or two early readers and three to five children who demonstrated difficulty in visual and auditory discrimination in the kindergarten curriculum. The readiness level of the group was high, and the mean IQ, as measured by the Otis-Lennon Mental Ability Test in March of each year, was consistently around 110. Given this above average profile of my students, the specifics of the program outlined below will not directly apply to all first grades but will illustrate my alternative to the organization of reading instruction.

The core of my reading program is a phonics oriented basal, The Economy Company's *Keys to Independence in Reading*. The program presents the 10 long and short vowel sounds at the pre-primer level and then presents consonants, blends, digraphs, dipthongs, and special sounds, gradually giving children the tools to decode more complex words. I supplement this with a wide array of workbooks, readers, and teacher made materials. I begin the year first making sure that each child knows consonant sounds and then begin teaching each child 1) to recognize the vowels, 2) to use two simple rules for marking vowels, and 3) to know the long and short vowel sounds. I try to accomplish this through a variety of high motivation games and activities. I focus my time and attention on those children who have the most difficulty.

By the second or third week of school, I group students randomly into four groups, and we use the basal pre-primer which reviews the consonant and vowel sounds and introduces the concept of sounding out words. At the same time, I start each child working individually on materials appropriate to his own needs. Those who need to work on letter sounds continue those types of games and activities. Those who already read begin working on comprehension directed workbooks and materials. Again I concentrate my time on those who need work on letter-sound recognition. My goal is to bring each member of the class to the point of knowing letter sounds and at least beginning to sound out simple words.

Six weeks into the year, this goal is reached, although there are three or four children for whom letter-sound recognition is still a struggle. At this point I regroup the children into four carefully mixed groups. I purposefully place one struggler and at least one of the better readers in each of the groups. While the children continue working independently on a variety of individualized materials, we begin working on phonics rules at first and later on comprehension strategies in the mixed groups. For some of the students in each group the work is easy and obvious. For others it is new and a continuing struggle. I continue to provide the strugglers with additional time and assistance to assure that they master each essential skill and keep pace with group activities.

As these reading groups begin working together, I focus on two things. First, I try to insure that the struggling readers are successful as they perform in front of their peers. Initially this means asking them to do only those things which they can do with confidence. This serves to assure both themselves and the more self-confident students that they can succeed in school too. Secondly, I set high standards for the patience and tolerance shown by all members of each group. I emphasize that our group time is an opportunity to show support and to help others. It is essential that each child's fear of making mistakes in front of others is minimized. Anyone who expresses

intolerance in the group is asked to leave until they can participate in a more positive way.

During the year each group works through the basal materials at roughly the same pace. The pace varies with the difficulty of the curriculum. In other words, we spend as long as it takes all members of the group to grasp a particular new skill or concept. This enables me to reshuffle the groups every couple of months. In each group I place children of different abilities with an eye toward grouping students who will work well together. Forming new reading groups periodically helps keep group time fresh and interesting and gives each child an opportunity to feel a part of the larger community of readers made up of the entire class.

This program appears to have many positive effects on young readers. First, by placing struggling readers next to competent readers, mixed ability grouping provides those children, for whom reading is a source of frustration, with models of what effective reading looks like and sounds like. This kind of modeling is an important factor contributing to developing reading skills, and it is traditionally denied to those children who are low grouped.

Second, competition within the context of tolerant and supportive groups provides motivation important for many children. The fluidity of frequently reorganized, mixed ability groups exposes each child both to those who seem to read a little bit better and to those who don't read as well. As children constantly compare themselves and their own abilities with others, they orient themselves to those they want to catch up to and to those whom they want to keep ahead of. In a very mild and subtle way, the reading group becomes a forum for showing to the group what one is capable of doing. If handled carefully, such self-comparison can provide the reason to concentrate and to perform well on group activities. By contrast, the traditional ability groups undercut any sense of open ended competition and convey to the children that their rate of reading progress is somehow predetermined and limited by the pace of a particular group. Students in the fast group know they are the chosen few although they often learn that it doesn't really matter how hard they try. Far more discouraged, those in the low group

may feel locked into falling farther and farther behind the rest of the class no matter what they do individually (Esposito, 1973; Wilson & Schmits, 1978).

