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are needed at different times to serve different purposes. The function or purpose of language, as considered here, is to allow for an efficient, effective means to develop and exchange thoughts, feelings, ideas, and information. Because language is viewed as an individual's most valuable communication tool, the success of programs designed to treat impairment in language must be determined relative to the communicative purposes and environments in which it is needed. Other aspects of the environment also interact with efficient language processing. These aspects include the quality of the acoustical signal for spoken language, which may be affected by factors endogenous to the individual (such as the integrity of the hearing system), as well as exogenous factors (such as the rate of stimulus presentation). In these cases, intervention methods for enhancing the quality or availability of the language signal are consistent with the Dynamic Interactive Processing perspective.

The Dynamic Interactive Processing approach to language described here is relevant for monolingual as well as bilingual populations. However, the goal of this book is to draw attention to clinical decision making with bilingual populations with suspected or confirmed language disorders. Now that language has been operationally defined, we turn our attention to an operational definition of our primary population of interest—bilinguals.

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### Who Will Be Considered Bilingual?

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At its core, the term *bilingual* means two languages—a relatively simple concept. On the face of it, then, determining who is bilingual should be a relatively simple task. But because language is a dynamic, complex, social tool developed over extended time periods and used for an extraordinarily diverse set of purposes, the term bilingual necessarily encompasses the way these two languages are used by a single individual. Therefore, defining who is bilingual or what it means to be bilingual is not a simple task, nor should it be. Language is an extraordinarily complex (and fascinating) human phenomenon; two languages within a single individual is, at the very least, no less complex or fascinating. As such, there are many ways to define bilingualism and these definitions serve different purposes. Some definitions may be better or more encompassing than others, but there is no single correct definition.

Conventionally, the term bilingual has been used to refer to individuals who demonstrate some level of proficiency or ability in two different languages. The precise level of ability required in these proficiency-based definitions of bilingualism has varied considerably with the eye, and ear, of the beholder. In its most restricted form, the bilingual designator is reserved for those rare individuals who have equal and “native-like” ability in two different languages. Of course, it is important to recognize that there is also a wide range of language abilities within those who are native speakers of any given language.

Others use the term bilingual to refer to individuals who have some degree of fluency or communicative competency in two different languages, but with this cross-linguistic ability expected to vary. The degree of language ability required in these more variable proficiency-based definitions of bilingualism ranges from near perfect command of two different languages to native-speaker skill in one language alongside the ability to use a second language for practical, albeit somewhat trivial, purposes (Cook, 1997). It is also conventional to use age of acquisition as a definitional criterion in discussions of bilingualism. Specifically, individuals who have consistent experience with two different languages from birth or during very early childhood may be considered bilingual; individuals who have consistent experience with a single language during childhood and then begin to learn a second language during adolescence or beyond are not.

The operational definition of bilingualism used throughout this book departs sharply from these proficiency- and age-based criteria in at least two fundamental ways. First, bilinguals are not identified here by the attainment of some a priori level of proficiency in two different languages. Individuals who need two different languages to succeed in their environments, despite limited proficiency in one or both languages (due to an underlying impairment), will not be excluded from the bilingual category. Second, the term bilingual is not restricted to individuals who have experienced two languages within a certain time frame or age range. The bilingual classification will include individuals who learn two languages during childhood as well as those who learn a single language from childhood and a second language after adolescence. This is not to say that age of language acquisition or level of proficiency in each of two different languages is not important. To the contrary, both factors are fundamental considerations in research as well as clinical practice with typical and language impaired adults and children. The point is, rather, that proficiency and age of

acquisition can be considered as different characteristics of bilinguals, but need not be the determining factor for who is or is not considered bilingual. Different definitions of bilingual are needed for different purposes. The purpose of this text is best served by a more inclusive functional or needs-based definition of bilingualism.

### A Functional or Needs-Based Definition of Bilingualism

For present purposes, “who is bilingual” is determined from a functional or needs-based perspective. Individuals who have past, present, or future need for two different languages are of interest here and therefore considered bilingual. This definition is intentionally broad and inclusive, emphasizing the individual’s past, present, and future language experiences and environmental demands in which he or she lives. Because proficiency in a given language may wax and wane across time, age, communicative opportunities, and the integrity of the underlying language system, a minimal level of proficiency or ability in each language is not required to wear the bilingual label.

