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ABSTRACT

This monograph discusses the state of the art in child second language acquisition research. It is of particular interest to teachers, administrators, and others concerned with educating children whose first language is not English. The first chapter deals with preschool second language acquisition. It examines processes of acquiring the sound system, the meaning system, the rules for language use, the developmental stages in acquisition, and the differences between first and second language learning in preschool children. Chapter 2 treats second language acquisition in the classroom. It examines the nature of the school experience and how the language of the school differs from language used outside the classroom. Bilingual education programs in Canada and in the United States are compared and various types of U.S. bilingual programs are discussed in order to specify the various instructional and interactional features that differentiate bilingual classrooms. The third chapter describes ways in which researchers have investigated second language acquisition. The major research areas are studies of the second language-learning process, the question of language assessment, and research on the effectiveness of bilingual education. Each chapter contains suggestions for further reading.
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LANGUAGE IN EDUCATION:
Theory and Practice

47

Barry McLaughlin

**Children's
Second
Language
Learning**

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Sophia Behrens, Editor

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Preface

The purpose of this monograph is to discuss the "state of the art" in child second language acquisition research. This, of course, is a rather hazardous undertaking in a field that is constantly changing, where one day's facts become the next day's fictions. It is no exaggeration to say that there are very few areas in the social sciences where developments have progressed as rapidly as they have in the area of second language research. What did not exist as a field ten years ago is now an interdisciplinary enterprise challenging the energies of increasing numbers of linguists, psycholinguists, educators, and practitioners.

The last two groups--educators and practitioners--remind their colleagues that research on child second language acquisition is of more than theoretical and academic interest. There are millions of children in the United States who are put in the position of having to learn English as a second language in school. Administrators, teachers, and others connected with the school system would like to know what it is that they can do to best help these children. What are the best instructional methods to use in teaching children a second language? How much use should a bilingual teacher make of the child's first language? Is there an optimal age for second language learning? One of the purposes of this discussion is to see what research can, and can not, tell those in the schools.

The first chapter deals with preschool second language acquisition. In learning any language, a child faces a number of seemingly insuperable tasks. Yet children somehow acquire the sound system, the meaning system, and the rules for language use in their first language--all without apparent trauma. In doing so, they pass through definable developmental stages. Similarly, children manage to learn second languages without instruction, though here one finds greater variation in the paths they follow. Chapter One discusses these and other differences between first and second language learning in preschool children.

The second chapter treats second language acquisition in the classroom. The first topic in this chapter is the nature of the school experience and how the language of the school differs

from language used outside the classroom. A comparison is made between bilingual education in Canada and the United States, and various types of bilingual programs in the U.S. are discussed. The purpose of this discussion is not to provide an exhaustive description of the many forms of bilingual education in this country, but to specify the various instructional and interactional features that differentiate bilingual classrooms.

The third chapter is concerned with the ways in which researchers have investigated second language acquisition. The major research areas are studies of the second language-learning process, research on the question of language assessment, and evaluation research on the effectiveness of bilingual education. Throughout this discussion, the reader will no doubt be aware of the limitations of research. It would be erroneous to think that research on second language learning in children provides quick and easy answers for practitioners; in fact, there are no answers that cannot be challenged by better research.

PRESCHOOL SECOND LANGUAGE ACQUISITION

What is it that a child does in learning a language? Obviously, many things. Fromkin and Rodman state it this way:

We can say...that a language consists of all the sounds, words, and possible sentences. And when you know a language, you know the sounds, the words, and the rules for their combination (1974, p. 6).

According to this definition, there are three tasks facing the child in learning a language: (1) learning the sounds of the language or the *phonological system*, (2) learning the words of the language or the *lexical and semantic system*, and (3) learning the *syntactic system*, or how to combine the words. Even this is not enough, however. The child learns more than phonology, semantics, and syntax. The child also learns to use language in communicative settings. The last task involves learning how to use language to express, to inform, to influence, to demand, to promise. That is, the child has to learn the *pragmatic functions* of language.

Language-Learning Tasks

Phonology. In learning a language, the child has to learn both the phonemic structure of a language and its phonological structure. The first of these tasks refers to learning the sound units of the language. Children, whether first or second language learners, must learn to discriminate the sounds of the language and to produce them in their own speech. The second task, learning the phonological structure of the language, involves mastering the rules to follow in combining sounds into pronounceable sequences in the language and in relating such sequences to the surface structure of sentences.

Children appear to develop consistent phonological systems that follow several general processes, regardless of the language they are learning. These systems appear to be based on

the adult phonological system. Children change their pronunciation toward the adult norm, and once a sound segment appears (such as /s/), it spreads to other words where it belongs according to adult pronunciation, but not to words where it does not belong.

Children first master the rule that applies to the general case, and only later acquire more specific rules (Ingram, 1976). There appears to be continuous development in the suprasegmentals (intonation, rhythm, stress), in articulatory control, and in the mental representation of words. On the other hand, there seem to be considerable individual differences in mastery of specific aspects of the phonological system (Ferguson, 1977).

Aside from distinguishing the sound units and learning phonological rules, children must also learn to attach sounds to their referents. This is a more complex process than the mere attachment of a name to an object. Macnamara (1972) has argued that infants first determine nonlinguistically the meaning a speaker intends to communicate to them. They do this by developing a set of cognitive strategies that function as shortcuts in relating acoustical input to a speaker's intention. For example, once they are able to distinguish an object held before them from the rest of the environment, they adopt the strategy of taking the word heard as the name for that object, and not the name for a property or subproperty of the object. Thus, when the child sees a red, round object and hears "ball," the child names the object ball. This strategy generally works well, although there are occasional mistakes--as when an oven is always referred to as hot.

The child learning a second language also has to attach a sound to a word. This means determining what constitutes a word in the second language. The learner must discover how one word is marked off from another, how phrases and sentences are separable in what must seem an incomprehensible stream of speech. Some children seem to be better than others in accomplishing this task, either because they have a better "ear" for language, or because they are better at obtaining the kind of input from native speakers that is necessary.

Semantics. The child first language learner has the task of determining the extensions of words. The child who calls all four-legged creatures "doggie" obviously has not yet learned the adult extension of the word "dog." Meanings build up only gradually; indeed this is a life-long process.

We know little about how second language learners learn to attach labels to objects in the environment. The situation is obviously different from the case of the child learning a first language, since the child second language learner does not have to learn both the label and the concept (Nelson, 1981). The child has the concept, but must find the word that matches the concept. This will be especially difficult for the child when the two languages express a single concept differently. For example, Leopold (1939) noted that his bilingual daughter had to learn that the English word "brush" could be expressed in German by two words, "Pinsel" and "Buerste," which have different meanings.

But semantic development is obviously more complicated than attaching words to concepts. Semantic knowledge includes knowledge of (1) how the community of language speakers views reality and specifies relations between things; (2) the various kinds of meanings the language encodes (some languages encode semantic relationships that are lacking in other languages); and (3) the semantic domain of the words in the language--the subtle aspects of meaning that are constantly refined and expanded.

New experiences contribute to the growth and development of our semantic knowledge. Children differ in their conceptual development, so that teachers may find themselves in the position of teaching child second language learners words for which they have no experiential background. This is especially likely to be the case for children with different cultural backgrounds. Much of the frustration teachers experience in bilingual classrooms may be the result of a confusion between the linguistic and the conceptual domains.

Syntax. To be a skilled speaker in a language, it is necessary to know the rules that make it possible to construct new sentences that can be understood by others. Children learn to do this, although their early utterances do not follow the rules of adult usage. But gradually, and at a relatively young age (by 4 or 5), their rules become close approximations of those that adults follow. Somehow, children are able to extract from the speech they hear the rules of the language.

English-speaking children, who are learning a language that is comparatively uninflected, must rely to a great extent on word order in building up their grammar. As the child begins to pay more attention to syntactic information, a grammar develops that is based on syntactic rules. In spite of individual dif-

ferences, there seems to be some evidence for universal developmental sequences in first language acquisition. This has been documented, as we shall see in more detail shortly, for the development of negative, interrogative, and other syntactic constructions.

Syntactic development in second language learners has been studied in more detail, as will be noted, than other aspects of language learning--with the possible exception of phonology. This is because syntax and phonology are the most obvious aspects of language development and, relatively, the easiest to teach.

Pragmatics. Yet our knowledge of our language far exceeds our knowledge of phonology, semantics, and syntax. We have communicative competence as well as linguistic competence. We know how to interact with other people, how to ask for something politely, how to make sense of what people say, how to interpret irony and metaphorical speech. These skills, of course, are highly complex and to a great extent out of conscious awareness. They relate to our knowledge of the functions of language or what has become known as the "pragmatic" aspect of language use.

Just as virtually every child develops linguistic competence, so every normal child develops pragmatic competence. The child learns how to process such requests as "Could you open the door?" "Is your mother home?" "Can you give me the salt?" The child learns that such sentences are not questions of fact, but requests for action. In fact, children become quite adept at such indirect requests:

Johnny broke my plane.
Can you take me to the movie?
We haven't had candy in a long time.

Children also learn to switch codes depending on their communication partner. They talk differently to other children than to their parents, they change their speech when addressing small children, and they use a different code when dealing with teachers, ministers, and other "formidable strangers" (Gleason, 1973). Furthermore, children learn conversational rules--how to take turns in a conversation, how to control a topic, and how to yield the floor to the other participant in the "conversational game."

Much of our knowledge of language use is culturally based. We use language in the way that we do because such uses conform to cultural norms. When a person is learning a second language that is based on very different cultural assumptions, the pragmatic aspects of language use are likely to be very different. For example, children whose home language does not make use of implied requests are likely to experience more difficulty learning these forms in English than are children whose home language makes considerable use of implied requests.

Implied requests and other types of "linguistic rituals" are difficult to teach. It is clear, however, that children acquire both linguistic and communicative competence in their first language simultaneously: the development of the structure of language and its use go hand in hand. Children do this in an interactive environment--hypothesizing, testing, and revising their communicative strategies in the light of the feedback they receive. It is this process to which we now turn.

The Linguistic Environment

Interest in the linguistic environment of the child is relatively recent in child language research. For a long time, the focus was exclusively on the internal processes of the child. This emphasis was part of the Chomskyan heritage: Chomsky had argued that the child possesses at birth a language-sensing mechanism, or what he called the Language Acquisition Device (LAD) (Chomsky, 1965). According to this view, the contents of LAD are unknown; it is the proverbial black box as applied to language learning. Something is known about what goes into the black box and about what comes out. The output is assumed by Chomsky to be the adult competence in a language that is formally described by a grammar of that language. What goes in--the input--is the content of sentences heard by children from parents, other adults, other children, television, and so forth.

Chomsky argued that this input is basically "meager and degenerate," characterized by false starts, hesitations, slips of the tongue, and unfinished and ungrammatical utterances. That children can work from this meager and degenerate input to adult competence indicates for Chomsky that input is not a major factor in language acquisition--and hence is uninteresting; instead it is the internal processes of LAD that matter in language development.

It turned out, however, that Chomsky was wrong in his claim that language input to the child is "meager and degenerate." It has now been documented that the great majority of utterances addressed to children are well formed by any criterion. It seems that Chomsky and his followers had gone too far in denying the importance of factors external to the child.

Rather than being "meager and degenerate," the linguistic environment of the child appears to be quite suited to facilitate language development. Recent research on mother-child communication suggests that mothers and other caretakers have a special way of talking to the child in early conversational interactions--a language convention that persists over generations and has been called "caretaker speech." There are three general characteristics of this particular style of speech. First of all, there is a special lexicon--a special set of words--that characterizes caretaker speech. The lexicon contains names for body parts, basic qualities, kin terms, and names for some animals and games. There are also intonational variations: caretaker speech has a higher overall pitch, there is often a rising intonation at the end of sentences, there are more instances of emphatic stress, and speech is slower and more precise than speech to adults. Finally, there are grammatical modifications: caretaker speech involves a much greater use of nouns and pronouns, more third person constructions, and fewer verbs, modifiers, conjunctions, and prepositions than does speech addressed to older children or adults.

Speech addressed to young children learning the first language also contains more repetitions and is more likely to be about the here and now. Caretakers direct the child's attention to what the child is seeing and doing, to features of the immediate environment. They name objects for the child, ask rhetorical questions, repeat and expand the child's utterances. Indeed, parental speech to young children has been described as a set of language lessons. Parents prod and prompt the child, ask questions of the child, and answer their own questions:

What's that?

It's a ball, isn't it?

Ball. Ball.

Can you say ball?

In short, investigators have found that the speech of adults to young children is in many ways well suited to gain and hold the child's attention and to make meaning apparent. Were this

not the case, the child would (and does) tune out. Nonetheless, while it is clear that caretaker speech is in a general manner facilitative to language development, it is not clear how and why this is so and which aspects of caretaker speech make a difference. This is certainly the next step for research in this area, but it is a difficult one (although there is some information, e.g., Cross, 1978; Furrow, 1979).

