CHAPTER 3

AGE AND ACQUISITION

THE INCREASED pace of research on first language acquisition in the last half of the twentieth century attracted the attention not only of linguists in many subfields but also of educators in various language-related fields. Today the applications of research findings in first language acquisition are widespread. In language arts education, for example, teacher trainees are required to study first language acquisition, particularly acquisition after age 5, in order to improve their understanding of the task of teaching language skills to native speakers. In foreign language education, most standard texts and curricula now include some introductory material on first language acquisition. The reasons for this are clear. We have all observed children acquiring their first language easily and well, yet individuals learning a second language, particularly in an educational setting, can meet with great difficulty and sometimes failure. We should therefore be able to learn something from a systematic study of that first language learning experience.

What may not be quite as obvious, though, is how the second language teacher should interpret the many facets and sometimes conflicting findings of first language research. First language acquisition starts in very early childhood, but second language acquisition can happen in childhood, early or late, as well as in adulthood. Do childhood and adulthood, and differences between them, hold some keys to second language acquisition (SLA) models and theories? The purpose of this chapter is to address some of those questions and to set forth explicitly some of the parameters for looking at the effects of age and acquisition.

DISPELLING MYTHS

The first step in investigating age and acquisition might be to dispel some myths about the relationship between first and second language acquisition. H. H. Stern (1970, pp. 57–58) summarized some common arguments that had been raised from

time to time to recommend a second language teaching method or procedure on the basis of first language acquisition:

1. In language teaching, we must practice and practice, again and again. Just watch a small child learning his mother tongue. He repeats things over and over again. During the language learning stage he practices all the time. This is what we must also do when we learn a foreign language.
2. Language learning is mainly a matter of imitation. You must be a mimic. Just like a small child. He imitates everything.
3. First, we practice the separate sounds, then words, then sentences. That is the natural order and is therefore right for learning a foreign language.
4. Watch a small child's speech development. First he listens, then he speaks. Understanding always precedes speaking. Therefore, this must be the right order of presenting the skills in a foreign language.
5. A small child listens and speaks and no one would dream of making him read or write. Reading and writing are advanced stages of language development. The natural order for first and second language learning is listening, speaking, reading, writing.
6. You did not have to translate when you were small. If you were able to learn your own language without translation, you should be able to learn a foreign language in the same way.
7. A small child simply uses language. He does not learn formal grammar. You don't tell him about verbs and nouns. Yet he learns the language perfectly. It is equally unnecessary to use grammatical conceptualization in teaching a foreign language.

These statements represent the views of those who felt that "the first language learner was looked upon as the foreign language teacher's dream: a pupil who mysteriously laps up his vocabulary, whose pronunciation, in spite of occasional lapses, is impeccable, while morphology and syntax, instead of being a constant headache, come to him like a dream" (Stern, 1970, p. 58).

There are flaws in each of the seven statements. Sometimes the flaw is in the assumption behind the statement about first language learning; sometimes it is in the analogy or implication that is drawn; sometimes it is in both. The flaws represent some of the misunderstandings that need to be demythologized for the second language teacher. Through a careful examination of those shortcomings in this chapter, you should be able to avoid certain pitfalls, as well as to draw enlightened, plausible analogies wherever possible, thereby enriching your understanding of the second language learning process itself.

As cognitive and constructivist research on both first and second language acquisition gathered momentum, second language researchers and foreign language

teachers began to recognize the mistakes in drawing direct global analogies between first and second language acquisition. By the 1970s and 1980s, criticism of earlier direct analogies between first and second language acquisition had reached full steam. Stern (1970), Cook (1973, 1995), and Schachter (1988), among others, addressed the inconsistencies of such analogies, but at the same time recognized the legitimate similarities that, if viewed cautiously, allowed one to draw some constructive conclusions about second language learning.

TYPES OF COMPARISON AND CONTRAST

The comparison of first and second language acquisition can easily be oversimplified. At the very least, one needs to approach the comparison by first considering the differences between children and adults. It is, in one sense, illogical to compare the first language acquisition of a child with the second language acquisition of an adult (Foster-Cohen, 2001; Scovel, 1999; Schachter, 1988; Cook, 1973). This involves trying to draw analogies not only between first and second language learning situations but also between children and adults. It is much more logical to compare first and second language learning in children *or* to compare second language learning in children and adults. Nevertheless, child first language acquisition and adult second language acquisition are common and important categories of acquisition to compare. It is reasonable, therefore, to view the latter type of comparison within a matrix of possible comparisons. Figure 3.1 represents four possible categories to consider, defined by age and type of acquisition. Note that the vertical shaded area between the child and the adult is purposely broad to account for varying definitions of adulthood. In general, however, an adult is considered to be one who has reached the age of puberty. Cell A1 is obviously representative of an abnormal situation. There have been few recorded instances of an adult acquiring a first language. In one widely publicized instance, Curtiss (1977) wrote about Genie, a 13-year-old girl who had been socially isolated and abused all her life until she was discovered, and who was then faced with the task of acquiring a first language. Accounts of "wolf children" and instances of severe disability fall into this category.

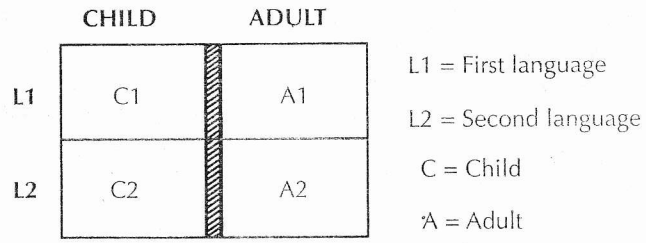

Figure 3.1. First and second language acquisition in adults and children

Since we need not deal with abnormal or pathological cases of language acquisition, we can ignore category A1. That leaves three possible comparisons:

1. First and second language acquisition in children (C1–C2), holding age constant
2. Second language acquisition in children and adults (C2–A2), holding second language constant
3. First language acquisition in children and second language acquisition in adults (C1–A2)

In the C1–C2 comparison (holding age constant), one is manipulating the language variable. However, it is important to remember that a 2-year-old and an 11-year-old exhibit vast cognitive, affective, and physical differences, and that comparisons of all three types must be treated with caution when varying ages of children are being considered. In the C2–A2 comparison, one is holding language constant and manipulating the differences between children and adults. Such comparisons are, for obvious reasons, the most fruitful in yielding analogies for adult second language classroom instruction, and will be the central focus in this chapter. The third comparison, C1–A2, unfortunately manipulates both variables. Many of the traditional comparisons were of this type; however, such comparisons must be made only with extreme caution because of the enormous cognitive, affective, and physical differences between children and adults.

Much of the focus of the rest of this chapter will be made on C2–A2 and C1–C2 comparisons. In both cases, comparisons will be embedded within a number of issues, controversies, and other topics that have attracted the attention of researchers interested in the relationship of age to acquisition.

THE CRITICAL PERIOD HYPOTHESIS

Most discussions about age and acquisition center on the question of whether there is a **critical period** for language acquisition: a biologically determined period of life when language can be acquired more easily and beyond which time language is increasingly difficult to acquire. The **Critical Period Hypothesis** (CPH) claims that there is such a biological timetable. Initially the notion of a critical period was connected only to first language acquisition. (See Singleton & Ryan, 2004, for a detailed overview.) Pathological studies of children who failed to acquire their first language, or aspects thereof, became fuel for arguments of biologically determined predispositions, timed for release, which would wane if the correct environmental stimuli were not present at the crucial stage. We have already seen, in the last chapter, that researchers like Lenneberg (1967) and Bickerton (1981) made strong statements in favor of a critical period before which and after which certain abilities do not develop.