Included in this broad needs-based definition and therefore of interest in this book are young children with or without communication delays who currently or will in the future rely on two languages for meaningful interactions because their home language differs from that of the majority community in which they live. For example, the prelinguistic child in the United States whose family speaks only Spanish at home is considered under the bilingual umbrella here because it is anticipated that both Spanish and English will be needed for meaningful communicative interactions at some point during childhood. That is, although Spanish is the primary language needed for success in the child’s present (and presumably future) home environment, English will be needed for success in the academic setting in the future. The term bilingual is further extended to adults who relied on two languages for meaningful communicative interactions in the past but, as the result of acquired brain damage, struggle to communicate in either language. Thus the adult who spoke Hmong at home and English at work prior to incurring a global aphasia is considered bilingual because of previous language experiences that resulted in specific neurological language representations which should be considered in assessment and intervention. Also included as bilingual here is the speech-language pathologist in the United States who

**speaks English with his or her family, neighbors, and colleagues but provides clinical services to clients in another language. Table 1–2 provides a representative list of the types of language experiences that would be consistent with this functional or needs-based definition of bilingual. There are also many individuals who would not be**

Table 1–2. Examples of Typical Bilinguals Defined from a Functional or Needs-Based Approach

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- The 13-year-old Russian speaker who immigrated to the United States 6 months ago.
  - The 4-year-old recent immigrant to Toronto from Somalia who lives with his bilingual (Somali-English) mother and aunt.
  - The 2-year-old in Georgia whose parents and older siblings speak Hmong at home.
  - The 16-year-old high school student in San Diego whose parents speak mostly Spanish.
  - The 25-year-old recent graduate of the University of Minnesota who is volunteering as a speech-language pathology intern for one year in Honduras.
  - The 5-year-old entering kindergarten in Tempe, Arizona, whose parents speak only Spanish.
  - The 72-year-old retired pharmacist who immigrated with his spouse to Buffalo, New York, from Poland at age 53.
  - The 58-year-old Spanish speaker who works in construction and has two children attending High School in Reno, Nevada.
  - The 36-year-old ASL-English interpreter/translator in Seattle who is also the father of two hearing children.
  - The first, third, or fifth grader in a French-English immersion school in Michigan whose family speaks English at home.
  - The 45-year-old professor of Italian at Colorado State University. English was the first language; Italian was the focus of formal studies beginning in adolescence and continuing throughout graduate school.
  - The 26-year-old graduate student from China studying at the University of Southern California. English as a second language was studied in China beginning at age 16.
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considered bilingual from this perspective, despite some experience with two different languages. A few obvious examples of individuals not considered bilingual for present purposes are the young child adopted into a monolingual English-speaking family in the United States or United Kingdom from China or Eastern Europe, the vacation traveler who has learned a few phrases in Greek, or the college student completing his or her one-year foreign language requirement.

Globally, the coexistence or interactions of two or more languages within communities and within individual speakers is extraordinarily common. In many countries, children routinely are exposed to two or more languages from birth. In other countries, several languages coexist within the community and children begin learning a second (or third) language when they enter the school system. In the United States previously, and erroneously, considered by many to be a bastion of monolingualism, dual-language use by children and adults is common. At present an estimated 18% of the population over age 5 in the United States speaks a language other than English at home (U.S. Census Bureau, 2000). In addition to these “other than English speakers,” many native English speakers in the United States use other languages, such as Spanish, Italian, Mandarin, German, or American Sign Language for vocational purposes, thereby increasing the percentage of bilinguals, as defined here.

Although bilinguals are not defined here based on a priori levels of skill or proficiency in two or more languages, it should again be emphasized that this does not mean that language proficiency is not an important factor in bilingualism (or monolingualism for that matter). Proficiency in a specific language as well as general proficiency in language is described in the following section.

### Proficiency in a Language and Proficiency in Language

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For present purposes, *language proficiency* simply refers to skill or ability in a particular linguistic code, with no a priori standard or benchmark. Proficiency is a noun that requires a modifier to fully appreciate its meaning. High proficiency, native-like proficiency, or minimal proficiency can all be used to describe the relative level of attainment in a particular language.