It is this explanatory line of research that is of most interest to those concerned with second language instruction. By its very nature, instruction involves a changing of input to the needs of learners. But how do teachers maximize input so as to benefit second language learners? One would expect that for children, input that was similar in its characteristics to caretaker speech--slow, repetitive, about objects in the here and now--would facilitate language learning (McLaughlin, 1980a). Unfortunately, at this point there simply has not been enough research on the input that children receive to know whether this is indeed true.

Developmental Sequences

We mentioned earlier in this chapter that considerable evidence has accumulated concerning developmental regularities in the acquisition of particular syntactic structures. For example, Klima and Bellugi (1966) found that it was possible to distinguish three phases in the child's development of negative constructions. First, the negative word occurs outside of the sentence nucleus in such utterances as

No wipe finger.
Wear mitt no.
No zinging song.
Not a teddy bear.

The only negative forms at this stage are the words "no" and "not." In the second stage, about two to four months later, more negative forms occur, especially verbs such as "can't" and "don't." The negative may occur before the predicate:

He no bite you.
I can't catch you.

Or the negative may be outside the sentence nucleus as in the first stage:

No pinch me.
Touch the snow no.

In the third stage, which occurs from two to six months later, the adult pattern appears (although the child still has linguistic work to do):

Ask me if I not make mistake.
I not hurt him.
You don't want some supper.

The development of questions follows a course similar to that found in the development of negatives. The child initially leaves the sentence alone and simply adds rising intonation or *wh*-words as interrogative devices:

No ear?
See hole?
What doing?

In the second stage, the child asks such questions as

Where my mittens?
What me think?
Why you smiling?

This stage seems to be characterized by the prefixing of question words to otherwise complete sentences. In the third stage, the auxiliary system emerges, and the modal "do" is inflected for tense:

Does the kitty stand up?
What did you doed?
Did I saw that in my book?

Once again the child still has linguistic work to do. At stage 3, the child would say, "Why he don't know how to do it?" whereas

the adult would say, "Why doesn't he know how to do it?" That is, the child still has to learn the rules for inversion in *wh*-questions, although they have been mastered for *yes/no* questions by this time.

Such developmental regularities are not limited to the English language. In a study of Russian inflectional development (which is much richer than English), Slobin (1966) concluded that plural inflections of nouns and imperative markers of the verb develop first (about the time when the child passes from the two- to the three-word stage). Then come classes based on relational criteria such as the tense and person markings of the verb, followed by nouns marked for various abstract categories of quality and action. Finally, very late, gender markings appear for nouns and adjectives.

Whether these and other developmental regularities are the result of structural properties of the language or cognitive strategies that learners use is a matter of considerable debate at present. There is even debate about how regular and universal these developmental sequences are. Nonetheless, the initial evidence for developmental sequences in first language acquisition has had an important impact on second language research.

First and Second Language Learning Compared

One of the most interesting findings in studies of children's second language learning is that many of the developmental sequences found in English monolingual learners have also been observed in children learning English as a second language, regardless of their first language. That is, child second language learners seemed to follow the same sequences that monolingual learners follow. Let us consider several studies bearing on this issue.

Developmental Sequences in Second Language Learning

Raven (1974) studied the development of English *wh*-questions in the speech of his Norwegian-speaking children, a 6-year-old son and a 3-year-old daughter. In general, the mistakes they

made reflected English rather than Norwegian developmental features. For instance, like the monolingual English-speaking children whom Brown observed (1968), Ravem's children failed to invert the auxiliary verb and subject ("Where he is going?"). Similarly, why questions developed late, as they do in monolingual children, although Ravem's children understood the notion of causality in their first language.

In an investigation of the acquisition of Spanish by seven English-speaking children from 4 to 6 1/2 years of age, Dato (1970) reported that the children did not invert the subject and the verb in questions, although word-for-word translation from English to Spanish would lead to inversion. Here, as in Ravem's findings, the children did not seem to be building on their first language, but following the same sequence as is observed in monolingual speakers of the target language.

Additional evidence for such developmental sequences comes from Wode (1978), who studied four English-speaking children aged 3 to 7 1/2 years who were acquiring German as a second language. Examination of the development of the German negative in these children's speech revealed a developmental sequence very similar to that found in monolingual German children. Again, the evidence runs counter to the notion that the children are building on their first language to crack the code of the second; instead, there seem to be structural regularities in the target language that determine the course of learning for second language learners.

Furthermore, there is evidence from cross-sectional research for developmental sequences. For example, Natalicio and Natalicio (1971) studied the acquisition of English plurals by native Spanish-speaking children in grades 1, 2, 3, and 10. They also had a control group of monolingual English-speaking children. Both groups were tested on their knowledge of English morphological rules, and both Spanish- and English-speaking children were found to acquire the /-s/ and /-z/ plural allomorphs before the /-iz/, even though transfer from Spanish would predict that /-z/ and /-iz/ would be acquired simultaneously (Spanish plurals are all voiceless, and voicing is the new feature English requires).

In short, a number of studies suggested that the pattern of acquisition of a second language is the same as the pattern followed when that language is acquired by native monolingual speakers. This led some researchers to argue that first and

second language acquisition are based on the same set of processes. It turned out, however, that this was too simple; the fact that second language learners already possess a language can make a difference.

Similarity and Differences

Some of the very studies that suggested a similarity between first and second language-learning processes also indicated that there were differences as well. Wode (1978) noted that his research on German-speaking children learning English as a second language revealed developmental sequences different from those observed in English monolingual children. He argued that these differences result from first language transfer and overgeneralization, but do so in a systematic way that reflects "general acquisitional principles." For example, he found a stage in the acquisition of the negative in which the negative element was placed after the verb, a structure that heavily reflects the child's first language (German) word order. As Wode pointed out, the same error could result from analogy with the English rule for negative placement after auxiliaries--though children acquiring English as a first language have not been found to make this kind of error. Another possibility is that the two factors--transfer and overgeneralization--are actually interacting in such cases. Evidence for such an interaction has been presented by Mulford and Hecht (1980) in their study of the acquisition of second language phonology.

The interaction between first and second language acquisitional principles has been discussed by Hakuta (1976) in his study of a 5-year-old Japanese girl acquiring English as a second language. Hakuta made the point that second language acquisition is a dynamic, fluid process in which the learner's system is constantly "shifting in a slow and gradual manner either toward the maintenance of an internal consistency within the structures that the learner possesses, or in the direction of an external consistency, where the learner attempts to fit the internal system into what is heard in the input" (p. 331). In this process, the children use what they have: they use their knowledge of language and, specifically, their first language to crack the code of the second. This transfer of the old onto the new can produce negative as well as positive results. Thus, Hakuta suggested that his subject was late in acquiring full control of the English article because a distinction between definite and indefinite is not marked in Japanese.

The use of formulas. Hakuta (1976) noted that his subject was able to construct where questions from the first sample taken: "Where's purple?" "Where is potato?" She also formed how questions of the following sort: "How do you make it bread?" "How do you play this?" "How do you put it on?" It seemed that in many such instances the child was relying on what Hakuta called a prefabricated pattern.

The most detailed analysis of the use of prefabricated or formulaic expressions is Lily Wong-Fillmore's dissertation (1976), based on a study of five Spanish-speaking children ages 5 to 7. Wong-Fillmore found that formulaic expressions were used by these children as prefabricated utterances that enable them to speak before knowing anything of the structure of the target language. Examples are "Lookit," "Wait a minute," "Whose turn is it?" Once the child discovers that constituents of formulaic expressions are interchangeable and can be freed from the original pattern, the child has an abstract structure consisting of a pattern or rule by which the construction of a novel utterance becomes possible. Wong-Fillmore gave the example of the formulaic expression "How do you do dese?" which becomes "How do you do dese flower pot?" or "How do you do dese little tortillas?" Eventually the pattern "How do you make the flower?" appeared and then "How do cut it?" "How do make it?" Finally, "how" is freed: "How you make it?" "How will take off paste?" Thus phrases with "how" were progressively analyzed until only the question word remained. Wong-Fillmore found such sequences to be extremely common in the children's speech.

A similar point was made by Hakuta (1976), who argued that prefabricated patterns enable learners to express functions that they are as yet unable to construct from their linguistic system. As the learner's system of linguistic rules develops over time, the externally consistent prefabricated patterns become assimilated into the internal structure. We should note that this process is less likely to occur in linguistically naive children and, in general, in younger children whose limited information-processing capacities do not allow them to store and use formulas to the same extent. Hence, younger children acquiring a first language are less likely to use formulaic expressions (although they probably use many more formulas than has been supposed).

Krasher and Scarcella (1978) argued that the use of formulaic expressions as a tool in second language acquisition is a function of pressure to communicate and of routinized predictable input. They maintained that these conditions "are not

present in most language acquisition situations" (p. 295). This may or may not be the case, but in any event, there is another reason for the use of formulas in the speech of older children. Formulaic expressions seem to be the inevitable consequence of the cognitive development of older learners. As Hakuta put it,

The second language learner is necessarily older than the child learning a first language, and we would expect that, with advanced semantic development and yet no form with which to express such thoughts, the need to learn the various linguistic structures of the target language will be especially acute (1976, p. 331).

Until the structures of the target language are acquired, Hakuta argued,

the learner will employ a strategy which "tunes in" on regular, patterned segments of speech, and employs them without knowledge of their underlying structure, but with the knowledge as to which particular situations call for what patterns (1976, p. 331).

Thus, for example, Vihman (Vihman and McLaughlin, in press) reported that her daughter, Virve, who learned Estonian as a first language, used considerable formulaic speech in acquiring English, even though she was not subject to "peer and school situations that demand linguistic interaction before competence is attained the 'slow way' (Krashen and Scarcella, 1978, p. 292)." In fact, Virve rarely spoke at all to her peers or even, at first, to English-speaking adults. A shy child, she reserved her conversation for the home environment, where for a short period (age 2;1 and 2;2) she began to make considerable use of English in addressing her parents, despite their efforts to encourage her to use only Estonian. Remarks such as "That's good!" and "That's yours!" were used at home. They were certainly formulas and probably served a practice function, but they could not be said to have been produced under pressure to communicate, since her Estonian was more than adequate in that context.

Other differences. There is general agreement that the processes of first and second language learning are not entirely alike, but not altogether different (Wong-Fillmore, 1976). The child second language learner must learn how to express the meanings of the target language, but the basic concepts do not have to be learned as they are in the first language. The con-

cepts exist; the task is to map the concepts onto the new language. There are several other important differences.

For one thing, the child second language learner brings increased experience and understanding as well as prior knowledge of a first language to the task.

Prior knowledge of a first language may predispose the learner to look for familiar ways of expressing in the new language meanings he is accustomed to expressing in his first language. He will be inclined to make the kinds of distinctions in the new language--perhaps inappropriately--that were relevant to his first (Wong-Fillmore, 1976, p. 55).

A second difference is that the attitudes of the child learner toward the second language have a great effect on the child's success in mastering the second language. The learner who is positively predisposed toward the second language and culture is more motivated to learn the language and is likely to experience greater success. Wong-Fillmore's Nora was the most successful of the learners she studied and the one who was the most positive in attitudes toward speakers of the second language and its culture. Indeed, social motivation seems to have important consequences with regard to the strategies that children use in learning the language.

If the desire to join a social group whose language the learner does not speak is the social motivation for using contextual information to figure out what people are saying, then the desire to maintain contact and to sustain social relations with members of the group is the motivation for the acquisition of formulaic speech (Wong-Fillmore, 1976, p. 669).

In other words, the use and analysis of formulas seems to relate directly to motivational factors.

Closely related to this is the personality of the second language learner. The ways that different individuals have to relate socially to others seem to have a special significance in second language learning. On the other hand, this seems less true of first language development. All children, regardless of personality, master their first language, but individual differ-

ences in personality have, in Wong-Fillmore's research, very marked effects on the child's second language learning. Some children are more inhibited than others, some have better means of soliciting language from others, some play games (role playing) that assist language acquisition.

Perhaps the most general difference between child first and second language learners is in the area of metalinguistic awareness. The child learning a second language after the first has been established knows what language is. That is, the child knows what it is to mean--knows how intentions are realized in language. These general cognitive differences may have important implications in helping to explain how it is that second language learners take different routes to gain proficiency in the target language.

To summarize, researchers were impressed initially with the similarity between the developmental sequences observed in acquisition of English as a first and second language. A number of studies have appeared, however, that suggest that there are important differences as well. Unfortunately, much of the research has focused on phonology and syntax; little is known about how the semantic categories a child has built up in a first language affect second language learning (Hakuta, 1981). Even less is known about how having learned the pragmatic rules for language use in one language affects learning the rules for another. Especially where there are large cultural differences, one would suspect that the pragmatics of language use differ considerably between languages and could confuse children.