Third, having children of various abilities working closely together demands a great deal of patience and tolerance on everyone's part. Although this may be difficult for some students at first, it gradually becomes the accepted ethic for the room and carries over to other times and other activities. This ethic also gives children the message that everyone is to be treated equally and with respect. I am convinced that this has a powerful effect on a classroom. Children watch the teacher closely for cues about how the teacher will respond to errors, successes, misbehaviors, etc. Each child's evaluation of the teacher's reactions largely determines the behavioral choices the child will make and the degree of comfort or stress he will feel. The atmosphere of tolerance and equality fostered by mixed ability grouping gives all children the message that even those children who cannot do well at reading will be treated fairly, and therefore it is a safe environment in which to work and to try difficult things.

These factors--modeling, intra-group comparison, and the ethic of tolerance and respect--all contribute to conditions which encourage children to learn to read. Thus, the mixed ability group creates greater incentives to put forth effort and to perform well on reading activities.

The most common criticism of mixed ability grouping is a concern for the "fast" readers. Won't they be held back or won't they be bored? First, it is important to provide all students with independent material suitable to their individual needs and abilities. These materials include games, worksheets, workbooks, reading labs, and books to take home. Each child has a time in the classroom to work independently on these and immediate feedback is provided to those who need it. For some, this supplements group activities. For others, it enables them to move ahead through more challenging material.

Secondly, heterogeneous grouping provides a healthier environment for these high achievers. To be distinguished by being placed in the fast group by the teacher creates a subtle separation from

other members of the class and suggests that these children are special no matter what they do. In heterogeneous grouping, however, these students are put on an equal footing with every child in the class. It is left to them to prove themselves through their daily performance. Members of the class depend more on what they do to evaluate themselves and each other than on what group they are in. Even for the child who's performance always pleases the teacher, it is reassuring and encouraging that others in the group are treated with respect and tolerance.

Third, the trend to segregate high achieving children in special classes and programs seems to be more a condemnation of what goes on in many classrooms than an enlightened educational policy. Our goal should be to meet the educational needs of all individuals within the classroom. Not only do gifted children have a great deal to offer other members of the class, but interaction in an effective educational setting with a full range of other children can provide the most potent grist for creative and innovative thought. This has been demonstrated effectively by Paley (1981). Finally, even accepting the argument that fast students will be held back, the teacher is left with a clear choice: either group by ability to give high achievers free rein while discouraging slow readers or group by mixed abilities to encourage the slow readers while high achievers review material which may come easily to them. For me the choice is clear.

By placing learning to read in the context of social dynamics and acknowledging the significance of modeling, competition and group ethics, this reading program focuses on the child rather than on the mechanical elements of word decoding. Ability groups follow the sequence of skills which supposedly add up to effective reading. Children are grouped according to their mastery of these skills and they are taught the skills they need to acquire. Thus the low group may be instructed on short vowel sounds while the fast group works on recalling the sequence of events in a story they have read. The purpose of reading--to reach the meaning communicated by the written words--is all too easily lost amidst the proverbial trees of the forest, especially for those in the low group. They see only other children struggling with stray sounds and nonsense groups of words which appear to have no connection with social communication.

Heterogeneous groups, on the other hand, work on the same skills in the same material, but these elements are always subordinate to the goal of reading more effectively. Children are never locked into the sequence since they can constantly observe a variety of reading performance. Not only does mixed ability grouping provide a healthier, more encouraging instructional environment for all children, but it also encourages a more effective and realistic view of the reading process for teachers by focusing the instruction on individuals rather than on arbitrarily maintained ability groups.

The success I've had with heterogeneous reading groups suggests that this aspect of reading instruction demands further attention. Consistent with the professional literature, this success questions whether there is any value to ability based grouping other than that of tradition and of teacher convenience. Finally, the promise of sound alternatives begs additional research to systematically describe various ways of organizing reading instruction and demands that interested teachers, administrators and reading professionals confront the self-fulfilling prophecy of ability groups.

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