A high level of proficiency or ability in any single language involves the acquisition of knowledge (consistent form-function mappings) as well as the efficient use of this known information (in terms of the processing speed required during real-time communicative exchanges) at different linguistic levels and in different modalities. Each of these knowledge and processing dimensions of the proficiency equation can be further broken down by linguistic levels (e.g., phonological, lexical, syntactic, pragmatic) and by channels or modes of communication (such as comprehension or production). Processing proficiency involves both efficient access of known forms as well as control of the system in the face of competition from linguistic or nonlinguistic sources (Kohnert, 2004).

Depending on outcomes of multiple interacting factors affecting language acquisition and use, proficiency in a particular language may be very high, very low, or fall anywhere between these points along the language-ability continuum. Proficiency in a language may also vary across an individual's lifetime. Neurologically intact monolingual adults have high levels of proficiency (indeed, native-like ability) in one language. For bilinguals, proficiency in each of the speaker's two languages is a relative term, the primary reference point being either between-speakers or within-speaker. In between-speaker judgments of proficiency, for example, the ability of the bilingual speaker may be compared to monolingual-speaker proficiency in each language. Terms such as *near-native speaker proficiency* or the now antiquated *semi-lingual* are a result of such between-speaker comparisons. In within-speaker comparisons, the bilingual individual's ability in one language serves as the reference point for quantifying proficiency in the other language. These types of within-speaker, cross-linguistic comparisons result in the terms *dominant* and *nondominant* to describe the individual's relatively stronger and weaker language, respectively. Those individuals determined to have equal proficiency in two different languages are referred to as *balanced bilinguals*. Neurologically intact bilinguals have high levels of proficiency in at least one language, with ability in a second language varying along this proficiency continuum from low to native-like. Although balanced or equal skill in two or more different languages is rare, it is possible. Much more common are bilinguals with varying levels of ability in their languages, consistent with different experiences and communicative purposes for each language.

Proficiency or ability in a particular language, as discussed in the previous paragraphs, is related to but not quite the same as general

proficiency in language. General language proficiency refers to the ability to efficiently map form to meaning in conventional and efficient ways, for meaningful communication. This general ability relies on the integrity of the individual's cognitive, neurological, sensory-motor, and social systems. Individuals who are lacking, for whatever reason, in their ability to "do" language, in the general sense, are considered to have impaired or disordered language. Bilingual individuals with developmental or acquired language disorders have a general language deficiency that manifests in each language. Limitations in general language proficiency stand in contrast to relatively reduced proficiency in a specific language due to reduced experiences or opportunities to learn or use that language.

### Limitations in Proficiency due to an Impaired Language Processing System

Language impairments can be described or classified in a number of different ways, including their presumed etiology or cause, the time of onset, as well as the primary systems affected. Deficiencies in language may have many different etiologies, including neurological disease, trauma to the brain, exposure to toxins such as alcohol or other drugs during the gestational period, or severe neglect during early childhood. In many cases, the precise cause of the observed language impairment is unknown. The time of onset refers to when the language impairment first manifests. Developmental language impairments are presumed to be congenital, or present from birth. In reality, discrepancies between a child's language skills and his or her age peers may not become apparent until much later, frequently between the ages of 2 and 12 years, when the acquisition of spoken and written language skills are at their peak.

Developmental disorders stand in contrast to acquired language impairments. Acquired language impairments occur after some period of normal development as the result of injury or disease. Language impairments can also be described in terms of the primary or associated systems affected. Impairments are considered primary when the most obvious area of deficit is the acquisition or use of language. Secondary or associated language impairments include those that occur with other major conditions, such as congenital hearing loss, progressive dementia, or mental retardation. These conventional methods

for describing language impairments are neither mutually exclusive nor all inclusive. They simply provide a starting point to compare and contrast language disorders, in general, and the particular features present or absent for a given individual.

Language disorders are determined by referencing typical or “normal” language performance. The parameters of normal or acceptable skills vary with age and language experiences, relative to the individual’s social environments. For example, to identify language impairment in a 6-year old boy who has learned Russian from birth at home and English at school beginning at age 4, we must consider his ability or proficiency, in both languages, as compared to typically developing children of the same age learning Russian and English under similar circumstances. In order to understand the severity of impairment in a bilingual Italian-English speaking woman with communication deficits following a stroke to the left hemisphere, we must understand her skill in each language prior to the injury, as well as the functional need for each language in her daily life.