Implications for Teaching

It is always risky to extrapolate from research to the classroom. In this case, the implications to be drawn are especially tenuous, since much of the research discussed in this chapter was with one or very few children. Furthermore, the learning situation was quite different from a classroom learning situation. Most of the studies mentioned in this chapter were with children in a "naturalistic" learning situation where there was no instruction and the child simply acquired the language from hearing it used. Classroom learning typically involves instruction in the language and is often directed at uses of language different from those in naturalistic settings. We shall see more of this in the next chapter.

Nonetheless, a few generalizations are possible.

- (1) It takes time to learn a language. Assuming that young children learning their first language are exposed to a normal linguistic environment for at least five hours a day, they will have had, conservatively, about 10,000 hours of exposure between six months and six years. Considering the complexity of the various tasks involved in learning any language--phonological, syntactic, semantic, and pragmatic--it is not surprising that children do not master a second language in a short period of time. There is no reason to suppose that a child can learn a second language in a year or even two years. The myth that children somehow automatically "pick up" a second language is not supported by research or experience.
- (2) There is more to second language learning than learning the sound system and the rules for grammar. These are the aspects of language that are most salient to teachers, but the more subtle aspects of language, semantic and pragmatic knowledge, are equally important. Equal emphasis should be given in bilingual education and in assessing language proficiency to these last two tasks, since proper knowledge of the semantic categories and the functional uses of a language are central to its mastery.
- (3) A major aspect in all language teaching is adjusting the input to the needs of the child. Caretakers do this automatically with child first language learners, adjusting their speech downward to the level of the child. It is more difficult to adjust language input to the needs of older child second language learners, who have developed conceptual knowledge in one language. The key to providing appropriate input to both first and second language learners is being attuned to the feedback the child is providing. Mothers notice when what they are saying is too difficult for the child to comprehend and adjust their language accordingly. Good teachers do this also, which means that they are attentive to the communicative needs of each of the children they interact with.
- (4) Researchers disagree on the question of whether instruction in a second language should focus deliberately on those developmental sequences that have been found in the speech of naturalistic second language learners. There is greater agreement on the need to make classroom learning mimic, to

the extent possible, a natural language use situation. If children have to communicate in a second language, they will develop the strategies they need to use the language. It is less important to know whether these strategies are a function of the structure of the target language or are dependent on the child's previous experience with language. The main concern of teachers should be that the child, like the child learning a first language, is motivated to communicate in the language.

Suggestions for Further Reading

Some helpful general material on child language learning:

- Lindfors, J. W. 1980. Children's language and learning. Englewood Cliffs, NJ: Prentice-Hall.
- Slobin, D. I. 1979. Psycholinguistics. 2nd ed. Glenview, IL: Scott, Foresman.
- Snow, C. E. and C. A. Ferguson, eds. 1977. Talking to children: Language input and acquisition. Cambridge: Cambridge University Press.

Some of the more interesting studies of child second language learning:

- Hakuta, K. 1976. A case study of a Japanese child learning English as a second language. Language Learning 26: 321-51.
- Wode, H. 1978. Developmental principles in naturalistic L₂ acquisition. In E. Hatch, ed., Second language acquisition: A book of readings. Rowley, MA: Newbury House.
- Wong-Fillmore, L. 1979. Individual differences in second language acquisition. In C. Fillmore and W. S.-Y. Wang, eds., Individual differences in language ability and language behavior. New York: Academic Press.

Chapter 2

SECOND LANGUAGE ACQUISITION IN THE CLASSROOM

The studies discussed to this point have been concerned with second language acquisition in children in relatively "naturalistic" settings. That is, the child's language learning took place without any formal tutoring in the context of natural interactions with parents, other adults, and peers. The classroom situation provides a very different context for the child learning a second language.

The School Experience

There are some obvious differences between second language learning outside and inside the classroom. Children in the natural situation typically hear the language used around them and have to adjust their own speech to their hearers if they are to communicate. Children studied in natural settings were usually surrounded by speakers of the second language and were immigrants to a new country or members of an academic family living in another country during a sabbatical leave. Children in school settings typically have peers who are speakers of the same home language and who, like them, are in a situation where they are expected to learn a second language. Under such conditions, children can fall back on their peers and sometimes do marvelously well at not learning the second language at all. Motivation to learn the language is an obvious difference between the two situations.

Classroom Second Language Learning

Other differences between naturalistic and classroom second language learning were illustrated in a study by Felix (1980), who observed German 10- and 11-year-old children learning English in a classroom setting where there was almost no naturalistic exposure. Felix found evidence for structural parallels between classroom second language learning and those developmental sequences observed in monolingual English-speaking children. This was especially true for negative and interrogative structures where the children followed a developmental path very similar to that observed in naturalistic learners. Particularly

striking was their use of incorrect constructions that they had never heard, but that represented simplification and overgeneralization strategies identical to those used by monolingual first language learners.

There were, on the other hand, important differences between the way in which these children learned their second language and naturalistic language acquisition. For one thing, the children were forced to learn in the first few weeks English syntactic structures that do not emerge until a comparatively late developmental stage in naturalistic language acquisition. This resulted in errors not typically found in monolingual speakers, especially in the use of personal and possessive pronouns.

Felix's data suggest that two things are happening in this situation. On the one hand, the children are using universal strategies of language acquisition to solve the riddle of the foreign language. The use of these general language-learning strategies results in constructions that are quite similar to those found in monolingual children acquiring the target language and in naturalistic child second language learning. On the other hand, the teacher's didactic efforts lead the children to evolve tactics for dealing with this particular learning situation, especially when they are forced to produce utterances before developing the appropriate structural features of the sentences involved. These tactics are idiosyncratic and lead to a somewhat random pattern of errors.

The distinction between "strategy" and "tactic," as the terms are used here, was proposed by Seliger (1980). A "strategy" is a superordinate, abstract, constant, and long-term process. What learners do to meet the immediate demands of a particular learning task or situation is called a "tactic," which is defined as a short-term process used by the learner to overcome temporary and immediate obstacles to the achievement of the long-range goal of language acquisition. Seliger assumed that strategies are used in all language-learning situations. Examples are overgeneralization, simplification, and hypothesis testing. Tactics are the particular problem-solving devices used by individual learners with varying degrees of success. Because children approach the second language with the same set of general language-learning strategies they used for acquiring their first language, one may find similar patterns in the development of formal structures, if these are not obscured by the tactics used in particular contexts. The more the learner uses general problem-solving tactics, the more the pattern is likely to diverge from the first language pattern.

In short, the argument here is that classroom language learning often requires the use of problem-solving tactics that make the learning process different from a naturalistic situation, where the learner relies more on universal language-learning strategies. It should be noted, however, that even outside the classroom, child second language learners show idiosyncratic patterns as they try to combine what Hakuta (1976) called the "internal" and "external" systems. Developmental patterns can be found in the speech samples of many child second language learners, but there are significant exceptions resulting from individual learning styles, interaction of first and second language systems, and conditions of presentation.

Formal and Informal Language

There is another major difference between language learning in the classroom and outside of it. In the classroom, the child is both learning a second language and learning the language of the school. A number of investigators have pointed out that classroom language is different from language used outside the classroom. Outside the classroom, the child has been used to directing thought on to the real, distracting world of concrete experience. In the classroom, as Donaldson (1978) noted, the child has to learn to turn language and thought in on himself. The child has to learn not only to talk, but to choose what to talk about; not just to interpret, but to weigh possible interpretations. The child's conceptual system must expand in the direction of increasing ability to represent itself. In short, the child has to develop generalized competencies in abstraction, verbal reasoning, and metalinguistic ability.

Recently Calfee and Freedman (1980) have drawn a distinction between "formal" and "informal" language. The informal language is the language of the home; the formal language is the language of the school. Informal language is highly implicit and interactive; it is context-bound and personal. In contrast, formal language is highly explicit and rational; it is context-free and logical. Calfee and Freedman regard the formal/informal distinction as a way of separating two "modes of language and thought." They do not, however, elaborate to any great extent on the characteristics of each "mode."

This has been done more extensively and in an historical context by Olson (1977) in his discussion of the distinction between "utterance" and "text." Olson argued that in oral communication, the degrees to which language is formalized need not

be very great, since the listener has access to a wide range of information with which to recover the speaker's intentions. Even if the speaker is elliptical or chooses the wrong word or grammatical form, the listener can successfully recover the speaker's intentions from nonverbal cues. With written language, however, this is not possible. All the information relevant to the communication must be present in the text. Furthermore, to sustain an argument, the meanings of terms and the logical relations holding between terms must be brought to a high degree of conventionalization.

Thus, for Olson, oral language, or the language of utterances, is the language of the interpersonal sphere, is contextualized, and provides one cue among many as to the speaker's intentions. Written language, or the language of texts, is the language of abstract ideas, is decontextualized, and must in and of itself express the speaker's intentions. The child comes to school with oral language; the school experience teaches the child how to deal with written texts:

Schooling, particularly learning to read, is the critical process in the transformation of children's language from utterances to text (Olson, 1977, p. 278).

The Linguistic Interdependence Hypothesis

All children experience a mismatch between the informal language of the home and the formal language of the school. The mismatch is greatest, however, for those children whose home language is different from the language of the school. In such cases, it is not simply a case of learning the language of the school; the child must learn the second language as well. Obviously, children do this with varying degrees of success. Children in Canadian French-immersion programs apparently succeed very well; less success is often reported in U.S. bilingual programs.

One explanation of children's success or lack of success is based on Cummins' "linguistic interdependence hypothesis" (1979, 1980a). According to this hypothesis, the level of competence a child attains in a second language (L₂) learned in a school context is a function of certain competencies attained in the child's first language (L₁). For most middle-class children in immersion programs, the development of L₁ vocabulary and concepts is strongly promoted by the child's linguistic environment

outside of the school." Hence extensive exposure to L₂ is likely to result in high levels of competence at no cost to L₁ competence.

However, for children whose L₁ skills are less well developed in certain respects, intensive exposure to L₂ in the initial years [of schooling] is likely to impede the continued development of L₁. This will, in turn, exert a limiting effect on the development of L₂. (Cummins, 1979, p. 233, italics added).

In elaborating on this position, Cummins suggested that there are three general aspects of a child's knowledge of language that are closely related and that constitute the basic skills that children need to realize the positive benefits of a bilingual schooling experience. The first is what Becker (1977) has called "vocabulary-concept knowledge"--specifically, the child's understanding of the concepts or meanings embodied in words. Obviously, if the child does not have any understanding (or a very limited understanding) of the concepts represented in the words on a printed page, reading comprehension will be impaired. This seems to be the case for many linguistic minority children in the U.S., especially those who have been unsystematically exposed to two languages prior to coming to school and have failed to develop proficiency in either. Cummins argued that their bilingual school experience intensifies this state of affairs in that it does not allow them to continue to develop the conceptual basis for abstraction in their first language. As a result, these children lack the semantic knowledge necessary for developing fluent reading skills.

A second aspect of the knowledge of language that is crucial involves *metalinguistic insights*, especially two specific insights: (1) the realization that print is meaningful, and (2) the realization that written language is different from spoken language. The first insight is necessary for the child to be motivated to read; the second helps the child to give structure and predictability to written language. Unless the child realizes that written language is different from spoken language, predictions about the meaning of the text are likely to be inaccurate.

The third prerequisite is *the ability to decontextualize language*. The child must be able to take language out of its immediate context. This capacity relates to a considerable extent to experiences the child has had before coming to school.

Children who have had the experience of being read to are aware that written language is different from spoken language.

Cummins' argument has obvious parallels with Olson's (1977) discussion of utterance and text and Calfee and Freedman's (1980) discussion of informal and formal language. The school experience brings the child into contact with decontextualized, disembedded language--the language of text, the formal language of the school. Cummins' hypothesis is that the child who comes to school with some experience with text, with decontextualized language, is at an advantage compared with the child who does not have this experience. This is especially true when the child faces the dual task of "learning the language of the school" and "learning a second language."

Does this mean that linguistic minority children who have had little chance to develop literacy-related skills in the home are in some way linguistically deficient? Cummins (1979) argued that this is not the case: linguistic minority children are more dependent on the school to provide prerequisites for literary skills, but this does not imply that their basic cognitive abilities are in any sense deficient or that their command of the linguistic system of their first language is necessarily inadequate.

It may be helpful in this context to recall the distinction between "strategy" and "tactic" made earlier in this chapter. Strategies are cognitive skills that are universally applied in the process of language acquisition. To the extent that linguistic minority children have developed normally, these cognitive abilities can be presumed to have been successfully applied. It is in the application of general problem-solving tactics that linguistic minority children may lag behind other children. Specifically, the lack of a literate home environment may have affected the child's ability to deal with the metalinguistic function of language--that is, to treat language abstractly and to separate language from its interpersonal function of communicating information to others. Such cognitive skills are not universally acquired, as are the cognitive skills involved in communicating through language; rather, skill in dealing with the metalinguistic functions of language is an ability that the child may or may not learn in the home environment and in school.