In recent years, a plethora of research has appeared on the possible applications of the CPH to second language contexts. (See Ioup, 2005; Singleton & Ryan, 2004; Moyer, 2004; Hyltenstam & Abrahamsson, 2003; Scovel, 2000; Birdsong, 1999, among others, for useful summaries.) The "classic" argument is that a critical point for second language acquisition occurs around puberty, beyond which people seem to be relatively incapable of acquiring a second language. This has led some to assume, incorrectly, that by the age of 12 or 13 you are "over the hill" when it comes to the possibility of successful second language learning. Such an assumption must be viewed in the light of what it means to be "successful" in learning a second language, and particularly the role of *accent* as a component of success. To examine these issues, we will first look at neurological and phonological considerations, then examine cognitive, affective, and linguistic considerations.

NEUROBIOLOGICAL CONSIDERATIONS

One of the most promising areas of inquiry in age and acquisition research has been the study of the function of the brain in the process of acquisition (see Schumann et al., 2004; Singleton & Ryan, 2004; and Obler & Gjerlow, 1999; for synopses). How might neurological development affect second language success? Does the maturation of the brain at some stage spell the doom of language acquisition ability?

Hemispheric Lateralization

Some scholars have singled out the **lateralization** of the brain as the key to answering such a question. There is evidence in neurological research that as the human brain matures, certain functions are assigned, or "lateralized," to the left **hemisphere** of the brain, and certain other functions to the right hemisphere. Intellectual, logical, and analytic functions appear to be largely located in the left hemisphere, while the right hemisphere controls functions related to emotional and social needs. (See Chapter 5 for more discussion of left- and right-brain functioning.) Language functions appear to be controlled mainly in the left hemisphere, although there is a good deal of conflicting evidence. For example, patients who have had left hemispherectomies have been capable of comprehending and producing an amazing amount of language (see Zangwill, 1971, p. 220). Generally, a stroke or accident victim who suffers a lesion in the left hemisphere will manifest some language impairment, which is less often the case with right hemisphere lesions. However, before drawing any conclusions here, some caution is in order. Millar and Whitaker's (1983, p. 110) conclusion of over 20 years ago still stands: "Enough data have accumulated to challenge the simple view that the left hemisphere is the language hemisphere and the right hemisphere does something else."

While questions about precisely how language is lateralized in the brain are interesting indeed, a more crucial question for second language researchers has centered

on when lateralization takes place, and whether or not that lateralization process affects language acquisition. Eric Lenneberg (1967) and others suggested that lateralization is a slow process that begins around the age of 2 and is completed around puberty. During this time the child is presumably neurologically assigning functions little by little to one side of the brain or the other; included in these functions, of course, is language. It has been found that children up to the age of puberty who suffer injury to the left hemisphere are able to relocalize linguistic functions to the right hemisphere, to "relearn" their first language with relatively little impairment. Adams (1997), for example, did a longitudinal study of a boy who at 8 years of age had no speech, underwent a left hemispherectomy, and then at the age of 9 suddenly began to speak!

Thomas Scovel (1969) proposed a relationship between lateralization and second language acquisition. He suggested that the plasticity of the brain prior to puberty enables children to acquire not only their first language but also a second language, and that possibly it is the very accomplishment of lateralization that makes it difficult for people to be able ever again to easily acquire fluent control of a second language, or at least to acquire it with what Alexander Guiora et al. (1972a) called "authentic" (nativelike) pronunciation.

While Scovel's (1969) suggestion had only marginal experimental basis, it prompted him (Scovel, 1988, 2000) and other researchers (e.g., Birdsong, 1999; Singleton & Ryan, 2004) to take a careful look at neurological factors in first and second language acquisition. This research considered the possibility that there is a critical period not only for first language acquisition but also, by extension, for second language acquisition. Much of the neurological argument centers on the *time* of lateralization. While Lenneberg (1967) contended that lateralization is complete around puberty, Norman Geschwind (1970), among others, suggested a much earlier age. Stephen Krashen (1973) cited research to support the completion of lateralization around age 5. However, Scovel (1984, p. 1) cautioned against assuming, with Krashen, that lateralization is *complete* by age 5. "One must be careful to distinguish between 'emergence' of lateralization (at birth, but quite evident at five) and 'completion' (only evident at about puberty)."

Biological Timetables

One of the most compelling arguments for an accent-related critical period came from Thomas Scovel's (1988) fascinating multidisciplinary review of the evidence that has been amassed. Scovel cited evidence for a **sociobiological critical period** in various species of mammals and birds. (Others, such as Neapolitan et al. 1988, had drawn analogies between the acquisition of birdsong and human language acquisition.) Scovel's evidence pointed toward the development of a socially bonding accent at puberty, enabling species (1) to form an identity with their own community as they anticipate roles of parenting and leadership, and (2) to attract mates of "their own kind" in an instinctive drive to maintain their own species.

If the stabilization of an accepted, authentic accent is biologically preprogrammed for baboons and birds, why not for human beings? The sociobiological evidence that Scovel cited persuades us to conclude that native accents, and therefore "foreign" accents after puberty, may be a genetic leftover that, in our widespread human practice of mating across dialectal, linguistic, and racial barriers, is no longer necessary for the preservation of the human species. "In other words," explained Scovel (1988, p. 80), "an accent emerging after puberty is the price we pay for our preordained ability to be articulate apes."

Following another line of research, Walsh and Diller (1981, p. 18) proposed that different aspects of a second language are learned optimally at different ages:

> Lower-order processes such as pronunciation are dependent on early maturing and less adaptive macroneural circuits, which makes foreign accents difficult to overcome after childhood. Higher-order language functions, such as semantic relations, are more dependent on late maturing neural circuits, which may explain why college students can learn many times the amount of grammar and vocabulary that elementary school students can learn in a given period of time.

Walsh and Diller's conclusions have been supported in more recent findings, reported by Singleton and Ryan (2004) and Hyltenstam and Abrahamsson (2003). We are left, then, with some support for a neurologically based critical period, but principally for the acquisition of an authentic (nativelike) accent, and not very strongly for the acquisition of communicative fluency and other "higher-order" processes. We return to the latter issue in the next section.

Right-Hemispheric Participation

Yet another branch of neurolinguistic research focused on the role of the right hemisphere in the acquisition of a second language. Obler (1981, p. 58) noted that in second language learning, there is significant right hemisphere participation and that "this participation is particularly active during the early stages of learning the second language." But this "participation" to some extent consists of what we will later (Chapter 5) define as "strategies" of acquisition. Obler cited the strategy of guessing at meanings, and of using formulaic utterances, as examples of right hemisphere activity. Others (Genesee, 1982; Seliger, 1982) also found support for right hemisphere involvement in the form of complex language processing as opposed to early language acquisition.