Because typical language abilities serve as the reference point for determining language disorders, we focus on typically developing bilingual children in Chapter 3 and on language use in typical bilingual adult populations in Chapter 7. With this normal reference point in mind, we turn our attention to describing, assessing, and treating developmental language disorders in bilingual children (Chapters 4, 5, and 6). We then turn our attention to describing, assessing, and treating acquired language disorders in bilingual adults (Chapters 8, 9, and 10). In the following chapter, we continue with basic foundational issues, with a discussion of the cultural context in which language exists and professional cultural competencies needed to serve children and adults with language impairments (Chapter 2).

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and mentor others toward developing cross-cultural competencies. In the following section we take a closer look at core characteristics and professional behaviors of SLPs who are adept in interpersonal and intercultural clinical interactions.

### Characteristics of the Culturally Competent Speech-Language Pathologist (SLP)

Clinical cultural competency in speech-language pathology is the ability to provide services that are in the best long-term interests of individuals with suspected or confirmed communication disorders, in a manner that is understood and accepted by those receiving these clinical services (e.g., Anderson & Battle, 1993; Roberts, 1990). For clinicians providing assessment and intervention services to bilingual individuals with suspected language disorders, professional cultural competency is built on three fundamental knowledge domains: knowledge of self, knowledge of others, and knowledge of the theoretical and empirical literature on dual-language development, use, and disorders (Kohnert et al., 2003).

Learning to work effectively with individuals who are culturally or linguistically different from both our personal and professional experiences presents formidable challenges as well as considerable opportunities for personal growth and professional excellence. It is an ongoing process that requires conscious, positive participation, with benefits for the clinician as well as all other clients served by the SLP. The culturally competent SLP simultaneously appreciates cultural patterns and individual variation, engages in cultural self-scrutiny, embraces principles of evidence-based practice, and seeks to understand language disorders within the client's social context. Each of these four characteristics is described in the following paragraphs.

#### *1. Simultaneously Appreciate Cultural Patterns and Individual Variation*

Competence in cross-cultural interactions is the general ability to recognize and appreciate patterns of behavior associated with different cultural beliefs and values as well as the unique set of individual differences that are anticipated. This ability to at once recognize the forest and appreciate the individual trees within it is predicated on a

deep understanding that there are many different ways of seeing and being in the world. Implicit cultural learning as well as individual experiences will affect an individual's behaviors and responses in any particular situation. The "forest" view alerts us to important and sometimes defining characteristics that provide direction and guidance in clinical interactions. It is also the case that these general cultural grouping variables must always be qualified, enriched, and further informed by experiences, preferences, characteristics, and abilities unique to the client and his or her family. Failure to see the individual "tree" results in erroneous generalizations and stereotyping.

Culturally experienced SLPs learn about cultural characteristics of others in their community and on their clinical caseloads. There are many sources available that serve as starting points for learning about general characteristics of different cultural groups. A simple "Google" search produces multiple Web sites and references for almost any recognized culture. Some of these sources are very good, others less so. Discriminating consumerism is, as always, essential. There are also a number of excellent resources that discuss cultural variation as it intersects with communication disorders. For starting points, see Battle, 2001, and Wallace, 1997.

## *2. Engage in Cultural Self-Scrutiny*

Professionals who provide services to children and adults with language disorders are first and foremost human, with personal, professional, and cultural beliefs. Preferences, biases, and the occasional tendency to prejudge others based on insufficient information are also all part of being human. The culturally competent SLP scrutinizes his or her own thoughts and behaviors for cultural biases prior to their unchecked manifestation in behavior with clients. This self-awareness and self-vigilance is part of the ongoing process of achieving and maintaining integrity in cross-cultural as well as all interpersonal clinical interactions. Clinicians who successfully work with bilingual children and adults recognize the culturally-embedded nature of their own behaviors, values, and beliefs. They continue to learn about themselves through others and are willing to put their own perceptions and professional actions under the proverbial microscope. When this close examination reveals the inevitable cultural misstep, the culturally competent SLP seeks to correct it. In so doing the SLP reveals his or her own learning process to clients. This willingness to be vulnerable

in communications with clients and families does not damage trust; to the contrary, it serves to build and sustain interpersonal interactions, strengthening connections with families. Cultural competence self-awareness checklists for SLPs may serve as a useful starting point in this process and are available from the American Speech-Language-Hearing Association (ASHA) at <http://www.asha.org/about/leadership-projects/multicultural/self.htm>