The linguistic interdependence hypothesis assumes that previous learning of the literacy-related functions of language

will affect how well they are subsequently learned in the school. What evidence exists in support of this hypothesis? Cummins (1980b) cited a number of studies that indicate that the literacy-related functions of language are distinguishable from interpersonal language skills. In particular, he noted the finding of Skutnabb-Kangas and Toukomaa (1976) that although parents, teachers, and the children themselves considered Finnish immigrant children to be fluent in Swedish, tests in Swedish that required cognitive operations showed that their surface fluency was not reflected in the literacy-related aspects of Swedish proficiency.

In this study, Skutnabb-Kangas and Toukomaa found that the extent to which the first language had been developed prior to contact with Swedish was strongly related to how well Swedish was learned. Children who migrated at ages 10 to 12 maintained a level of Finnish close to Finnish students in Finland and achieved Swedish language skills comparable to those of Swedes. In contrast, children who migrated at younger ages or who were born in Sweden tended to reach developmental plateaus at a low level in both Finnish and Swedish academic proficiency. This brings us to another issue.

The Optimal Age Question

For years, the commonly held belief was that young children were superior to adults in second language learning. The notion was that there was a "critical period" for second language learning and that adults, having passed the critical period, could not learn second languages as readily as young children. However, when direct comparisons are made between adult and child second language learners, results usually indicate that adult learners perform better on measures of morphology and syntax (McLaughlin, 1978).

Krashen, Long, and Scarcella (1979) have argued that adults acquire the morphology and syntax of a second language faster than young children, but that child learners will ultimately attain higher proficiency. They endorsed a "younger-is-better" position, according to which child second language learners are expected to be superior to adolescents and adults in terms of ultimate achievement. If anything, however, the evidence they cited (Pathman, 1975; Snow and Hoefnagel-Hoehle, 1978) suggests that ultimate proficiency in morphology and syntax is highest among learners who have begun acquisition during adolescence.

The younger-is-better hypothesis is also contradicted by research with children in FLES (Foreign Language in the Elementary Schools) programs (Burstall, 1975) and some recent Canadian research with children in immersion programs that shows that children starting a second language in later grades catch up quickly with those beginning earlier (Swain, 1981).

In what is probably the most thorough and careful review of the optimal age issue, Ekstrand (1979) concluded that general cognitive development, native language learning, second language learning, learning ability and memory, perception, imitation, and social learning all improve with age and are all positively interrelated:

Thus, there is simply no room for all those optimal age and critical period theories that predict a drastic decline in L₂ learning ability at any time during childhood, youth or the major part of adulthood (p. 37).

The linguistic interdependence hypothesis also has implications for the optimal age issue. It follows from the linguistic interdependence hypothesis that older learners, whose literacy-related skills are more developed, would acquire school-related second language skills more rapidly than younger learners. That is, in a school setting, where emphasis is placed on generalized competencies in abstraction, verbal reasoning, and metalinguistic ability, one would expect children to do better whose ability to deal with disembedded language is more developed. On the other hand, this would not necessarily be the case for those aspects of second language proficiency that relate to the interpersonal use of the second language.

Cummins (1980b; in press) reviewed studies relating age to second language learning and concluded that the findings support the prediction of the linguistic interdependence hypothesis. First, the studies show a clear advantage for older learners in mastery of second language syntax and morphology as well as in the cognitive/academic types of second language skills measured by conventional standardized tests. Second, studies of oral fluency and accent, while not consistent in either direction, often show older learners at a disadvantage when compared with younger learners. Assuming that oral fluency and accent measure interpersonal aspects of language use rather than more literacy-related aspects, these findings are consistent with the linguistic interdependence hypothesis.

This research has definite implications for designing and implementing bilingual education programs, most obviously in connection with decisions about when to introduce non-English-speaking students to English. The linguistic interdependence hypothesis suggests that the student's level of first language proficiency at the time of second language acquisition is an important determinant of the outcome of the language-learning process.

Bilingual Education in North America

Up to this point we have been discussing the cognitive and linguistic aspects of second language learning. There are also, of course, important social psychological aspects to second language learning in a school situation. These aspects have often been discussed in comparing the success of Canadian immersion programs with the relative lack of success of American second-language-only programs.

Canadian Immersion Programs

The results of Canadian immersion programs are doubtless impressive. In the initial research, the St. Lambert Project (Lambert and Tucker, 1972), children in the program were followed and tested over a five-year period. After grade one, experimental groups of English-speaking children exposed exclusively to French in the school setting scored below English control classes on tests of English word knowledge and reading skill, but had no difficulty with English comprehension tests. French language skills at this point were almost all poorer for the experimental children than for French-speaking controls, except for word discrimination, sentence comprehension, and word order.

At the end of grade two, the experimental group had progressed in English (they now had two 35-minute periods of English language arts daily) to the point where they were on a par with control groups. Lambert and Tucker attributed this progress to the transference of their basic skills in reading, concept development, and word manipulation through French to English. The children's French also continued to improve. Although they were still behind French-speaking controls, especially in matters of grammar, progress in pronunciation and in basic sound units was noticeable.

By the end of the fourth grade, the children in the immersion program were rated by a group of linguists to be at or above the neutral point in competence for all indices of French language arts (although they did not surpass native French-speaking children). At the same time, their English skills were at the same level or higher than controls. Other research on children in Canadian French immersion programs consistently demonstrates the same pattern of results: after several years, children in these programs have achieved proficiency in French without any negative consequences to their English language skills (Swain, 1978).

Immersion and Submersion Programs Compared

Why, then, is it that a similar model has proven ineffective in the United States? In contrast to the positive results achieved in Canada, linguistic minority children in the U.S. usually fare poorly when placed in a school situation in which they receive all their instruction in a second language (John and Horner, 1971; U.S. Commission on Civil Rights, 1975). The overt linguistic circumstances for Canadian English-speaking children and for American linguistic minority children seem parallel. In both cases, the child is exposed from the beginning of schooling to a second language. Yet there are important differences.

In the Canadian environment, English-speaking children have no sense of inferiority in the school. The children in total immersion programs are usually chosen from English monolingual communities. Their social group is the more prestigious and their language is respected. The children are not expected to compete in the classroom with native speakers of French, and their teachers do not have low expectations for their achievement. These factors are central to the success of such programs.

It should also be noted that in total immersion programs for English-speaking children, the children are kept segregated, at least initially, from other children who speak French as a first language. The second-language-only approach for linguistic minority children in the U.S. usually involves placing the child in a class where there are a considerable number of native English-speaking children whose language proficiency gives them an advantage. The situation is more "submersion" than immersion -- submersion reflecting the "sink-or-swim" nature of the experience for the minority student (Cohen and Swain, 1976). Table 1 outlines the differences between immersion and submersion approaches.

Table 1

DIFFERENCES BETWEEN IMMERSION AND SUBMERSION APPROACHES
(based on Skutnabb-Kangas, 1978)

<u>Immersion</u>	<u>Submersion</u>
Linguistic majority	Linguistic minority
High-status first language	Low-status first language
Middle-class parents	Working-class parents
Program optional	No alternative
High motivation	Low motivation
L ₂ not threat to L ₁	L ₂ threat to L ₁
Bilingual teachers	Teachers monolingual in L ₂
All children L ₁ speakers	L ₁ and L ₂ speakers mixed
Compared with L ₁ speakers only	Compared with native L ₂ speakers
High teacher expectations	Low teacher expectations
High self-confidence	Low self-confidence
Parent involved in program	Little parental involvement

What happens to children in submersive programs? In too many cases, what happens is that the children do poorly in school, drop out as soon as possible, and develop identity conflicts and a sense of marginality. Their later job opportunities are severely limited in an increasingly technological society. This is true not only for many linguistic minority children in the U.S.; it also is true of hundreds of thousands of children of immigrant workers in Europe (Skutnabb-Kangas, 1978).

For such children, bilingualism is subtractive (Lambert, 1975). That is, their first language is endangered by the acquisition of the more prestigious second language. The consequences for school achievement and personal identity are negative. This is not the case for linguistic majority children who learn a second language in an immersion program. In this case bilingualism is additive in that it enriches the children and has essentially positive benefits.

Would an immersion model work in the U.S.? At present, we do not know the answer to this question. There are certainly serious problems in even attempting to mount such a program. If a bilingual program is to involve an immersion approach on the Canadian model, it means segregating the children from native speakers. There are legal problems with any such approach, as well as practical ones, in convincing parents that their children are not being "ghettoized."

Second, in the Canadian model, all the children are at the same level in their initial knowledge of French--they know none or almost none. This is not true for the English of many children who are in bilingual programs in the United States. Many Spanish-speaking children, for example, have been exposed to English unsystematically since they were born. Such children are likely to have different degrees of fluency in English when they enter school, and this means that an important social psychological assumption of immersion programs is not met: that all children start at the same point so that no child feels inferior to others in language skills.

Third, children in the Canadian immersion programs never attain the level of French proficiency that native French-speaking children possess. The immersion children are compared with each other; they are not compared with native speakers. This is not true for children in bilingual programs in the U.S. These children are expected to attain native-like proficiency so

that they can enter, and have equal educational opportunities in, the regular all-English curriculum.

- In short, fundamental differences between the Canadian situation and the situation in the U.S. make one doubt that immersion programs on the Canadian model will work in this country. However, some variant of this model may turn out to be an effective approach. Certainly experimentation is needed. There is no reason why bilingual education should be limited to any one instructional model. In fact, as we shall now see, diversity has been the rule in this country.

Language Instruction in Bilingual Classrooms

Bilingual programs in the U.S. range from individual tutoring to magnet bilingual schools. There is also substantial variation in such practices as tracking bilingual students according to ability groups, segregation, and pullout criteria (Seelye and Navarro, 1977). Some schools use an itinerant teacher design, with students receiving individual or group tutoring in their first language while remaining in the mainstream classroom. The commitment of the individual school to the bicultural aspect of bilingual education varies (Escobedo, 1978; Hernandez-Chavez, 1979). For the most part, programs are designed to be transitional in nature, with the goal of providing the child with sufficient English-language skills to move into the mainstream curriculum as early as possible. One of the central considerations for school districts is in the per-student costs associated with bilingual programs; here again one finds marked variation from district to district (e.g., Danoff, 1978; Garcia, 1976; Smith and Smith, 1978).

Instructional Models

There are at least four major models of bilingual instruction:

- (1) Transitional Bilingual Education. By this is meant a model in which the subject matter is taught (at least in part) in the child's first language until it is thought that the child's English is good enough for participation in the regular classroom. Sometimes separate instruction in Eng-

lish as a second language is given to facilitate the transition to English. In some settings, the child's first language is gradually phased out and English is phased in. The ultimate goal is to place the child in the regular English classroom, but the specific characteristic of this method is the use of the child's first language until the child is ready for an English-only classroom. This distinguishes the model from a "submersion" approach (which is not a model of bilingual education), where children are exposed only to English for all classes.

- (2) Maintenance Bilingual Education. In this model, the ultimate goal is a bilingual individual fluent in both the first and the second languages. Instead of phasing out instruction in the first language, as in transitional bilingual education, instruction is continued in the first language, although the use of the first language may change from serving as a medium of instruction to being taught as subject matter (e.g., Spanish language arts class).
- (3) English as a Second Language (ESL). This model places linguistic minority students in regular instruction for most of the day, but has them pulled out for special instruction in English. Another approach is to use a special curriculum designed to teach English as a second language.
- (4) Immersion. In this model, all instruction is given in the child's second language. Immersion differs from submersion in a number of important ways (see above). It also differs from transitional bilingual education in that the child's first language is maintained through special instruction in that language.

In spite of the large number of studies that have been carried out on bilingual education, we still do not know what models of bilingual education are more appropriate for different subgroups of linguistic minority children. There has simply not been enough systematic research comparing different models. This contrasts sharply with the Canadian experience, where careful, large-scale studies have been carried out on the effectiveness of immersion programs.

Language Use

Turning now to the question of language use in the bilingual classroom, we find a similar lack of systematic research. We do know that there is considerable variation in bilingual lesson delivery approaches. Some classrooms are organized around an alternate language approach, where the teacher delivers a lesson one day (or at one time) in one language and then another day (or another time) in the other language. Another approach is to use concurrent translation, where the teacher immediately translates what is said in one language into the other. The intent of these approaches is to provide the same amount of information in both languages. It often happens, however, that children "tune out" when instruction is in a language they do not understand, since they know that the same information will be given in their first language (Wong-Fillmore, in press). Furthermore, Legarreta (1977) found that the concurrent translation method did not promote equal information in both languages, but that teachers used English 70 percent of the time. In both the alternate-days and the concurrent translation approaches, the teachers used English as the primary language for correcting children.

Townsend (1974) coded the speech of 30 bilingual teachers and aides of Spanish-speaking children in a Texas school and found that they used more questions in Spanish and praised more in English. There was more rejecting of students' answers in Spanish, and more directives were used during English lessons. There were more total responses during lessons in Spanish, but more student-initiated responses during English lessons. Unfortunately, this study has not been replicated in other situations.