Genesee (1982, p. 321) concluded that "there may be greater right hemisphere involvement in language processing in bilinguals who acquire their second language late relative to their first language and in bilinguals who learn it in informal contexts." While this conclusion may appear to contradict Obler's statement above, it does not. Obler found support for more right hemisphere activity during the early

stages of second language acquisition, but her conclusions were drawn from a study of seventh-, ninth-, and eleventh-grade subjects—all postpubescent. Such studies seem to suggest that second language learners, particularly adult learners, might benefit from more encouragement of right-brain activity in the classroom context. But, as Scovel (1982, pp. 324–325) noted, that sort of conclusion needs to be cautious, since the research provides a good deal of conflicting evidence, some of which has been grossly misinterpreted in "an unhappy marriage of single-minded neuropsychologists and double-minded educationalists .... Brain research ... will not provide a quick fix to our teaching problems."

Singleton and Ryan (2004, p. 143) echo Scovel's conclusion upon examining two additional decades of research on lateralization: "Clearly, the debate about the right hemisphere's contribution to language processing is set to continue for some time. Since, as we have seen, there is not yet agreement on what constitutes good evidence in this matter, the inference must be that resolution of the substantive issues is still some way off."

CLASSROOM CONNECTIONS

Research Findings: Although research is inconclusive about left- and right-hemispheric participation in language acquisition, a number of empirical and observational studies indicate that adults might benefit from a healthy dose of right-brain-oriented activities in the foreign language classroom.

Teaching Implications: Some approaches to language teaching (for example, Total Physical Response, the Natural Approach) advocate a less analytical approach and a more psychomotor, integrated, social atmosphere in the classroom. What are some typical right-brain-oriented activities that you have seen—or would use—in the language classroom?

Anthropological Evidence

Some adults have been known to acquire an authentic accent in a second language after the age of puberty, but such individuals are few and far between. Anthropologist Jane Hill (1970) provided an intriguing response to Scovel's (1969) study by citing anthropological research on non-Western societies that yielded evidence that adults can, in the normal course of their lives, acquire second languages perfectly. One unique instance of second language acquisition in adulthood was reported by Sorenson (1967), who studied the Tukano culture of South America. At least two dozen languages were spoken among these communities, and each tribal

group, identified by the language it speaks, is an exogamous unit; that is, people must marry outside their group, and hence almost always marry someone who speaks another language. Sorenson reported that during adolescence, individuals actively and almost suddenly began to speak two or three other languages to which they had been exposed at some point. Moreover, "in adulthood [a person] may acquire more languages; as he approaches old age, field observation indicates, he will go on to perfect his knowledge of all the languages at his disposal" (Sorenson, 1967, p. 678). In conclusion, Hill (1970, pp. 247–248) made the following assertions:

> The language acquisition situation seen in adult language learners in the largely monolingual American English middle class speech communities . . . may have been inappropriately taken to be a universal situation in proposing an innatist explanation for adult foreign accents. Multilingual speech communities of various types deserve careful study . . . . We will have to explore the influence of social and cultural roles which language and phonation play, and the role which attitudes about language play, as an alternative or a supplement to the cerebral dominance theory as an explanation of adult foreign accents.

Hill's challenge was taken up in subsequent decades. Flege (1987) and Morris and Gerstman (1986), for example, cited motivation, affective variables, social factors, and the quality of input as important in explaining the apparent advantage of the child. Even more recently, Moyer (2004) has reminded us of a multitude of cognitive, social, psychological, and strategic variables affecting the ultimate attainment of proficiency in a second language.

THE SIGNIFICANCE OF ACCENT

Implicit in the comments of the preceding section is the assumption that the emergence of what we commonly call "foreign accent" is of some importance in our arguments about age and acquisition. We can appreciate the fact that given the existence of several hundred muscles (throat, larynx, mouth, lips, tongue, and others) that are used in the articulation of human speech, a tremendous degree of muscular control is required to achieve the fluency of a native speaker of a language. At birth the speech muscles are developed only to the extent that the larynx can control sustained cries. These speech muscles gradually develop, and control of some complex sounds in certain languages (in English the *r* and *l* are typical) is sometimes not achieved until after age 5, although complete phonemic control is present in virtually all children before puberty.

Research on the acquisition of authentic control of the phonology of a foreign language supports the notion of a critical period. Most of the evidence indicates that persons beyond the age of puberty do not acquire what has come to be called **authentic** (native-speaker) pronunciation of the second language. Possible causes

of such an age-based factor have already been discussed: neuromuscular plasticity, cerebral development, sociobiological programs, and the environment of sociocultural influences.

It is tempting immediately to cite exceptions to the rule ("My Aunt Mary learned French at 25, and everyone in France said she sounded just like a native"). These exceptions, however, appear to be (1) isolated instances or (2) only anecdotally supported. True, there are special people who possess somewhere within their competence the ability to override neurobiological critical period effects and to achieve a virtually perfect nativelike pronunciation of a foreign language. But in terms of statistical probability (see Scovel, 1988), it is clear that the chances of any one individual commencing a second language after puberty and achieving a scientifically verifiable authentic native accent are infinitesimal.

So where do we go from here? First, some sample studies, spanning several decades, will serve as examples of the kind of research on adult phonological acquisition that appears to contradict what some have called the **strong version** of the CPH, that is, one that holds unswervingly to the predictability of age effects.

Gerald Neufeld (1977, 1979, 1980, 2001) undertook a set of studies to determine to what extent adults could approximate native-speaker accents in a second language never before encountered. In his earliest experiment, 20 adult native English speakers were taught to imitate 10 utterances, each from 1 to 16 syllables in length, in Japanese and in Chinese. Native-speaking Japanese and Chinese judges listened to the taped imitations. The results indicated that 11 of the Japanese and 9 of the Chinese imitations were judged to have been produced by "native speakers." In his latest study (2001) similar results were obtained with English learners of French. While Neufeld recognized the limitations of his own studies, he suggested that "older students have neither lost their sensitivity to subtle differences in sounds, rhythm, and pitch nor the ability to reproduce these sounds and contours" (1979, p. 234). Nevertheless, Scovel (1988, pp. 154–159) and Long (1990b, pp. 266–268) later pointed out experimental flaws in Neufeld's experiments, stemming from the methodology used to judge "native speaker" and from the information initially given to the judges.

In more recent years, Moyer (1999) and Bongaerts, Planken, and Schils (1995) also centered on the strong version of the CPH. Moyer's study with native English-speaking graduate students of German upheld the strong CPH: subjects' performance was not judged to be comparable to native speakers of German. The Bongaerts et al. study reported on a group of adult Dutch speakers of English, all late learners, who recorded a monologue, a reading of a short text, and readings of isolated sentences and isolated words. Some of the nonnative performances, for some of the trials, were judged to have come from native speakers. However, in a later review of this study, Scovel (1997, p. 118) carefully noted that it was also the case that many native speakers of English in their study were judged to be nonnative! The earlier Neufeld experiments and the more recent studies essentially supported the strong CPH. However, in the latest studies of age and accent, we find some equivocation from researchers who prefer to play down the accent issue and

look at other proficiency factors, since "the available evidence does not consistently support the hypothesis that younger L2 learners are *globally* [my italics] more efficient and successful than older learners" (Singleton & Ryan, 2004, p. 115).