### *3. Embrace Principles of Evidence-Based Practice (EBP)*

In line with other health-related service disciplines, evidence-based practice (EBP) has been adapted by ASHA as a primary guiding principle for SLPs (ASHA, 2005). EBP in speech-language pathology refers to an approach to clinical decision making in which different sources of information are integrated into an action plan that best serves the long-term interest of individuals with communication disorders. Three sources of information serve as the basis for decision making within the EBP framework: client characteristics, clinician expertise, and empirical evidence (ASHA, 2005; Sackett, Straus, Richardson, Rosenberg, & Haynes, 2000). The triangulation of information garnered from these three sources is considered “best practice.”

The beauty of EBP in speech-language pathology is that client characteristics are viewed as essential information sources. Client characteristics include the different languages or dialects needed to be successful across various settings as well as the cultural contexts associated with these different languages (Kohnert, in press). Clinician expertise is the second source of information relied on for clinical decision making from an EBP approach. Clinician expertise is accumulated from direct experiences with individuals with language disorders with whom they do not share a primary language or culture, through consultation with other professionals who have firsthand experience with diverse populations, as well as through case reports in the literature.

Empirical evidence is the third informational source needed for EBP and the one that has garnered the most attention. The EBP mandate is that clinical decisions should be based on the highest quality of evidence available. Given the paucity of research on populations outside the mainstream, culturally competent SLPs engage in clinical research to obtain the empirical evidence needed to inform assessment and intervention. For example, in collaboration with regular

classroom teachers, the SLP may collect performance data on selected communicative tasks for all typically developing Somali-English speaking primary grade children at a school to serve as a basis for comparison in future assessments for children referred with suspected language delays.

As another example, the clinician may use single-subject design to document the effectiveness of a treatment plan for a bilingual Hmong-English speaking 59-year-old with language impairment following a stroke. By applying basic principles of single-subject design, the SLP is able to see lawful relationships between treatment activities and client responses, to generate the evidence needed for EBP (Kohnert, in press). This information obtained directly from the client will provide the empirical evidence needed to either continue the current treatment protocol, if successful, or to alter it as needed when sufficient improvements in client behavior are not present (Kazdin, 1982). Data obtained in the clinical setting further increases SLP expertise and allows for improved services to children and adults with diverse cultural or language experiences.

#### *4. Consider Language Disorders within the Social Context*

Language is a communicative tool used for social purposes. To understand the impact of language disorders and develop appropriate action plans, the culturally competent SLP seeks to understand the communication contexts and needs of clients and their families. Systematic consideration of the presence and nature of clients' social relationships is essential to culturally specific and sensitive assessment and intervention planning (Vickers & Hagge, 2005). The unit of social structure can be considered in terms of people and relationships (parents, spouse, children, grandchildren, siblings, religious leaders, coaches, teachers, friends, paid care provider, SLP, social worker, physician), the frequency of contact with these individuals (daily, weekly, often, occasionally), the languages used in these interactions (English, Spanish, Arabic), and if these relationships are permanent or transient. The ways languages are used in each of these social relationships and the purposes they fulfill are also considered (e.g., book reading with a grandchild in English daily to fulfill emotional needs; conversing in Spanish on the telephone several times a day in professional sales position to

fulfill financial needs; or requesting medication or transportation in English to fulfill health-related needs).

In order to understand language in its broader context, the clinician must engage in positive personal conversations to understand the client's life circumstances and the family's values and perceptions regarding the individual's language abilities and needs. This requires a significant amount of trust. To facilitate this trust, culturally competent clinicians are genuine, open, and congruent in their intentions and actions. They also trust in the good intentions of family members. SLPs communicate openly, clearly explaining reasons that motivate the questions they ask and the recommendations they make. They provide a safe environment for the client and family to share information. This sophistication in building and maintaining professional relationships is achieved not by ignoring differences but rather by recognizing and respecting cross-cultural variations in beliefs, values, and behaviors. Specific techniques employed by culturally competent SLPs to establish and maintain positive cross-cultural and cross-linguistic relationships are introduced in the following section.