Erickson, Cazden, and Carrasco (1979) noted that teachers in the bilingual classes they observed shifted language depending on the content of the activity. Math activities, for example, seemed to permit more noninstructional talk--which took place in Spanish--whereas reading tended to be in the students' nondominant language--English. One practical determinant of the language used for particular content areas is the availability of instructional materials.

Cazden (1979) has suggested that science activities be used in a bilingual classroom as a vehicle for second language learning, since such activities involve the manipulation of objects and clear referents to words and instructions. However, there

is a danger in restricting the domains in which first and second languages are used. Exclusive use of the second language in science and mathematics courses would seem to imply that the non-English first language has no place in the modern technological world. As Fishman and Lovas (1970) have pointed out, such limiting implications have been consistently rejected by national protest movements since the mid-19th century.

In a study of language use in a bilingual classroom, Shultz (1975) reported on a combined first and second grade classroom in a suburb of Boston with 40 native Spanish-speaking students. There were four teachers, two of whom were native Spanish speakers and two of whom were native English speakers. Instruction in the classroom was in both Spanish and English. Nonetheless, there was an important difference in usage:

[Teachers' language use] leaves one with the impression that English was the language which was considered to be somehow "natural," while Spanish was always used in a "marked" way. That is, someone was addressed in English, unless the person did not speak English very well; something was said in English, unless it could not be, as in a Spanish language arts lesson; Spanish was used only if it was absolutely necessary to do so. The "hidden agenda" of this classroom, then, was that it was advantageous to use English, and not advantageous to use Spanish (p. 18).

In a study of teachers in bilingual programs in the Austin, Texas school district, it was reported that 36 percent of the bilingual teachers conducted none or almost none of their instructional activities in Spanish (Ward-Raquel, 1974). What effect does such an approach have on second language learning? The "direct" method has been widely used in adult foreign language instruction; how useful is such a method with children? Again, one confronts the issues relating to submersion vs. immersion programs: Can the direct method approximate the benefits of immersion without leading to the disadvantages of the discredited submersion model? The answer probably depends upon characteristics of the students, the teacher, and the situation in a given classroom.

Curriculum Features

We turn now to the question of curriculum features and specific language-teaching techniques. One central issue relating

to curriculum is the availability of appropriate materials. Caragone (1976) has made the important point that the difference between the varieties of Spanish spoken by students, especially Mexican American students, and the variety of Spanish used in textbooks has pedagogical and psychological implications. If the text used in the class does not reflect the variety of Spanish the child is familiar with, the child will be confused and learning will be hindered. Furthermore, children may begin to feel that their own Spanish is somehow inferior.

There has been a great deal of progress in the development of teaching materials for bilingual programs, especially for American Indian groups (e.g., ERIC Clearinghouse on Early Childhood Education, 1975; Michigan State Department of Education, 1975; National Indian Education Association, 1975). Reading materials have been prepared in nonliterate Indian languages (Spolsky, 1973) and a Dissemination Center for Bilingual-Bicultural Education has been established to select, reproduce, and distribute project-developed materials to bilingual programs throughout the country (Swanson, 1974). Furthermore, materials have been developed for sensitizing teachers to the values of students from different cultural backgrounds.

It is not known to what extent the curriculum should stress formal instruction in the second language. Hatch (1977) argued that there is little evidence to support the use of formal language instruction in bilingual classrooms, but Paulston (1977) disagreed and cited student testimony that formal instruction was extremely helpful to their learning the second language. It may be that the age of the children is a factor here, with older (junior and senior high) students profiting more from formal instruction.

Almost no attention has been given to remediation techniques in bilingual classrooms. Teachers are usually confronted with the problem of dealing with students at vastly different levels of ability in English. Little is known about techniques for "speeding up" the language acquisition process in children whose conceptual knowledge runs ahead of their second language abilities. Nor has such research been devoted to children in bilingual programs with special problems--e.g., those requiring speech and language therapy. Landers (1965) and Nagy (1972) have both noted the importance of remediation in the bilingual curricula, but there have been few studies on this topic.

Unfortunately, there has been little research on the use of various language-teaching techniques, such as games, dialogues, drills, and the like, in bilingual classrooms. Above all, the kind of information teachers would most like to have--information about grade-specific and subject-specific teaching methods for use in bilingual classrooms--is simply not available.

To summarize what has been said so far about language instruction in bilingual classrooms: (1) There are a number of models of bilingual education, but it is not known which models are best for which children. (2) We have some information about actual language use by teachers in bilingual schools, but we know little about what constitutes optimal language use on the part of a teacher for children with different language skills. (3) Finally, we know almost nothing definitive about how to structure the curriculum for children in bilingual classrooms or about specific teaching methods or techniques.

Classroom Composition

A practical question confronting bilingual educators is the desirable ratio of teacher and teacher aides to students. The more small-group tutoring, the greater the need for paraprofessionals and aides. Spanish-speaking and Indian children seem to profit from small-group work (Cazden et al., 1980; John, 1972; Philips, 1972), suggesting that the characteristics of the student population are important in deciding ratio questions.

Although the use of paraprofessionals in bilingual programs is a widespread policy (Patterson, 1976; Seelye and Navarro, 1977), most of the duties of bilingual teacher aides tend to be of a noninstructional nature, and the skills of bilingual paraprofessionals are often not fully utilized. Furthermore, the morale of aides is often poor, especially in cases where salaries are low and funding contingencies uncertain.

From the point of view of the language learner, the ideal situation is one in which there are many fluent speakers of the target language with whom interaction is possible. A major problem for language learners is getting enough exposure to the new language and getting enough practice speaking it with people who know the language well enough to provide appropriate feedback. Even when there are aides and classmates who are willing and ready to provide input and feedback, not all second language learners are able to avail themselves of this assistance. Some

learners lack the social skills needed to initiate contact with English-speaking classmates (Wong-Fillmore, in press).

The experience with submersion programs in this country suggests that when linguistic minority children are in a classroom environment that does not meet their needs for appropriate input and feedback, the result is frustration and failure. The tendency in such a situation is for teachers to focus their attention on the linguistic majority students and to expect little of the linguistic minority students.

Even in bilingual classrooms, however, it is possible for linguistic minority children to experience frustration and failure when their language needs are not met. Teachers and aides typically do not have the time to provide each child with optimal amounts of input and feedback through one-on-one interaction. Especially in open classrooms, where much of the learning takes place in group activities, children have to vie for the teacher's or aide's attention. In this situation, children may learn very little English. In her observations of such a classroom, Wong-Fillmore (in press) found that the children interacted with one another as they went about their largely individualized learning activities each day, but that they did so in their first language. The result was that they used little or no English in the classroom and ended the year knowing little English.

In contrast, children learned well in a classroom in which whole-class and small-group learning activities were teacher-directed. The teacher's language was shaped to the child's needs; children were called on frequently to respond, either individually or as a group. The teacher rarely mixed languages, but occasionally used the children's first language to explain concepts that could not be demonstrated nonverbally and would be difficult for the children to understand in English.

This is not to imply, however, that teacher-directed classrooms are the best means of assuring successful acquisition of English. Wong-Fillmore also reported that successful second language learning took place in a classroom in which student interaction was promoted, so that in addition to the teacher's input and feedback, students were getting much exposure to the language from fellow classmates as well.

In short, it appears that classroom composition--the teacher/aide-to-student ratio and the nature of the class (e.g., teacher-directed or focused on individualized instruction through small-group work)--is less important than the quality of information and responses children receive. Successful second language learning depends not only on the amount of English that children are exposed to but also on how the language is used. These factors, rather than classroom composition as such, are critical.

Classroom Interaction Patterns

We come now to the question of how the organization of participant structures affects second language learning in a bilingual classroom. Ethnographic analyses of bilingual classrooms have shown that the norms for in-class interaction do not necessarily correspond to the norms of the community. Van Ness (1981), in observing an Ahtabaskan Indian teacher with six students, found that the ease of transition from the previous lesson into the reading lesson depended on the degree of congruence between student and teacher communication patterns. Similarly, Boggs (1972) reported that Hawaiian children perceived it as basically unpleasant and risky to answer individually directed inquiries from teachers; if the teacher addressed the whole group, it was safe to respond as a member of the group.

In comparing Indian and non-Indian students' verbal participation under different classroom conditions, Philips (1972) found that the Indian children showed relatively less willingness to perform or participate verbally when they had to speak alone in front of other students. On the other hand, the Indian children were more willing than non-Indian students to participate in group activities that did not create a distinction between individual performer and audience. Furthermore, they preferred to determine for themselves how they were to talk and what they were to say rather than to follow the teacher's guidance. Such cultural interactional patterns are at odds with those of the traditional American classroom, where the student's reply to the teacher's questions provide the one means for the teacher to evaluate the student's performance. In our system the teacher needs to know how much of the material the students have learned. It is not group but individual progress with which teachers are expected to be concerned.

As Mehan (1979) has noted, success in school can be gauged both in terms of academic knowledge and interactional competence.

tence. To be a competent member in a classroom community, the child must learn how and when to communicate with others and must be able to interpret the language, behavior, rules, and other normative dimensions of classroom life. We do not know to what extent interactional competence is "teachable," but to begin to get a handle on this issue it would be important to define as clearly as possible the pattern of participant structure that governs a bilingual classroom.

Cazden et al. (1980) studied a first-grade Chicano bilingual classroom where the children and the teacher came from the same Mexican American community, and reported that the classroom interaction conformed to Mehan's (1979) description of mainstream classroom discourse. What distinguished this class from mainstream classes was the frequent expression of *carino*, a close and caring personalized relationship between teacher and student, characterized by in-group forms of address, frequent use of diminutives, reminders to the children of norms of interpersonal respect, and expressions of the teacher's knowledge of her children's family life. The sense of a shared cultural identity appeared to have had a positive effect. Cazden wrote in her field notes:

I have never seen as well-functioning a first-grade society. By this I mean the extent to which the children know where and when and what to do; there is a minimum time spent in giving directions;...little if any need for negative sanctions; maximum task focus on the part of the children. And yet all this without any sense of strong military-type discipline. The children can take "time out" to chat or dance and never get out of control (Cazden et al., 1980, p. 4).

Most educators recognize the importance of cultural appropriateness for smooth classroom functioning and would agree with the principle that teaching should start from where the child is. Indeed, the schools have recently attempted to address issues of cultural differences. But while a classroom teacher might respect religious beliefs and cultural customs, she may, without knowing it, violate the interactional contexts in which people prefer to learn and to demonstrate what they have learned (Cazden et al., 1980).

Implications for Teaching

This chapter can be summarized in one sentence: Not enough is known about second language learning in bilingual classrooms. There are many reasons for this, the principal one being the diversity in bilingual education in the U.S. Bilingual educators are dealing with children from different language backgrounds, with different abilities in English, from different home environments. There are a wide variety of approaches to bilingual education--little consensus exists, even within the same school, as to how to deal with children learning English as a second language. Obviously, more systematic research is needed in this area--not the kind of one-shot evaluation study, that typifies the field of bilingual education, but long-term studies of language instruction in bilingual classrooms.

Some implications of this discussion:

- (1) A child in a bilingual classroom is engaging in two major learning tasks: learning the language of the school and learning the second language. All children have to adjust to the requirements of the "formal" language of the school; bilingual children have to learn this formal language in a second language. Furthermore, linguistic minority children may not have been prepared by their home environment for the task of learning to deal with decontextualized language to the extent that linguistic majority children from higher socioeconomic backgrounds have been. The task of learning to read is much more difficult for the child who has never been read to, than for the child from a highly literate home. Bilingual teachers need to be sensitive to these differences if they are to give individual children the instruction they need.
- (2) It is obviously important not to move linguistic minority children out of bilingual programs prematurely. This, of course, is not the message that financially hard-pressed administrators (or legislators) want to hear. Yet we are not providing children with equal educational opportunities if we put them in a situation where they cannot cope and are destined to frustration and failure. Teachers should be aware of the "linguistic facade phenomenon"--of the need to distinguish between superficial ability in a language and the ability to deal with that language in a decontextualized and abstract manner. This second aspect of language ability takes time to develop. This does not mean

that children must stay in bilingual programs forever, but that it is better to err on the side of keeping a child in a program too long than to push the child out prematurely.

- (3) There is no one approach to bilingual education that will best promote the second language learning of all children. This would seem to be a fairly obvious conclusion, but the proponents of one method or another constantly claim that only their approach should be universally employed. In some situations--for example, where the children in a school or district come from many language backgrounds--a pull-out ESL approach might be appropriate and effective. Translation might be effective with certain children, but not with others. In some communities, a transitional approach may be preferable; in others a maintenance approach may be more in line with community goals.
- (4) No matter what the approach, there is good reason to suppose that those children who receive the input and feedback they need to progress in the second language will do so; those who do not, will not. Earlier, we made the point that teachers must do what they can to see that children are motivated to communicate in the second language. Motivation may in fact be fostered through special language programs.
- (5) Classroom structures and interaction patterns that are most successful in eliciting student participation are those that result when the methods of interaction chosen by the teacher are most congruent with the student's expectations of culturally appropriate behavior. Ethnographic studies demonstrate the need to take cultural norms and expectations into account in the classroom. Successful classroom management depends upon common understanding of the roles and responsibilities of the teacher and of the student--roles and responsibilities that are culturally defined.