Upon reviewing the research on age and accent acquisition, as Scovel (1999) and others have done, we are left with persuasive evidence of a critical period for accent, but for accent only! It is important to remember in all these considerations that pronunciation of a language is not by any means the sole criterion for acquisition, nor is it really the most important one. We all know people who have less than perfect pronunciation but who also have excellent and fluent control of a second language, control that can even exceed that of many native speakers. A modern version of this phenomenon might be called the "Arnold Schwarzeneggar Effect" (after the actor-turned-governor in California), whose accent is clearly noticeable yet who is arguably as linguistically proficient as any native speaker of American English. The acquisition of the communicative and functional purposes of language is, in most circumstances, far more important than a perfect native accent. Hyltenstam and Abrahamsson (2003, pp. 578–580) reminded us of the positive side of the miracle of second language acquisition:

> More surprising, we would like to claim, are the miraculous levels of proficiency that second language learners (at all ages) in fact *can* reach, despite the constraints that are imposed by our biological scheduling. That maturational effects, to a very large extent, can be compensated for is indeed encouraging. The subtle differences that we have assumed to exist between near-native and native proficiency are probably highly insignificant in all aspects of the second language speaker's life and endeavors, although *very* significant for a theory of human capacity for language learning. The highly successful L2 speakers that we have characterized as having reached "only" near-native proficiency *are*, in fact, nativelike in all contexts except, perhaps, in the laboratory of the linguist with specific interest in second language learning mechanisms.

Perhaps, in our everyday encounters with second language users, we are too quick to criticize the "failure" of adult second language learners by nitpicking at minor pronunciation points or nonintrusive grammatical errors. Cook (1995, p. 55) warned against "using native accent as the yardstick" in our penchant for holding up monolingualism as the standard. And so, maybe instead, we can turn those perspectives into a more positive focus on the "multi-competence" (Cook 1995, p. 52) of second language learners. Or, in the words of Marinova-Todd, Marshall, and Snow (2000, p. 9), we would do well to refrain from too much of "a misemphasis on poor adult learners and an underemphasis on adults who master L2s to nativelike levels." Instead of being so perplexed and concerned about how bad people are at learning second languages, we should be fascinated with how much those same learners have accomplished.

CLASSROOM CONNECTIONS

Research Findings: Some researchers, such as Hyltenstam and Abrahamsson (2003), would like to see a more positive spin on second language acquisition, one with emphasis on what adults can and do accomplish rather than on the "native accent yardstick."

Teaching Implications: What are some of the positive and encouraging elements of adult second language acquisition? In your experience, what have you accomplished as an adult learning a second language that you might not have been able to do as well or as efficiently as a child?

Today researchers are continuing the quest for answers to child-adult differences by looking beyond simple phonological factors. Bongaerts et al. (1995) found results that suggested that certain learner characteristics and contexts may work together to override the disadvantages of a late start. Slavoff and Johnson (1995) found that younger children (ages 7 to 9) did not have a particular advantage in rate of learning over older (10- to 12-year-old) children. Longitudinal studies such as Ioup et al.'s (1994) study of a highly nativelike adult learner of Egyptian Arabic are useful in their focus on the factors beyond phonology that might be relevant in helping us to be more successful in teaching second languages to adults. Studies on the effects of Universal Grammar (White, 2003), of instructional factors (Singleton & Ryan, 2004), and of contextual and sociopsychological factors (Moyer, 2004) are all highly promising domains of research on age and acquisition.

COGNITIVE CONSIDERATIONS

Human cognition develops rapidly throughout the first 16 years of life and less rapidly thereafter. Some cognitive changes are critical; others are more gradual and difficult to detect. Jean Piaget (1972; 1955; Piaget & Inhelder, 1969) outlined the course of intellectual development in a child through various stages:

- Sensorimotor stage (birth to 2)
- Preoperational stage (ages 2 to 7)
- *Operational stage (ages 7 to 16)*
  - Concrete operational stage (ages 7 to 11)
  - Formal operational stage (ages 11 to 16)

A critical stage for a consideration of the effects of age on second language acquisition appears to occur, in Piaget's outline, at puberty (age 11 in his model).

It is here that a person becomes capable of abstraction, of formal thinking which transcends concrete experience and direct perception. Cognitively, then, an argument can be made for a critical period of language acquisition by connecting language acquisition and the concrete/formal stage transition. However, as reasonable as such a contention might sound, even here some caution is warranted. Singleton and Ryan (2004, pp. 156–159) offer a number of objections to connecting Piagetian stages of development with critical period arguments, not the least of which was the "vagueness" and lack of empirical data in Piaget's theory.

Ausubel (1964) hinted at the relevance of such a connection when he noted that adults learning a second language could profit from certain grammatical explanations and deductive thinking that obviously would be pointless for a child. Whether adults do in fact profit from such explanations depends, of course, on the suitability and efficiency of the explanation, the teacher, the context, and other pedagogical variables. We have observed, though, that children do learn second languages well without the benefit—or hindrance—of formal operational thought. Does this capacity of formal, abstract thought have a facilitating or inhibiting effect on language acquisition in adults? Ellen Rosansky (1975, p. 96) felt that initial language acquisition takes place when the child is highly "centered": "He is not only egocentric at this time, but when faced with a problem he can focus (and then only fleetingly) on one dimension at a time. This lack of flexibility and lack of decentration may well be a necessity for language acquisition."

Young children are generally not "aware" that they are acquiring a language, nor are they aware of societal values and attitudes placed on one language or another. It is said that "a watched pot never boils"; is it possible that a language learner who is too consciously aware of what he or she is doing will have difficulty in learning the second language?

You may be tempted to answer that question affirmatively, but there is both logical and anecdotal counterevidence. Logically, a superior intellect should facilitate what is in one sense a highly complex intellectual activity. Anecdotal evidence shows that some adults who have been successful language learners have been very much aware of the process they were going through, even to the point of utilizing self-made paradigms and other fabricated linguistic devices to facilitate the learning process. So, if mature cognition is a liability to successful second language acquisition, clearly some intervening variables allow some persons to be very successful second language learners after puberty. These variables may in most cases lie outside the cognitive domain entirely, perhaps more centrally in the affective—or emotional—domain.

A strong case for the superiority of children in **implicit learning** (acquisition of linguistic patterns without explicit attention or instruction) was advanced by Robert DeKeyser (2000). In a study of adult native speakers of Hungarian learning English, he found that certain adults, those with high general verbal ability, were able

to "use explicit learning mechanisms to bypass the increasingly inefficient implicit mechanisms" (p. 518). He went on to conclude:

> If the Critical Period Hypothesis is constrained, however, to implicit learning mechanisms, then it appears that there is more than just a sizable correlation: Early age confers an absolute, not a statistical, advantage—that is, there may very well be no exceptions to the age effect. Somewhere between the ages of 6-7 and 16-17, everybody loses the mental equipment required for the implicit induction of the abstract patterns underlying a human language, and the critical period really deserves its name (p. 518).

In a response to DeKeyser, Bialystok (2002, p. 482) contested "the logic that connects [DeKeyser's] results to his preferred conclusions." Arguing that a strong case for a critical period must show a "discontinuity in learning outcomes" (that is, a maturational *point* in development that marks a change), Bialystok maintained that DeKeyser's data did not show such an effect. Rather, she maintained, the changes that DeKeyser observed in his subjects could have been the product of gradual change with age.