### Tools to Facilitate Cross-Cultural Information Exchanges

Culturally competent professionals are able to engage in positive conversations with clients and their families to exchange information critical to assessment and intervention goals. Specific tools used in these positive cross-cultural interactions include ethnographic interview techniques, "Skilled Dialogue," and effective collaborations with interpreters and translators. Although all three of these communication techniques may come into play in any single conversational exchange with clients and family members, they are presented separately here.

#### Ethnographic Interviews

Ethnographic methods of data gathering are qualitative, rather than quantitative, and are used in cultural anthropology to gain a detailed understanding of the circumstances of a particular culture or group

what it might be like to be a school-age child or adolescent with LD. Some experts have used the *foreign language analogy* to describe LD. In this analogy, difficulties in formulating expressive language are compared to difficulties that one has interacting with native speakers of a language in which one is not fluent—a common experience for many global travelers. However, this analogy begins to break down when we recognize that language difficulties experienced by the foreign traveler are transient in that there is a ready retreat to an alternate sphere of language competency. Unfortunately, for the individual with LD there is no such safe language haven and no readily apparent alternative route to learning in the traditional academic setting in which language is the medium of instruction. One way to simulate expressive language difficulties experienced by individuals with LD is to try to carry on a conversation with a friend while avoiding certain sounds (e.g., /n/ so that “*I want to go . . .*” is not permissible but can be replaced with the starter phrase “*I am going . . .*”). You will notice that in following this rule, the formulation of language is labored, requiring increased cognitive effort. This is particularly true given the pragmatic demands of contingent responses, so working ahead to develop a list of possible sentences is not a socially effective alternative. In order to gain insight into the receptive side of LD, listen to new information, perhaps an audio CD of an interesting but complex book such as “*Art & Physics: Parallel Visions in Space, Time & Light*” (Shlain, 1991) in the presence of significant background noise or while driving through heavy traffic in the rain. In the video, *How Difficult Can This Be?—F.A.T. City*, Richard Lavoie (1989) takes the viewer through a series of simulations of LD in both written and spoken domains—a useful tool to facilitate understanding among parents, allied professionals, and students with LD.

### Oranges Masquerading as Apples: Typical Bilinguals Compared to Monolingual LD

There was a provocative book on the 2005 New York Times bestseller list coauthored by Steven Levitt and Stephen Dubner titled *Freakonomics: A Rogue Economist Explores the Hidden Side of Everything*. The cover of this book shows a green apple, with a slice removed to reveal a decidedly juicy orange—an interesting twist to the proverbial

apples to oranges comparisons, and perhaps an appropriate analogy for considering bilinguals and single language speakers with LD. Surface similarities between typically developing children learning a second language (L2) and monolingual children with LD lie at the heart of the *different* or *disordered* diagnostic challenge faced by SLPs and special educators.

LD is traditionally identified on the basis of language performance on selected tasks, with the most sensitive tasks varying with the child's age and developmental level, native language, severity of impairment, and individual characteristics. To identify language behavior falling outside the expected range for a particular monolingual English-speaking child, his or her performance on diverse language tasks is compared to that of performance norms or standards from children with similar language-learning experiences. Children with performance or ability below some critical cutoff level may be considered LD (with this critical minimum varying to some degree across settings, highlighting the somewhat arbitrary nature of the discrepancy criteria used to separate LD from more generic "low language"). When language experience varies substantially across learners, as is the case for typically developing children learning two languages, similar task performance may have different causes. Similar performance resulting from different causes leads to difficulty in answering the most fundamental assessment question: *Is this child's low language performance caused by an underlying child-internal weakness in interacting with the available language? Or is low performance better explained by differences in the child's experience in the test language?* In the following sections selected studies which have investigated potential areas of overlap and divergence between monolingual LD and typically developing L2 learners are presented.

### Language-Based Comparisons between LD and L2 Learners

Proficiency in any given language is comprised of many interacting layers. Different measures are designed to selectively measure skill at each of these layers at different stages of development. Some measures are static in that they measure existing language achievements or knowledge at phonological, morphosyntactic, lexical-semantic, or pragmatic levels. Other measures are dynamic and provide some