Suggestions for Further Reading

Material on the distinction between the language of the home and the language of the school:

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- Cummins, J. 1979. Linguistic interdependence and the educational development of bilingual children. Review of Educational Research 49: 222-51.
- Olson, D. R. 1977. From utterance to text: The bias of language in speech and writing. Harvard Educational Review 47: 257-81.

Some helpful readings on bilingual education:

- Cazden, C., R. Carrasco, A. A. Maldonado-Guzman, and F. Erickson. 1980. The contribution of ethnographic research to bicultural bilingual education. In J. E. Alatis, ed., Georgetown University Round Table on Languages and Linguistics, 1980. Washington, DC: Georgetown University Press.
- Cohen, A. D. and M. Swain. 1976. Bilingual education: The "immersion" model in the North American context. TESOL Quarterly 10: 45-53.
- Lambert, W. E. and G. R. Tucker. 1972. Bilingual education of children: The St. Lambert experiment. Rowley, MA: Newbury House.
- Skutnabb-Kangas, T. 1978. Semilingualism and the education of migrant children as a means of reproducing the caste of assembly line workers. In N. Dittmar, H. Haberland, T. Skutnabb Kangas and U. Toleman, eds., Papers from the first Scandinavian-German symposium on the language of immigrant workers and their children. Roskilde, Denmark: Universetscenter.
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RESEARCH METHODS IN CHILD SECOND LANGUAGE ACQUISITION

The focus of this chapter is on the ways in which researchers have gone about getting answers to the questions that concern them about child second language acquisition. These questions can be relatively specific--for example, about the acquisition of certain linguistic forms--or relatively general--for example, about the effectiveness of particular approaches to bilingual education. The research methods vary accordingly, from detailed studies of individual learners to large-scale testing involving hundreds of bilingual classrooms. In this chapter, we shall look at three types of research: (1) studies of the learning process, (2) research on language assessment, and (3) evaluation research on the effectiveness of bilingual programs.

Studies of the Second Language Learning Process

There are a number of ways to go about studying the process of second language learning in children. One is to observe individual children over time, recording their utterances, as in the so-called "diary" method, which has been frequently employed in studying bilingual children who are raised from birth with two languages. This method is useful with young children whose utterances are fairly simple; it is more difficult to apply with older children whose utterances quickly become fairly complex.

Instead, researchers involved in longitudinal research with older children do not attempt to "get everything down." In the Ravem (1974) and the Wode (1978) studies, for example, the investigator took language samples systematically over time, and then examined these samples for changes in specific constructions such as the negative or interrogative. The focus in such research is on the developmental sequences that one finds in individual learners or groups of learners.

Longitudinal case-study research is limited in that typically only one or a few subjects are studied at a time. As a result, the question of generalization remains problematic. How

is one to ensure that the pattern found in one or a few children is universally true of all children learning a second language? As we saw in the discussion of developmental sequences, there seem to be some regularities, but there are significant exceptions.

Because of the limitations of longitudinal case studies, some investigators have looked cross-sectionally at second language learners. The focus in this research is on determining how much variation exists in the general patterns of acquisition when many learners are examined at different points in their development. Two lines of research using the cross-sectional approach have been particularly important for our understanding of child second language learning: the "morpheme studies" and "error analysis." Their importance, it turns out, may be more methodological than substantive.

The "Morpheme" Studies

The morpheme research is based on the work of Brown (1973), who found that children learning English as a first language follow a common "invariant" sequence in the acquisition of 14 functor words, e.g., noun and verb inflections, articles, auxiliaries, copulas, and prepositions. In a number of studies of child second language learners, Dulay and Burt (1973, 1974b) found that second language learners, regardless of their first language, followed a similar developmental sequence.

Dulay and Burt (1973) used the Bilingual Syntax Measure (Burt, Dulay, and Hernandez, 1975) to elicit speech samples from 151 Spanish-speaking children living in Tijuana, Mexico; California; and New York. Even though the three groups differed in their exposure to English, they showed roughly the same patterns in their use of the functors in obligatory contexts. These patterns were similar to, but somewhat different from, the patterns Brown had observed in monolingual children. Dulay and Burt attributed this difference to the cognitive abilities of children at different stages of their development.

In a subsequent study, Dulay and Burt (1974b) compared Chinese- and Spanish-speaking children in their use of 11 English functors to determine whether the accuracy order was the same for children from different linguistic backgrounds. The findings indicated that there was a high degree of similarity across language groups. This research was interpreted as suggesting

that universal cognitive mechanisms are the basis for the child's organization of the target language and that it is the second language system, rather than the first language, that guides the acquisition process.

The morpheme studies have come under attack from a number of directions. The findings may be instrument-specific. Porter (1977) gave the Bilingual Syntax Measure to monolingual English-speaking children and found that they displayed an acquisition order more resembling the order found in second language learners than the order Brown (1973) had found in first language learners of English. Since the Bilingual Syntax Measure was the instrument used in most of the morpheme research, the findings might be an artifact of the use of this instrument.

Furthermore, the findings of the morpheme studies are not, strictly speaking, related to acquisition sequence, but rather to accuracy of use, since the studies are cross-sectional in nature and measure the percent of times subjects supply morphemes correctly in obligatory contexts (McLaughlin, 1978). Several longitudinal studies have yielded orders of acquisition that did not correlate with the orders of accuracy of use obtained in cross-sectional research (Hakuta, 1976; Huebner, 1979; Rosansky, 1976).

There is also the possibility that the learner's first language plays an important role in determining the order in which second language learners acquire English morphemes. Hakuta and Cancino (1977) have argued that the semantic complexity of the morphemes may vary depending on the learner's native language. They cited research that indicated that where a second language learner's first language does not make the same discriminations as the target language, more difficulty in learning to use these morphemes occurs than is the case for learners whose first language makes the semantic discriminations (e.g., Fathman, 1975; Hakuta, 1976).

Error Analysis

Initially, the argument from the error analysis studies was that first and second language learning involve common processes. Dulay and Burt (1972, 1974a) cited the evidence of case studies and cross-sectional research that indicated that the majority of errors that children make reflect the influence of the target second language more than the child's first language.

For example, data from Spanish-speaking children who were learning English showed that the majority of errors were developmental in nature--that is, most errors were of the type that monolingual children make when they are acquiring English (Dulay and Burt, 1972). Even errors that presumably reflect the child's first language could, Dulay and Burt argued, just as well reflect overgeneralizations, which though not found in the speech of monolingual children, do correspond to strategies used by monolingual children. For instance, errors such as "Now she's putting hers clothes on" are not found in the speech of native speakers of English, but could be overgeneralizations by the second language learners of the English possessive /-s/. In contrast, overgeneralizations reflecting Spanish constructions such as "biggs houses" and "talls boys" were not found in the data.

In a subsequent study, Dulay and Burt (1974a) examined speech samples from Spanish-, Chinese-, Japanese-, and Norwegian-speaking children acquiring English as a second language. The types of mistakes these children made were strikingly similar. Dulay and Burt argued that the similarity of errors reflected the use of a "creative construction" process, similar to that used by child first language learners. In this process children gradually reconstruct rules for the speech they hear, guided by strategies that derive from putative innate mechanisms that cause them to formulate certain types of hypotheses about the language system being acquired, until the mismatch between what they are exposed to and what they produce is resolved.

Like the morpheme studies, the early research on error analysis has come under fire. Schachter and Celce-Murcia (1977) have pointed out that it is difficult to be certain precisely what type of error a second language learner is making or why the learner makes it. One and the same error can frequently be attributed to intralingual (reflecting developmental mistakes found in monolingual speakers) and interlingual factors (reflecting the influence of the learner's first language). Indeed, this may not be an either/or proposition: there is evidence that some errors are the result of the interaction of both factors (Andersen, 1978).

Hakuta and Cancino (1977) have argued that error analysis rests on the questionable assumption that an error is an appropriate unit of analysis. Research indicating that errors in a second language learner's corpus are predominantly intralingual and not interlingual usually involves coding the omission of high frequency morphemes--e.g., nouns, and verb in-

flections and the verb to be--as intralingual errors. Since interlingual errors often involve large constituents or changes in word order, Hakuta and Cancino maintain that the relative opportunity of occurrence of the two types is not equivalent. Furthermore, it may well be that second language learners simply avoid certain linguistic structures on which they would be likely to make errors (Schachter, 1974). It is conceivable that such avoidance tendencies reflect structural differences between their first language and the target language.

Another problem with the error analysis research is that it is typically based on cross-sectional samples. There are relatively few studies that examine whether specific errors are prevalent at specific points in time or whether certain errors persist longer than others. There is some evidence that interlingual errors appear primarily at the early stages of development (Taylor, 1975) and that they occur when learners are faced with particularly intransigent problems (Wode, 1978).

To summarize, a similar reaction occurred in both the morpheme studies and the error analysis studies. The initial studies, indicating that the acquisition of grammatical constructions followed the same developmental sequences for first and second language learners, was replaced by a more tempered view. It did not always seem to be the case that first and second language learning follow similar patterns, and, in any event, the research was methodologically suspect. Currently, as we saw earlier, there seems to be some consensus that there are both similarities and differences between first and second language learning.

Experimental Approaches

One of the reasons for the appeal of cross-sectional approaches to child second language research was the availability of enough instances of the constructions one wished to study, in contrast to the longitudinal studies. The Bilingual Syntax Measure assured that each child would provide information about the specific morphemes under investigation. A number of other techniques have been used to explore the child's ability with respect to specific aspects of language use.

For example, in a study we mentioned briefly earlier, Natalicio and Natalicio (1971) used Berko's (1958) method to determine the rules children followed for forming English plurals.

Berko gave the child a nonsense word and a picture that corresponded to that word. The child's task was to form a new combination, using the nonsense word as a starting point. For example, the child might see a picture of a "tör" and be asked to name a picture with two of these creatures. Or the child might see a man who is "spowing" and who did the same thing yesterday. Then the child would be asked to tell what the man did yesterday. The technique is useful to test the child's ability to extend knowledge of morphological rules to new cases.

Another approach is to ask a child to retell in a second language a story told in the first language. This procedure also enables the researcher to determine the child's ability to deal with specific constructions, since the story can be phrased so as to require the use of these constructions (e.g., possessives, negatives, plurals). However, the child may be able to avoid using the constructions in question by paraphrasing or retelling the story in a different manner. This technique also depends too greatly on the child's ability to remember details.

Recently the case has been made for the use of miniature artificial language experiments to get at the way in which second language learners formulate the rules of a target language (McLaughlin, 1980b). Learning a miniature artificial language is like learning a second language in that the learner comes to the task already knowing a first language and having that language to fall back on. Examining the strategies learners use with a miniature language allows the researcher to examine specific aspects of the learning process, while at the same time holding other aspects constant. For example, the miniature language could be so constructed as to be very different from (or similar to) the child's first language. In which case does the child learn the fastest, and does the first language interfere more in one case than in the other?

Tarone (1979) has made the important point that style shifting occurs when the same person responds in different contexts. This is probably the reason why some researchers have reported different patterns of results in natural and experimental situations (e.g., Felix, 1977; Shatz, 1977). The more attention the learner is paying to speech and the more formal the situation, the more speech seems to be "invaded" by the first language and the more interference errors (Tarone, 1979). This is obviously a serious issue when generalizing from the results of experimental research and is one reason why it is best to use a number of methods, including observation of naturally occurring speech, to assure a more adequate view of the language-learning process.

Classroom Research

There are many different bilingual classrooms in the United States. In fact, it is safe to say that each classroom is unique. In view of this diversity, is it possible to provide an adequate analysis of what happens in the bilingual classroom--or in any classroom, for that matter? Obviously, to understand what goes on in the classroom requires a broad perspective. It is not enough to take time samples of the frequency of occurrence of certain categories of behavior. This is a beginning, but such an approach is not likely to capture the flavor of the inner life of the schools. By treating the behavior of the teacher and the student as isolated and discrete activities, information is lost about the sequential flow of classroom activities and about the feedback process that occurs in the interactive exchange. Nor do time-sampling tabulations take account of the surrounding context of events, the goals of the program and of the teacher, or the interrelationship of nonverbal and verbal behavior.

Researchers convinced that a more contextual perspective is needed to understand the social life of the classroom have taken what has become known as an "ethnographic" approach to classroom analysis. Such an approach examines the interactional activities of teachers and students as socially organized events. Ethnography is concerned both with the planning of educational programs and the "initial knowledge" upon which programs are based; it is also concerned with the conduct of the program and with patterns of meanings that emerge during the course of the program (Nyman, 1981).