The lateralization hypothesis may provide another key to cognitive differences between child and adult language acquisition. As the child matures into adulthood, some would maintain, the left hemisphere (which controls the analytical and intellectual functions) becomes more dominant than the right hemisphere (which controls the emotional functions). It is possible that the dominance of the left hemisphere contributes to a tendency to overanalyze and to be too intellectually centered on the task of second language learning.

Another construct that should be considered in examining the cognitive domain is the Piagetian notion of equilibration. **Equilibration** is defined as "progressive interior organization of knowledge in a stepwise fashion" (Sullivan, 1967, p. 12), and is related to the concept of equilibrium. That is, cognition develops as a process of moving from states of doubt and uncertainty (disequilibrium) to stages of resolution and certainty (equilibrium) and then back to further doubt that is, in time, also resolved. And so the cycle continues. Piaget (1970) claimed that conceptual development is a process of progressively moving from states of disequilibrium to equilibrium and that periods of disequilibrium mark virtually all cognitive development up through age 14 or 15, when formal operations finally are firmly organized and equilibrium is reached.

It is conceivable that disequilibrium may provide significant motivation for language acquisition: language interacts with cognition to achieve equilibrium. Perhaps until that state of final equilibrium is reached, the child is cognitively ready and eager to acquire the language necessary for achieving the cognitive equilibrium of adulthood. That same child was, until that time, decreasingly tolerant of cognitive ambiguities. Children are amazingly indifferent to contradictions, but intellectual growth produces an awareness of ambiguities about them and heightens the need

for resolution. Perhaps a general intolerance of contradictions produces an acute awareness of the enormous complexities of acquiring an additional language, and so perhaps around the age of 14 or 15, the prospect of learning a second language becomes overwhelming, thus discouraging the learner from proceeding a step at a time as a younger child would do.

The final consideration in the cognitive domain is the distinction that Ausubel made between **rote** and **meaningful learning**. Ausubel noted that people of all ages have little need for rote, mechanistic learning that is not related to existing knowledge and experience. Rather, most items are acquired by meaningful learning, by anchoring and relating new items and experiences to knowledge that exists in the cognitive framework. It is a myth to contend that children are good rote learners, that they make good use of meaningless repetition and mimicking. We have already seen in Chapter 2 that children's practice and imitation is a very meaningful activity that is contextualized and purposeful. Adults have developed even greater concentration and so have greater ability for rote learning, but they usually use rote learning only for short-term memory or for somewhat artificial purposes. By inference, we may conclude that the foreign language classroom should not become the locus of excessive rote activity: rote drills, pattern practice without context, rule recitation, and other activities that are not in the context of meaningful communication.

It is interesting to note that C2–A2 comparisons almost always refer, in the case of children, to natural untutored learning, and for adults, to the classroom learning of a second language. Even so, many foreign language classrooms around the world still utilize an excessive number of rote-learning procedures. So, if adults learning a foreign language by rote methods are compared with children learning a second language in a natural, meaningful context, the child's learning will seem to be superior. The cause of such superiority may not be in the age of the person, but in the context of learning. The child happens to be learning language meaningfully, and the adult is not.

The cognitive domain holds yet other areas of interest for comparing first and second language acquisition. These areas will be treated more fully in Chapters 4 and 5. We turn now to what may be the most complex, yet the most illuminating, perspective on age and acquisition: the affective domain.

AFFECTIVE CONSIDERATIONS

Human beings are emotional creatures. At the heart of all thought and meaning and action is emotion. As "intellectual" as we would like to think we are, we are influenced by our emotions. It is only logical, then, to look at the affective (emotional) domain for some of the most significant answers to the problems of contrasting the differences between first and second language acquisition.

Research on the affective domain in second language acquisition has been mounting steadily for a number of decades. This research has been inspired by a number of factors. Not the least of these is the fact that linguistic theory is now

asking the deepest possible questions about human language, with some applied linguists examining the inner being of the person to discover if, in the affective side of human behavior, there lies an explanation to the mysteries of language acquisition. A full treatment of affective variables in second language acquisition is provided in Chapters 6 and 7; in this chapter it is important to take a brief look at selected affective factors as they relate to the age and acquisition issue.

The affective domain includes many factors: empathy, self-esteem, extroversion, inhibition, imitation, anxiety, attitudes—the list could go on. Some of these may seem at first rather far removed from language learning, but when we consider the pervasive nature of language, any affective factor can conceivably be relevant to second language learning.

A case in point is the role of **egocentricity** in human development. Very young children are highly egocentric. The world revolves about them, and they see all events as focusing on themselves. Small babies at first do not even distinguish a separation between themselves and the world around them. A rattle held in a baby's hand, for example, is simply an inseparable extension of the baby as long as it is grasped; when the baby drops it or loses sight of it, the rattle ceases to exist. As children grow older they become more aware of themselves, more self-conscious as they seek both to define and to understand their self-identity. In preadolescence children develop an acute consciousness of themselves as separate and identifiable entities but ones which, in their still-wavering insecurity, need protecting. They therefore develop **inhibitions** about this self-identity, fearing to expose too much self-doubt. At puberty these inhibitions are heightened in the trauma of undergoing critical physical, cognitive, and emotional changes. Adolescents must acquire a totally new physical, cognitive, and emotional identity. Their egos are affected not only in how they understand themselves but also in how they reach out beyond themselves, how they relate to others socially, and how they use the communicative process to bring on affective equilibrium.

Several decades ago, Alexander Guiora, a researcher in the study of personality variables in second language learning, proposed what he called the **language ego** (Guiora et al., 1972b; see also Dörnyei, 2005; Ehrman, 1993) to account for the identity a person develops in reference to the language he or she speaks. For any monolingual person, the language ego involves the interaction of the native language and ego development. Oneself-identity is inextricably bound up with one's language, for it is in the communicative process—the process of sending out messages and having them "bounced" back—that such identities are confirmed, shaped, and reshaped. Guiora suggested that the language ego may account for the difficulties that adults have in learning a second language.

The child's ego is dynamic and growing and flexible through the age of puberty. Thus a new language at this stage does not pose a substantial "threat" or inhibition to the ego, and adaptation is made relatively easily as long as there are no undue confounding sociocultural factors such as, for example, a damaging attitude toward a language or language group at a young age. Then the simultaneous physical, emotional, and cognitive changes of puberty give rise to a defensive mechanism in

which the language ego becomes protective and defensive. The language ego clings to the security of the native language to protect the fragile ego of the young adult. The language ego, which has now become part and parcel of self-identity, is threatened, and thus a context develops in which you must be willing to make a fool of yourself in the trial-and-error struggle of speaking and understanding a foreign language. Younger children are less frightened because they are less aware of language *forms*, and the possibility of making mistakes in those forms—mistakes that one really must make in an attempt to communicate spontaneously—does not concern them greatly.

It is no wonder, then, that the acquisition of a new language ego is an enormous undertaking not only for young adolescents but also for an adult who has grown comfortable and secure in his or her own identity and who possesses inhibitions that serve as a wall of defensive protection around the ego. Making the leap to a new or second identity is no simple matter; it can be successful only when one musters the necessary ego strength to overcome inhibitions. It is possible that the successful adult language learner is someone who can bridge this affective gap. Some of the seeds of success might have been sown early in life. In a bilingual setting, for example, if a child has already learned one second language in childhood, then affectively, learning a third language as an adult might represent much less of a threat. Or such seeds may be independent of a bilingual setting; they may simply have arisen out of whatever combination of nature and nurture makes for the development of a strong ego.

CLASSROOM CONNECTIONS

Research Findings: It is common to find research that compares children and adults acquiring second languages, with the assumption that the two categories are easily defined. But not enough research examines differences between younger (6–7-year-old) and older (10–11-year-old) children.

Teaching Implications: If you were teaching two groups of children—a 6–7-year-old group and a 10–11-year-old group—how would your approach and classroom activities differ?

In looking at SLA in children, it is important to distinguish younger and older children. Preadolescent children of 9 or 10, for example, are beginning to develop inhibitions, and it is conceivable that children of this age have a good deal of affective dissonance to overcome as they attempt to learn a second language. This could account for difficulties that older prepubescent children encounter in acquiring a

second language. Adult vs. child comparisons are, of course, highly relevant. We know from both observational and research evidence that mature adults manifest a number of inhibitions. These inhibitions surface in modern language classes where the learner's attempts to speak in the foreign language are often fraught with embarrassment. We have also observed the same inhibition in the "natural" setting (a nonclassroom setting, such as a learner living in a foreign culture), although in such instances there is the likelihood that the necessity to communicate overrides the inhibitions.

Other affective factors seem to hinge on the basic notion of ego identification. It would appear that the study of second language learning as the acquisition of a **second identity** might pose a fruitful and important issue in understanding not only some differences between child and adult first and second language learning but second language learning in general (see Chapter 7).

Another affectively related variable deserves mention here even though it will be given fuller consideration in Chapter 6: the role of **attitudes** in language learning. From the growing body of literature on attitudes, it seems clear that negative attitudes can affect success in learning a language. Very young children, who are not developed enough cognitively to possess "attitudes" toward races, cultures, ethnic groups, classes of people, and languages, may be less affected than adults. Macnamara (1975, p. 79) noted that "a child suddenly transported from Montreal to Berlin will rapidly learn German no matter what he thinks of the Germans." But as children reach school age, they also begin to acquire certain attitudes toward types and stereotypes of people. Most of these attitudes are "taught," consciously or unconsciously, by parents, other adults, and peers. The learning of negative attitudes toward the people who speak the second language or toward the second language itself has been shown to affect the success of language learning in persons from school age on up.

Finally, **peer pressure** is a particularly important variable in considering child-adult comparisons. The peer pressure children encounter in language learning is quite unlike what the adult experiences. Children usually have strong constraints upon them to conform. They are told in words, thoughts, and actions that they had better "be like the rest of the kids." Such peer pressure extends to language. Adults experience some peer pressure, but of a different kind. Adults tend to tolerate linguistic differences more than children, and therefore errors in speech are more easily excused. If adults can understand a second language speaker, for example, they will usually provide positive cognitive and affective feedback, a level of tolerance that might encourage some adult learners to "get by." Children are harsher critics of one another's actions and words and may thus provide a necessary and sufficient degree of mutual pressure to learn the second language.

LINGUISTIC CONSIDERATIONS

We have so far looked at learners themselves and considered a number of different issues in age and acquisition. Now we turn to some issues that center on the

subject matter itself: language. What are some of the linguistic considerations in age-related questions about SLA? A growing number of research studies are now available to shed some light on the linguistic processes of second language learning and how those processes differ between children and adults. A good deal of this research will be treated in Chapters 8 through 10, but here we will look briefly at some specific issues that arise in examining the child's acquisition of a second language.

Bilingualism

It is clear that children learning two languages simultaneously acquire them by the use of similar strategies. They are, in essence, learning two first languages, and the key to success is in distinguishing separate contexts for the two languages. People who learn a second language in such separate contexts can often be described as coordinate bilinguals; they have two meaning systems, as opposed to compound bilinguals who have one meaning system from which both languages operate. Children generally do not have problems with "mixing up languages," regardless of the separateness of contexts for use of the languages. Moreover, "bilinguals are not two monolinguals in the same head" (Cook, 1995, p. 58). Most bilinguals, however, engage in **code-switching** (the act of inserting words, phrases, or even longer stretches of one language into the other), especially when communicating with another bilingual.

In some cases the acquisition of both languages in bilingual children is slightly slower than the normal schedule for first language acquisition. However, a respectable stockpile of research (see Reynolds, 1991; Schinke-Llano, 1989) shows a considerable cognitive benefit of early childhood bilingualism, supporting Lambert's (1972) contention that bilingual children are more facile at concept formation and have a greater mental flexibility.

Interference Between First and Second Languages

A good deal of the research on nonsimultaneous second language acquisition, in both children and adults, has focused on the interfering effects of the first and second languages. For the most part, research confirms that the linguistic and cognitive processes of second language learning in young children are in general similar to first language processes. Hansen-Bede (1975), Milon (1974), Ervin-Tripp (1974), Dulay and Burt (1974a), Natalicio and Natalicio (1971), and Ravem (1968), among others, concluded that similar strategies and linguistic features are present in both first and second language learning in children. Dulay and Burt (1974a) found, for example, that 86 percent of more than 500 errors made by Spanish-speaking children learning English reflected normal developmental characteristics—that is, expected intralingual strategies, not interference errors from the first language. Hansen-Bede (1975) examined such linguistic structures as possession, gender, word order, verb forms, questions, and negation in an English-speaking three-year-old child

who learned Urdu upon moving to Pakistan. In spite of some marked linguistic contrasts between English and Urdu, the child's acquisition did not appear to show first language interference and, except for negation, showed similar strategies and rules for both the first and the second language.

Adult second language linguistic processes are more vulnerable to the effect of the first language on the second, especially the farther apart the two events are. Whether adults learn a foreign language in a classroom or out in the "arena," they approach the second language—either focally or peripherally—systematically, and they attempt to formulate linguistic rules on the basis of whatever linguistic information is available to them: information from the native language, the second language, teachers, classmates, and peers. The nature and sequencing of these systems has been the subject of a good deal of second language research in the last half of the twentieth century. What we have learned above all else from this research is that the saliency of interference from the first language does not imply that interference is the most relevant or most crucial factor in adult second language acquisition. Adults learning a second language manifest some of the same types of errors found in children learning their first language (see Chapter 8).

Adults, more cognitively secure, appear to operate from the solid foundation of the first language and thus manifest more interference. But it was pointed out earlier that adults, too, manifest errors not unlike some of the errors children make, the result of creative perception of the second language and an attempt to discover its rules apart from the rules of the first language. The first language, however, may be more readily used to bridge gaps that the adult learner cannot fill by generalization within the second language. In this case we do well to remember that the first language can be a facilitating factor, and not just an interfering factor.

Order of Acquisition

One of the first steps toward demonstrating the importance of factors beyond first language interference was taken in a series of research studies by Heidi Dulay and Marina Burt (1972, 1974a, 1974b, 1976). Emphasizing the absence of L1 interference, they claimed that "transfer of L1 syntactic patterns rarely occurs" in child second language acquisition (1976, p. 72). They claimed that children learning a second language use a **creative construction** process, just as they do in their first language.