The concept of ethnography comes from anthropology and, strictly speaking, is a way of doing anthropology. Indeed, ethnography refers to the ideal anthropological case study--ideal in that it is comprehensive and detailed. The ethnographer wants to make explicit relationships and patterns that others leave implicit. In the school context, this means examining the values and goals of the school and the interaction patterns of individual teachers and their students.

As we have seen, there have been a number of recent ethnographic analyses of bilingual classrooms, and the number of such studies is increasing. The advantage of such research is that it is relatively unstructured and allows participants to become aware of patterns of behavior that are "beyond the fringes of consciousness." The disadvantage is that good eth-

nography demands extremely sensitive observers, individuals who are able to discern the subtle nuances of other people's behavior and who are aware of their own biases and orientation. Furthermore, there is the question of the generalizability of ethnographic findings (Long, 1980). Each study involves a unique set of actors, and unique patterns of relationships between teachers and students; how is one to know that the same or even similar patterns exist in other classrooms?

Ideally, research on classroom learning will take individual differences and situational differences into account. This means identifying functional characteristics of learners--those strategies and tactics that define different learning styles. It also means working out a taxonomy of situations that takes into account communication pressures, social relations, and the nature of input. Language learning is the result of a multiplicity of interacting factors. The success of research on classroom learning depends on the ability of investigators to identify relevant learner (person) variables and to determine how they interact with various instructional (treatment) methods (McLaughlin, 1980c).

The first of these tasks--identifying relevant learner characteristics--has proven fairly difficult, although there has been some recent progress. There have been some promising studies of individual differences in second language learning in children (Genesee, 1978; Snow and Hoefnagel-Hoehle, 1979) and on cognitive styles (De Avila and Duncan 1980). We do not know very much, however, about how person variables interact with treatment methods. There may, in fact, be a fairly complex relationship. It may be that some learners use a particular style because it has served them well in the past, but may switch to another style when confronted with novel instructional techniques. For example, students who have approached language learning by memorizing the rules for grammar may adopt new tactics when the instructional situation stresses communication. In such a case, the treatment has affected the learning style, so that it is more appropriate to have a dynamic model of learning styles than to view them as static personality traits (McLaughlin, 1980c).

Furthermore, a large number of other variables need to be considered in research on classroom language learning. Results from native-born linguistic minority children should be compared with those from immigrant linguistic minority children. Students with different first languages from different cultures should be compared. Do some languages interfere more than others

with the acquisition of English? Then, there is the teacher factor: What characteristics of the teacher--age, sex, training, personality, creative ability, ethnicity--affect second language learning in the classroom? What are the effects of degree of urbanization and of socioeconomic status? In spite of a great deal of research on bilingual education, we know very little about any of these factors. An adequate predictive model will most likely be a multivariate one that takes all of these factors--and others--into account.

Language Assessment

A major research issue in second language learning is how to assess improvement in a child's language. This question is also important for a number of practical reasons, since critical decisions about the educational future of linguistic minority children are made on the basis of language proficiency measures. This was not always the case. It used to be that decisions about the education of children were made by their parents and teachers.

One of the educational developments witnessed in the 1970s, which has permeated every classroom and school district across the nation, has been the gradual increasing reliance on testing instruments rather than teacher judgments as sources of information for student placement and assessment. Indeed, teachers face a constant tension between validating their perceptions of their students' progress and that reported on standardized achievement tests (Arias in Dieterich and Freeman, 1979, p. vii).

This state of affairs is especially apparent in the case of second language instruction. Part of the difficulty is skepticism about the tests. Teachers often find their own practical experience with individual students contradicted by test results. Furthermore, teachers are often called upon to administer tests of which they have little understanding. They may also feel they are being pressured to prepare their students for such tests. To many teachers, the tests seem to put a premium on cultural values and test-taking skills that their students do not possess.

Dominance or Proficiency

One approach to language testing has been to determine which language is "dominant" for the child. Language dominance tests are used to place students in non-English or English-medium reading and subject matter classes. Yet there is no common agreement among linguists, psycholinguists, and language test developers as to what constitutes "language dominance" and "language proficiency" (Silverman, 1976), although there is some agreement that language dominance involves the comparison of skills in two or more languages (or degree of bilingualism), whereas language proficiency generally refers to the degree to which an individual demonstrates linguistic competence in a single language.

Psycholinguists have developed a number of measures to determine degree of bilingualism. The most common are word association tests and reaction time on picture-naming tasks. However, most of these measures are not readily available or practicable for the administrator or teacher interested in establishing and evaluating bilingual programs at the elementary school level. Furthermore, such instruments provide at best indirect evidence as to dominance and degree of bilingualism, since they do not attempt to measure linguistic skill in either language directly, but infer the relative level of overall proficiency by measuring differential performance on a quasi-linguistic task (Burt and Dulay, 1978).

Researchers within the field of education as well as testing companies have therefore produced language dominance instruments designed to be useful to the classroom teacher. These range from interview schedules to assess language use in various contexts to comprehensive oral language assessment techniques. Unfortunately, there are serious problems with all these tests (Dieterich and Freeman, 1979). Furthermore, dominance testing is open to the criticism that dominance in one aspect of language does not mean dominance in another. A child may be English dominant in some situations or in, say, syntax, but may be Spanish dominant in other situations or in pronunciation (Silverman, 1976).

Most researchers today believe that language dominance should be assessed via relative proficiency. As Burt and Dulay (1975) argued, it seems more advisable to rely on instruments assessing actual level of proficiency in both languages than on instruments assessing "dominance." In a certain sense, then,

the notion of language "dominance" is scientifically meaningless. What is important is relative proficiency.

Indeed, even the notion of relative proficiency may be misleading. A child can be more proficient in English than in a first language and still not be proficient enough to go into a classroom where English is the sole medium of instruction. There are many children from linguistic minority backgrounds who are "English dominant." This group consists primarily of second and third generation Americans or immigrants who use English as their primary means of communication. For these children, the important question is not which of their languages is dominant or relatively more proficient, but whether their English is adequate for them to participate in an all-English curriculum.

Assessing Language Proficiency

As we have just seen, language proficiency is not a unitary concept. Most bilingual individuals are more or less proficient in different aspects of their two languages in different situations. This means that the most adequate way of measuring language proficiency is through a battery of tests that measures communication skills, use in various social contexts, and linguistic structure. The problem is that such a test battery is likely to be long and to require skillful administration--demanding time and training that busy classroom teachers lack. The result is that practitioners will continue to use quick and easy tests, in spite of their proven inadequacy.

The most frequently used tests have a number of deficiencies (cf. Burt and Dulay, 1978; Chastain, 1979; Dieterich and Freeman, 1979; Goodman, Goodman, and Flores, 1979; Meier, 1973; Rosansky, 1979). One of the major deficiencies of language proficiency tests is their lack of reliability. According to the committee of experts who evaluated the major tests in use in bilingual education programs (Bordie, 1979), none of the tests provided information about all three of the critical types of test reliability: (1) test-retest reliability--whether retest scores with the same instrument correlated with original test scores; (2) internal consistency reliability--whether individual components of the instrument are in coordination with all other components of the test and the test as a whole; (3) inter-rater reliability--whether different raters will provide scores that are consistent with each other.

There are similar inadequacies with test validity. None of the major tests provides sufficient information about (1) content validity--whether the material in the test is relevant to the item being tested by the instrument; (2) criterion-related validity--whether the material in the instrument is directly related to similar materials used with similar groups; (3) construct validity--whether the manner in which the instrument and its components are constructed is closely related to the material and knowledge being tested; (4) predictive validity--whether the test accurately predicts some independent but presumably relevant aspect of students' future performance (e.g., performance on standardized achievement tests or success in language-related skills as judged by a teacher).

Most tests contain serious defects in test design. The principal problems: (1) quantitative measures are derived from qualitative data--often without sufficient justification for the procedures used; (2) lack of control is inferred from lack of performance--failure on a test item being no sure indication that the student does not know or cannot use the item; (3) test items are not adequate indices of the student's linguistic creativity--and often, when attempts are made to assess linguistic creativity, the test actually measures imagination or verbosity.

There are serious problems involved in applying the tests in classrooms with linguistic minority children. A number of authors have made the point that traditional testing procedures and instruments tend to depress the performance of such children (De Avila and Havassy, 1974b; Fishman et al., 1967; Moreno, 1973). The tests have usually not been validated on such children and often contain items and language that are not understood by them.

Related to this is the question of the nature of the testing situation. For many linguistic minority children, language testing is foreign and anxiety provoking, especially in situations where individual competition is emphasized. In the one-to-one student/assessor relationship, the student's language fluency tends to be less than in informal peer group settings. The "unnatural" character of the testing situation and the artificiality of responding to decontextualized stimuli are especially confusing for some students, e.g., recent immigrants from Mexico.

In their discussion of oral language proficiency testing, Burt and Dulay listed six criteria for evaluating the adequacy of such tests (1978, pp. 187-90):

- (1) The parts of a language dominance test that assess each language must not be mere translations of each other. This reflects the facts that languages differ in their linguistic structure, and the distinctions made in one language are not necessarily the same as those occurring in another language. What appear on the surface to be the same structures may be expressed with vastly differing degrees of complexity in two different languages.
- (2) The content of a language measure must not be outside the student's experience or cultural customs and values. An example given is the use of a northern winter scene with skis, sleds, a snowman, and a snowball fight. Students who have had no experience with northern winters are at a disadvantage because of the unfamiliar content.
- (3) The responses required by test items must not violate conventions of natural discourse. Here the example is the use of yes/no questions such as "Is this a pencil?" designed to elicit the whole sentence "Yes, it is a pencil." This is not the way people talk in natural discourse and so to require such a statement for a correct score on the test item unfairly penalizes students for responding as they do in natural discourse.
- (4) A distinction must be made between the quantity and the quality of the student's response. Open-ended and imprecise questions lead to rewards for superficial verbosity and penalize students who do not understand the intent of the question or who are not as comfortable with the examiner.
- (5) Age and grade norms cannot be used alone in interpreting bilingual test scores. A norm-referenced approach penalizes students because of their lack of contact with the language. New immigrant students should not be compared with students who have always lived in the U.S. In order to provide meaningful comparative data, the scores of linguistic minority students must be evaluated against the performance of other students of the same age and amount of exposure to English.

- (6) Language proficiency measures must meet the usual psychometric requirements--especially reliability, validity, and sampling requirements.

It is safe to say that none of the language proficiency instruments now in use in bilingual education programs meet all these criteria.

Assessing Language Proficiency in the Classroom

Some researchers feel that language proficiency is a unitary concept. Oller (1978; Oller and Perkins, 1978) has argued on the basis of a large number of studies that "there exists a global language proficiency factor which accounts for the bulk of the reliable variance in a wide variety of language proficiency measures" (1978, p. 413). On the other hand, Cummins (1980a) has noted that not all aspects of language proficiency are related to cognitive and literacy skills. As we saw earlier, Cummins distinguished between those skills that relate to the literacy-related aspects of language and those that relate to interpersonal communication. One piece of evidence in support of Cummins' argument is Wells' finding (1979) that the oral language production of preschoolers is only weakly related to later acquisition of reading skills in school.

Cummins is not alone in arguing against a unitary notion of language proficiency. Burt and Dulay have also espoused this position in distinguishing between linguistic manipulation tasks, "where the focus of the student is on performing the conscious linguistic manipulation required by the task," and a natural communication task "where the focus of the student is on communicating something to someone else--an idea, some information, or an opinion in a natural manner" (1978, p. 184). They reported that tests directed at these two aspects of language proficiency give quite different results in terms of the quality of the language produced.

If one subscribes to Cummins' views that there is more than one aspect to language proficiency and that it is the cognitive/academic dimension that is closely related to the development of literacy skills in first and second languages, then it is the measurement of this dimension that is especially important in bilingual education programs. Among the procedures believed to measure cognitive/academic aspects of language are (1) linguistic manipulation tasks such as oral and written cloze tests

and tasks of imitation, translation, substitution, and completion and (2) measures of reading comprehension, grammar, vocabulary, dictation, free writing, and second language skills that are taught in a formal classroom setting. Certain aspects of oral discourse may also assess literacy-related skills. Cummins argues that measures purporting to measure oral language skills may have very little in common with each other. Whereas oral cloze tests are likely to be good measures of cognitive/academic aspects of language, oral fluency measures are not. Unfortunately, most of the oral language proficiency measures now in use attempt to measure "natural speech" and to exclude from the test the "formal" variety of language that is found in the classroom and in textbooks.

Evaluation Research

A major area of research in bilingual education is the area of program evaluation. Policy decisions at all levels are made on the basis of judgments about the effectiveness of bilingual education. These judgments can only be made on the basis of careful evaluation research.