This conclusion was supported by voluminous research data collected on the acquisition order of eleven English morphemes in children learning English as a second language. Dulay and Burt found a common order of acquisition among children of several native language backgrounds, an order very similar to that found by Roger Brown (1973) using the same morphemes but for children acquiring English as their first language:

1. present progressive (*-ing*)
2. [and 3.] *in, on*

(*continued*)

4. plural (*-s*)
5. past irregular
6. possessive (*-'s*)
7. uncontractible copula (*is, am, are*)
8. articles (*a, the*)
9. past regular (*-ed*)
10. third-person regular (*-s*)
11. third-person irregular

There were logical and methodological arguments about the validity of morpheme-order findings. Rosansky (1976) argued that the statistical procedures used were suspect, and others (Roger Andersen, 1978; Larsen-Freeman, 1976) noted that 11 English morphemes constitute only a minute portion of English syntax, and therefore lack generalizability. On the other hand, Zobl and Liceras (1994, p. 161), in a "search for a unified theoretical account for the L1 and L2 morpheme orders," reexamined the morpheme-order studies and concluded the generalizability of morpheme acquisition order.

In a resurgence of research on order of acquisition, the topic has emerged as an important consideration both in studies of age and acquisition and in the search for universals in language acquisition. A nagging question in earlier research centered on the search for *causes* of ostensibly universal patterns of acquisition, a question that most studies left unaddressed. Bardovi-Harlig (1999) contended that the earlier morpheme studies were too focused on morphology and on a form-oriented approach, and showed that attention to a semantic-oriented approach had more explanatory power. So, for example, the role of tense and aspect markers across languages offered a better explanation of why both children in their first language and adults in their second language acquisition exhibit a common order of acquisition.

Even more recently, Goldschneider & DeKeyser (2005, 2001) reported on studies that refined earlier claims about acquisition order by proposing five determinants of acquisition order across numerous languages:

1. Perceptual salience (how easy it is to see or hear a given structure)
2. Semantic complexity (how many meanings are expressed by a particular form)
3. Morpho-phonological regularity (the degree to which language forms are affected by their phonological environment)
4. Syntactic category (grammatical characteristics of forms)
5. Frequency in the input (the number of times a given structure occurs in speech addressed to the learner)

While they did not make strong claims for the predictive validity of the above five determinants, they remained optimistic that these determinants hold promise as a useful meta-analysis of data that heretofore remained somewhat mysterious. Further, Goldschneider and DeKeyser suggested that "teachers could make the

predictors work for them and could potentially increase the rate of acquisition by presenting material on functors in a way that capitalizes on these causes" (2005, p. 63).

ISSUES IN FIRST LANGUAGE ACQUISITION REVISITED

Having examined the comparison of first and second language acquisition across a number of domains of human behavior, we turn in this final section to a brief consideration of the eight issues in first language acquisition that were presented in Chapter 2. In most cases the implications of these issues are already clear, from the comments in the previous chapter, from the reader's logical thinking, or from comments in this chapter. Therefore what follows is a way of highlighting the implications of the issues for second language learning.

Competence and Performance

It is as difficult to "get at" linguistic competence in a second language as it is in a first. For children, judgments of grammaticality may elicit a second language "pop-go-weasel" effect. You can be a little more direct in inferring competence in adults; adults can make choices between two alternative forms, and sometimes they manifest an awareness of grammaticality in a second language. But you must remember that adults are not in general able to verbalize "rules" and paradigms consciously even in their native language. Furthermore, in judging utterances in the modern language classroom and responses on various tests, teachers need to be cautiously attentive to the discrepancy between performance on a given day or in a given context and competence in a second language in general. Remember that one isolated sample of second language speech may on the surface appear to be rather malformed until you consider that sample in comparison with the everyday mistakes and errors of native speakers.

Comprehension and Production

Whether or not comprehension is derived from a separate level of competence, there is a universal distinction between comprehension and production. Learning a second language usually means learning to speak it *and* to comprehend it! When we say "Do you speak English?" or "Parlez-vous français?" we usually mean "and do you *understand* it, too?" Learning involves both modes (unless you are interested only in, say, learning to read in the second language). So teaching involves attending to both comprehension and production and the full consideration of the gaps and differences between the two. Adult second language learners will, like children, often *hear* a distinction but not be able to produce it. The inability to produce an item, therefore, should not be taken to mean that the learner cannot comprehend the item.

Nature or Nurture?

What happens after puberty to the magic "little black box" called LAD? Does the adult suffer from linguistic "hardening of the arteries"? Does LAD "grow up" somehow? Does lateralization signal the death of LAD? We do not have complete answers to these questions, but there have been some hints in the discussion of physical, cognitive, and affective factors. What we do know is that adults and children alike appear to have the capacity to acquire a second language at any age. The only trick that nature might play on adults is to virtually rule out the acquisition of authentic accent. As you have seen above, this still leaves a wide swath of language properties that may actually be more efficiently acquired in an adult. If an adult does not acquire a second language successfully, it is probably because of intervening cognitive or affective variables and not the absence of innate capacities. Defining those intervening variables appears to be more relevant than probing the properties of innateness.

Universals

In recent years Universal Grammar has come to the attention of a growing number of researchers. The conclusions from this research are mixed (Van Buren, 1996). Research on child SLA suggests that children's developing second language grammars are indeed constrained by UG (Lakshmanan, 1995). But it is not immediately clear whether this knowledge is available directly from a truly universal "source," or through the mediation of the first language. Yet even in the first language, UG seems to predict certain syntactic domains but not others. This has led some to conclude that second language learners have only "partial access" to UG (O'Grady, 1996). But Bley-Vroman (1988) went a step further in claiming a "no access" position for adults learning a second language: adults acquire second language systems without any reference to UG.

Others disagree strongly with the partial- and no-access claim. Cook (1993, p. 244) provocatively asked, "Why should second language users be treated as failed monolinguals? . . . A proper account of second language learning would treat multicompetence on its own terms, not in L1 related terms." In other words, why look to monolingualism as a standard by which UG or any other means of inquiry should be modeled? If UG models do not fit second language learning processes, then it may be "the description of UG that is at fault, and not the L2 learner" (Cook, 1993, p. 245). Where does this leave us? Perhaps in a position of keeping an open mind as teachers and an inquisitive spirit as researchers.

Systematicity and Variability

It is clear that second language acquisition, both child and adult, is characterized by both systematicity and variability. Second language linguistic development appears in many instances to mirror the first language acquisition process: learners induce

rules, generalize across a category, overgeneralize, and proceed in stages of development (more on this in Chapter 9). Recent research has suggested that even the order of acquisition may universally follow certain identifiable determinants (Goldschneider & DeKeyser, 2005). The variability of second language data poses thorny problems that have been addressed by people like Gass and Selinker (2001), Preston (1996), Ellis (1989, 1987), and Tarone (1988). The variability of second language acquisition is exacerbated by a host of cognitive, affective, cultural, and contextual variables that are sometimes not applicable to a first language learning situation.

Language and Thought

Another intricately complex issue in both first and second language acquisition is the precise relationship between language and thought. We can see that language helps to shape thinking and that thinking helps to shape language. What happens to this interdependence when a second language is acquired? Does the bilingual person's memory consist of one storage system (compound bilingualism) or two (coordinate bilingualism)? The second language learner is clearly presented with a tremendous task in sorting out new meanings from old, distinguishing thoughts and concepts in one language that are similar but not quite parallel to the second language, perhaps really acquiring a whole new system of conceptualization. The second language teacher needs to be acutely aware of cultural thought patterns that may be as interfering as the linguistic patterns themselves.

Imitation

While children are good deep-structure imitators (centering on meaning, not surface features), adults can fare much better in imitating surface structure (by rote mechanisms) if they are explicitly directed to do so. Sometimes their ability to center on surface distinctions is a distracting factor; at other times it is helpful. Adults learning a second language might do well to attend consciously to truth value and to be less aware of surface structure as they communicate. The implication is that meaningful contexts for language learning are necessary; second language learners ought not to become too preoccupied with form lest they lose sight of the function and purpose of language.

Practice and Frequency

Too many language classes are filled with rote practice that centers on surface forms. Most cognitive psychologists agree that the frequency of stimuli and the number of times spent practicing a form are not highly important in learning an item. What is important is meaningfulness. While some researchers quibble on the issue of frequency (Ellis, 2002), in the case of second language learning, it appears that contextualized, appropriate, meaningful communication in the second language seems to be the best possible practice the second language learner could engage in.

Input

In the case of classroom second language learning, parental input is replaced by teacher input. Teachers might do well to be as deliberate, but meaningful, in their communications with students as the parent is to the child since input is as important to the second language learner as it is to the first language learner. And that input should foster meaningful communicative use of the language in appropriate contexts.

Discourse

We have only begun to scratch the surface of possibilities of second language discourse analysis. As we search for better ways of teaching communicative competence to second language learners, research on the acquisition of discourse becomes more and more important. Perhaps a study of children's amazing dexterity in acquiring rules of conversation and in perceiving intended meaning will help us to find ways of teaching such capacities to second language learners. We will look more at these issues in Chapter 9.

SOME "AGE-AND-ACQUISITION-INSPIRED" LANGUAGE TEACHING METHODS

In Chapter 2, we saw that research on language teaching in the "modern" era may have been sparked by François Gouin's observation of his young nephew's *first* language acquisition. Another look at language teaching methodology in a historical context reveals a number of instances of methods that were inspired by observation of and research on child *second* language acquisition. Two of these methods are described here, as examples of extending an understanding of children's second language acquisition to the adult second language classroom.

Total Physical Response

The founder of the **Total Physical Response** (TPR) method, James Asher (1977), noted that children, in learning their first language, appear to do a lot of listening before they speak, and that their listening is accompanied by physical responses (reaching, grabbing, moving, looking, and so forth). He also gave some attention to right-brain learning. According to Asher, motor activity is a right-brain function that should precede left-brain language processing. Asher was also convinced that language classes were often the locus of too much anxiety and wished to devise a method that was as stress-free as possible, where learners would not feel overly self-conscious and defensive. The TPR classroom, then, was one in which students did a great deal of listening and acting. The teacher was very directive in orchestrating a performance: "The instructor is the director of a stage play in which the students are the actors" (Asher, 1977, p. 43).

A typical TPR class utilized the imperative mood, even at more advanced proficiency levels. Commands were an easy way to get learners to move about and to loosen up: "Open the window," "Close the door," "Stand up," "Sit down," "Pick up the book," "Give it to John," and so on. No verbal response was necessary. More complex syntax was incorporated into the imperative: "Draw a rectangle on the chalkboard." "Walk quickly to the door and hit it." Humor was easy to introduce: "Walk slowly to the window and jump." "Put your toothbrush in your book" (Asher, 1977, p. 55). Interrogatives were also easily dealt with: "Where is the book?" "Who is John?" (students point to the book or to John). Eventually students, one by one, presumably felt comfortable enough to venture verbal responses to questions, then to ask questions themselves, and the process continued.

Like other methods of the twentieth century, TPR—as a method—had its limitations. It was especially effective in the beginning levels of language proficiency, but lost its distinctiveness as learners advanced in their competence. But today TPR is used more as a type of classroom *activity*, which is a more useful way to view it. Many successful communicative, interactive classrooms utilize TPR activities to provide both auditory input and physical activity.

The Natural Approach

Stephen Krashen's (1982) theories of second language acquisition have been widely discussed and hotly debated since the 1970s. (Chapter 10 will offer further details on Krashen's influence on second language acquisition theory.) One of the hallmarks of Krashen's theories is that adults should acquire a second language just as children do: they should be given the opportunity to "pick up" a language, and shouldn't be forced to "study" grammar in the classroom.

The major methodological offshoot of Krashen's work was manifested in the **Natural Approach**, developed by one of Krashen's associates, Tracy Terrell (Krashen & Terrell, 1983). Acting on many of the claims that Asher made for TPR, Krashen and Terrell felt that learners would benefit from delaying production until speech "emerges," that learners should be as relaxed as possible in the classroom, and that a great deal of communication and "acquisition" should take place, as opposed to analysis. In fact, the Natural Approach advocated the use of TPR activities at the beginning level of language learning, when "comprehensible input" is essential for triggering the acquisition of language.

The Natural Approach was aimed at the goal of basic interpersonal communication skills, that is, everyday language situations—conversations, shopping, listening to the radio, and the like. The initial task of the teacher was to provide comprehensible input—spoken language that is understandable to the learner—or just a little beyond the learner's level. Learners did not need to say anything during this "silent period" until they felt ready to do so. The teacher was the source of the learners' input and the creator of an interesting and stimulating variety of classroom activities—commands, games, skits, and small-group work.

The most controversial aspects of the Natural Approach were its "silent period" and its reliance on the notion of "comprehensible input." One could argue, with Richards & Rodgers (2001) and Gibbons (1985), that the delay of oral production can be pushed too far and that at an early stage it is important for the teacher to step in and encourage students to talk. And determining just what we mean by "comprehensible" is exceedingly difficult (see Chapter 10 for further comments). Language learning is an interactive process, and therefore an overreliance on the role of input at the expense of the stimulation of output could thwart the second language acquisition process. The Natural Approach, like TPR, also tended to lose its distinctive identity once a course was well under way.

But, of course, we also can look at the Natural Approach and be reminded that sometimes we insist that students speak much too soon, thereby raising anxiety and lessening the possibility of further risk-taking as the learner tries to progress. And so, once again, your responsibility as a teacher is to choose the best of what others have experimented with, and to adapt those insights to your own situation. There is a good deal of insight to be gained, and intuition to be developed, from examining the merits of methods such as TPR and the Natural Approach. Those insights and intuitions can become a part of your own cautious, enlightened eclecticism.

In this chapter we have touched on a number of significant perspectives on questions about age and acquisition. In all this, it is important to maintain the distinction among the three types (C1-C2; C2-A2; C1-A2) of age and language comparisons mentioned at the beginning of the chapter. By considering three logically possible comparisons, unnecessary loopholes in reasoning should be minimized. While some answers to our questions are less than conclusive, in many cases research has been historically revealing. By operating on our collective understanding of the effects of age on acquisition, you can, with some confidence, construct your own personal integrated understanding of that relationship, and how that relationship might hold fruitful implications for second language teaching.

Above all else, I call attention to the balanced perspective offered by Scovel (1999, p. 1):

> "The younger, the better" is a myth that has been fueled by media hype and, sometimes, "junk science." We are led to believe that children are better at learning foreign languages without fully considering all the evidence and without looking at all aspects of acquisition. On at least several planes—literacy, vocabulary, pragmatics, schematic knowledge, and even syntax—adults have been shown to be superior learners. Perpetuating a younger-the-better myth in arguments about bilingual education and other forms of early language intervention does a disservice to our children and to our educational enterprise.