The Debate about Effectiveness

In general, large-scale evaluation research has provided a rather bleak picture of the effectiveness of bilingual education programs. The most significant (and widely criticized) evaluation study was that conducted by the American Institutes for Research (AIR) (Danoff, 1978). The AIR research was carried out to determine the impact of bilingual education on a national sample of students in Spanish/English programs. As of 1975, the programs were in either their fourth or fifth year of funding under Title VII. A total of 38 sites were studied, involving 11,500 students in 384 classrooms in 150 schools. Children were tested in English and Spanish language arts, in mathematics, and in attitudes toward language use and school.

Five months after the pretest, the students were given the posttest on each measure. The scores of children in bilingual programs were compared with those of control children not in bilingual programs. While there was a significant improvement in Spanish reading for the children in the bilingual program, there were no gains in English or mathematics and no more posi-

tive attitudes toward English language use or toward school. Children who experienced more group work in bilingual classrooms were found to have better gains in mathematics, English, and Spanish language skills. The proportion of Hispanics in the classroom had no effect on the scores.

Questionnaires from teachers indicated that 86 percent of the children stayed in bilingual programs even after their English proficiency was "good." This was interpreted as running counter to the intent of legislation on bilingual education:

These findings reflect Title VII activities which run counter to the "transition" approach strongly implied in the ESEA Title VII legislation (Danoff, 1978, p. 10).

("Good" proficiency was not defined and teachers' ratings are questionable since students in the bilingual programs tested at the 20th percentile in reading English.) Finally, the report stated that the per-student cost of bilingual education programs was \$1398, as compared with \$1022 for children not in bilingual education programs.

These findings did not do the cause of bilingual education any good. Other large-scale evaluation research carried out at about the same time by the General Accounting Office and the National Institute of Education painted an equally bleak picture. The overall impression derived from evaluation studies of bilingual programs on the national level is rather negative. These studies, however, are not without their problems.

The principal problem with large-scale evaluation studies such as the AIR project is that they tend to treat bilingual education as an undifferentiated whole. By providing only statistical averages on a national sample, the AIR report failed to distinguish between good and bad programs (Gray, 1977). Nor did the AIR report provide information on the level of implementation for a bilingual program as defined in the Title VII legislation (O'Malley, 1978). As a result, it is not possible to know the extent to which the "bilingual programs" studied were in fact complying with criteria for a genuine bilingual program. This is an especially problematic issue with respect to bilingual programs that were established before adequate teacher training was available and before curriculum materials had been developed.

Another serious problem was that the initial comparability of bilingual and nonbilingual groups was not clearly established (O'Malley, 1978). The experimental and control groups were not matched with respect to language dominance, since the bilingual classrooms contained 74 percent non-English-speaking or bilingual children, whereas the control classrooms contained only 17 percent non-English-speaking or bilingual children.

An additional important limitation of the AIR study is that the pre- and posttest measures were made over a five-month period, which is a very short time to assess the effectiveness of a bilingual education program. Statistical procedures, especially the use of gain scores, have been criticized by a number of investigators (Gray, 1977; IDRA, 1977; O'Malley, 1978). Questions have been raised about the methods used to estimate pre-student cost of bilingual education programs (IDRA, 1977). It has also been argued that the procedures used to estimate the percentage of programs operating maintenance rather than transitional programs were based on questionable and unverifiable operations (O'Malley, 1978).

More positive results have been obtained in some small-scale evaluation studies of specific programs. By ~~small-scale evaluations~~, we are referring to ~~evaluations of specific bilingual~~ education programs. Troike (1978), drawing on data collected by the Center for Applied Linguistics, maintained that "quality" bilingual education programs can meet the goal of providing equal educational opportunity for students from non-English backgrounds. He cited twelve successful programs, of which the following three are representative examples:

Lafayette Parish, LA (French): Students in grades K-3 in the French-English bilingual program performed as well as or significantly better than a control group of students in the regular program in all areas tested, including reading and reading readiness, linguistic structures, writing, math concepts, and social science.

Artesia, NM (Spanish): On the Comprehensive Test of Basic Skills, Spanish-dominant children in the bilingual program scored significantly higher than the control group in grades 3 and 4 in English and reading, while even English-dominant children in the program scored higher than their control group. In general, the control group children continued to lose positive self-image while the bilingual program children maintained or increased it.

Rock Point, AZ (Navajo): Stanford Achievement Test scores from 1975 for reading achievement in English in the 4th and 5th grades were only .6 and .5 years below national norms, respectively, compared to 1.3 and 1.6 years below in 1972 when bilingual education began. Fifth-grade reading scores for other BIA Navajo Area schools (without bilingual education) are 1.6 years below Rock Point. 1976 test scores showed even better results: fifth graders were only one month below the national norm, and sixth graders were one month above the national norm (cited by Troike, 1978, pp. 6-8).

In a discussion similar to Troike's, Zappert and Cruz (1977) defined what they considered "quality" bilingual education programs. Of the 66 findings in 3 evaluations and 12 research studies that met their criteria, only 1 percent were negative, 58 percent were positive, and 48 percent were neutral. As these authors pointed out, a neutral effect is not a negative result with respect to bilingual education:

A non-significant effect, that students in bilingual education classes are learning at the same rate as students in monolingual classes, demonstrates the fact that learning in two languages does not interfere with a student's academic and cognitive performance. Students in bilingual classrooms have the added advantage of learning a second language and culture without impeding their educational progress (p. 12).

In short, reports dealing with "quality" bilingual education programs present a very different picture from the one obtained through large-scale evaluation research. In both large- and small-scale studies, good and bad programs should not be evaluated in an undifferentiated way. It is possible to set up criteria for defining "true" bilingual programs--for example, criteria as to the use of the second language in the classroom. In many so-called bilingual classrooms, the second language is used far less than half the time, in some cases almost never. Similarly, if teachers have not been adequately trained, or if satisfactory instructional materials are not available, then the program can be eliminated as not meeting the basic requirements for a bilingual educational program.

Issues in Evaluation Research

The first issue for evaluation research on bilingual education, therefore, is to determine as objectively as possible

whether the program in question meets the requirements for bilingual education. One of the major reasons for the lack of a consensus in this country concerning bilingual education is disagreement about objectives. To understand how this came about, it is necessary to appreciate the climate in which the Bilingual Education Act was framed. There was at the time general agreement about the failure of the school system to educate non-English-speaking minority children. Congress was concerned that these children be provided "equal opportunity." The impetus here was Title VI of the Civil Rights Act, passed in 1964, and the consequences were the Bilingual Education Act of 1968, the Title VII amendment to the 1965 Elementary and Secondary Education Act of 1965, and the Bilingual Education Act of 1974.

While the objective of most legislators who voted for bilingual education was the development of compensatory programs designed to allow students to learn English as quickly as possible so as to be able to move into monolingual classrooms ("transitional" programs), the aim of many members of ethnic groups involved in implementing bilingual programs was stable-bilingualism with maintenance of the home culture and language ("maintenance" programs). The guidelines for Title VII programs were sufficiently loose so as to allow for both transitional and maintenance interpretations.

In addition to disagreement about goals, there is the question of appropriate outcome indicators. As we have seen, there are serious limitations to all assessment procedures currently in use in bilingual education. Furthermore, the use of any standardized test is problematic. Standardized tests are easy to come by and are used in most evaluation research. Their appropriateness, however, is questionable since they tend to be used as the single measure of language proficiency, and other sources of information about the child's linguistic abilities are ignored. This is especially true of more qualitative aspects of language use, such as creativity and originality, which cannot be measured easily (Swain, 1978).

Any testing procedure is only an index of short-term outcome. What of long-term outcome? Paulston (1978) argued that the main reason why evaluations of bilingual education programs are less than impressive in demonstrating their success is that not all the relevant criteria are examined. She urged the use in evaluation studies of such data as dropout rates, employment figures upon leaving school, figures on drug addiction and alcoholism, suicide rates, and personality disorders.

Another issue in evaluation research is the question of research design. The possibilities range from quasi-experimental designs to rigorous experimental designs. At the quasi-experimental extreme are studies that involve simple pre- and posttests on the bilingual group (one-group pretest-posttest design). While such designs are frequently used to compare the performance of bilingual program students with stated standards of performance, there are serious problems of interpretation, since it is impossible to rule out alternative explanations for any differences that are found. That is, the obtained results could be due to the bilingual experience, but could also be due to experience with the testing instruments, statistical regression, maturation, and a number of other factors.

For this reason, an experimental design--one involving a control group--is preferable to a quasi-experimental design. The problem of finding an adequate control group is enormous, however, and in some cases may prove impossible. Moreover, by placing some children in a control group, one deprives them of the opportunity of taking part in a bilingual program. Consequently, a partial experimental design (random within stratum) is sometimes used. In this design, the children most in need of a bilingual experience are placed in the program, and children whose need is less great are divided at random into two equivalent groups for purposes of comparison.

The most frequently used experimental design involves comparing children in a school that has a bilingual program with children in a school where no bilingual program exists. In this way it may be possible to match children in IQ and socioeconomic variables. However, the fact that the children are in two different schools, one offering bilingual education and the other not, may jeopardize the validity of the findings. It may be that the school that offers the bilingual program differs from the school that does not in a number of significant ways, some of which may affect the outcome. Teachers in the bilingual school, for example, might come from the students' community, whereas this may not be the case for the teachers in the school that does not offer the bilingual program. This fact in itself, rather than a bilingual program, may contribute to superior performance among children in the bilingual program. Moreover, there is the well-known "Hawthorne effect," whereby the students' knowledge that they are in a special program may produce changes in their performance.

Thus, even when rigorous experimental designs are used in evaluation research, there are difficulties in interpreting the

results. Macnasara (1974) went so far as to argue that the factors affecting the outcome of a bilingual education program are so complex that it is impossible to generalize the results of any bilingual education program evaluation to other settings, regardless of the research design used.

A more sanguine view is that with an adequate design--e.g., random within stratum--much could be learned about the effectiveness of bilingual programs. The problem is that such studies are few and far between. Instead, there is a plethora of poorly designed, short-term evaluation studies carried out to meet granting agency requirements. Such studies contribute little to our understanding. In the meantime, the debate about bilingual education continues.

Implications for Teaching

The discussion in this chapter has focused on research issues in second language acquisition. This research takes many forms, from diary studies of individual second language learners to large-scale evaluation research. Teachers have much to learn from this research, but their reading of the literature should be a cautious one. As we have seen, there are serious limitations to much of the research on second language learning. Case study data are restricted in generalizability; cross-sectional research does not necessarily show the developmental progress of any one learner; language assessment measures are imperfect; evaluation research has been found wanting by both the proponents and opponents of bilingual education.

The following implications can be drawn from this discussion:

- (1) Teachers should be aware of the need to distinguish between different aspects of language use. The child in school must learn to deal with the "formal" language of the classroom. This means learning to decontextualize language, to treat language as an object of study in its own right, to develop metalinguistic awareness. In Cummins' terms, the child must learn literacy-related skills--the more technical aspects of language, such as spelling patterns, syntactic rules, and reading and writing skills. Decisions about a child's linguistic ability in the school context must take these abilities as the prime database. A child may have a superficial fluency in a second language and

still not be able to function adequately in that language in a school setting.

- (2) It is possible, however, to overemphasize literacy-related language skills. To stress the importance of the ability to deal with decontextualized language does not imply that interpersonal communicative skills are not necessary in the school context. In fact, certain aspects of natural communicative skills are important for appropriate functioning in a classroom setting. There is more to school than academic content. The child has to develop the communicative skills needed for success in this particular interaction context. Ethnographic studies reveal that there is a core interactional pattern that exists in American classrooms that children must learn. This requires linguistic and social skills that depend in part on the child's level of communicative competence in the language(s) used in the classroom. The skills involved here are more interpersonal than decontextualized. Adequate testing instruments must take this aspect of the child's language proficiency into account as well, ideally by assessing the child's ability to function in classroom interaction situations.
- (3) Teachers should realize that the issue of the effectiveness of bilingual education in the United States has not been decided. We simply do not know what works and what does not because too few well designed studies have been conducted. This is partly because of a piecemeal approach to evaluation rather than systematic large-scale longitudinal studies, and partly because there is so much diversity in bilingual education in this country. We do not know what works and what does not for children of different backgrounds and with different learning styles. Adequate answers about the effectiveness of bilingual education will be provided only through research that considers both the person and the treatment, and the interaction between them.
- (4) It is important, however, not to oversell bilingual education. No single educational program can accomplish all that the various advocates of bilingual education promise.

Bilingual education is bilingual, but it is also education. We have focused throughout this discussion on the bilingual--the language--aspect, but there are general educational issues that are even more important. It may be possible to devise an optimal bilingual education program

in terms of the acquisition of the second language (and the maintenance of the first), but if the quality of education is otherwise poor, we are doing bilingual children a disservice. In the end, it is the education that the child receives that matters. The real crisis in American education is not bilingual education for some children; it is quality education for all children.

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