



# The Clinical Assessment of Language Comprehension

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# Understanding Comprehension and Comprehension Assessment

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Since the early 1970s, during the explosion of knowledge in the field of child language and language pathology, we have learned a tremendous amount about the process of linguistic development. One thing we have learned is that language comprehension and production, while following predictable patterns of acquisition in most children, do not always correspond perfectly to each other, even in an individual child. Paul (1990), for example, discussed research showing that children who can produce certain syntactic forms, such as sentences with appropriate subject-verb-object word order, often are unable to demonstrate comprehension of the same sentences in formal testing situations. It seems that the traditional wisdom that “comprehension precedes production” is not operating—at least for some structures and during some developmental periods. To us, as clinicians, this is more than an interesting empirical finding. It means that we cannot make assumptions about language comprehension on the basis of a child’s production, or vice versa. It also means that in order to get a complete picture of a child’s language competence, each modality of language will have to be assessed independently.

In this book, we present a series of informal, nonstandardized procedures and activities that can be used to assess children’s understanding of spoken language. Beginning in 1980, these procedures have been developed in the diagnostic evaluation clinic at the Waisman Center, an interdisciplinary training and research center at the University of Wisconsin–Madison, which serves a population of young children with developmental disabilities and multiple disabling conditions, by a variety of student and professional clinicians. The procedures were developed in response to the need to get a detailed picture of the receptive language ability of difficult-to-test children with a variety of disabilities at a range of developmental levels. The procedures are norm referenced in the sense that they were constructed with normal developmental data on comprehension acquisition in mind. A brief overview of the typical sequence of comprehension skills acquisition is presented in Table 1.1, along with some of the strategies typically used at each level. Clinicians can relate the comprehension performance they observe both to typical acquisition and to the child’s level of language production, cognition, and other areas assessed in response to the procedures in this book. This information can help to develop a profile of performance, like the one shown in Figure 1.1. This profile can be used to describe a child’s baseline level of language and cognitive skills, to determine intervention priorities, and to serve as a benchmark for progress in the intervention program. Miller (1981) described the use of such developmental profiles in detail.

It is important to bear in mind, however, that although the procedures presented here are norm referenced, they are not standardized.

Table 1.1. Summary of comprehension development and strategies in children

Approximate age range	Normal comprehension skills	Possible strategies
8–12 months: Comprehension of routines	Understands a few words in context (e.g., plays peekaboo when mom says words and models gestures, responds to direction “splash” if in tub)	<ol style="list-style-type: none"> <li>1. Look at objects that mother looks at.</li> <li>2. Act on objects at hand.</li> <li>3. Imitate ongoing action.</li> </ol>
12–18 months: Lexical guides to context-determined responses	<p>Understands single words for objects in immediate environment</p> <p>Will get an object if told to when object is in view</p> <p>Will perform some actions (e.g., kiss, hug, pat) with verbal instruction alone</p> <p>Knows names of familiar people</p> <p>Average receptive vocabulary size:            12 months: 3 words            15 months: 50 words            18 months: 100–150 words</p>	<ol style="list-style-type: none"> <li>1. Attend to objects mentioned.</li> <li>2. Take objects offered.</li> <li>3. Do what you usually do with objects at hand:               <ol style="list-style-type: none"> <li>a. Objects into containers</li> <li>b. Conventional use</li> </ol> </li> </ol>
18–24 months: Lexical comprehension but context determines sentence meaning	<p>Understands two-word combinations similar to those produced including:            action-object            agent-action            possessor-possession            entity-location            action-location</p> <p>Understands words for objects that are out of view</p> <p>Does not process three-term relations (e.g., agent-action-object) fully</p> <p>Average receptive vocabulary size:            150–500 words</p>	<ol style="list-style-type: none"> <li>1. Locate the objects mentioned and give evidence of notice.</li> <li>2. Do what you usually do with objects at hand:               <ol style="list-style-type: none"> <li>a. Objects into containers</li> <li>b. Conventional use</li> </ol> </li> <li>3. Act on objects in way mentioned:               <ol style="list-style-type: none"> <li>a. Child-as-agent</li> <li>b. Choose handier object as instrument</li> </ol> </li> </ol>
24–42 months: Context-influenced comprehension	<p>Understands three-term relations (agent-action-object) but has difficulty using word order to identify agent versus object in improbable (e.g., Baby feeds mother) or neutral (e.g., Horse pushes cow) sentences</p> <p>Understands <i>who</i>, <i>what</i>, <i>where</i>, and <i>whose</i> questions</p> <p>Average receptive vocabulary size:            300–1,000 words</p>	<ol style="list-style-type: none"> <li>1. Do what is usually done:               <ol style="list-style-type: none"> <li>a. Probable location strategy for <i>in</i>, <i>on</i>, <i>under</i>, and <i>beside</i></li> <li>b. Probable event strategy for simple active reversible sentences</li> </ol> </li> <li>2. Supply missing information (2 years) to questions not understood.</li> <li>3. Supply explanation (3 years) to questions not understood.</li> <li>4. Infer most probable speech act in context.</li> </ol>
42–48 months: Emerging syntactic comprehension	<p>Understands word-order cues to agent-action-object relations</p> <p>Understands <i>how</i> questions</p> <p>Average receptive vocabulary size:            1,000–3,000 words</p>	<p>Comprehension of word-order cues to agent-object in active sentences (word-order strategy) when probability does not distract</p> <p>Word-order strategy overgeneralized to passive</p>
4–8 years	Understands syntactic cues in basic sentence forms	<p>Order of mention of clauses</p> <p>Probable relation of events strategy for causal conjunctions</p>

(continued)

Table 1.1. (continued)

Approximate age range	Normal comprehension skills	Possible strategies
4–8 years (continued)	Begins to learn exceptions to basic rules (e.g., passive sentences) Understands <i>when</i> questions Average receptive vocabulary size: 3,000–8,000 words	Understanding of contrastive conjunctions <i>but</i> and <i>although</i> as though they mean <i>and then</i> when probable relation not obvious

Adapted by permission from Chapman, R. (1978). Comprehension strategies in children. In J.F. Kavanaugh & W. Strange (Eds.), *Language and speech in the laboratory, school, and clinic* (pp. 309–327). Cambridge, MA: MIT Press.

This distinction means that the procedures have not undergone the extensive psychometric studies necessary to determine their reliability, validity, standard error of measurement, and so forth. The advantage of their lack of standardization is that they can be adapted in any way to any child’s needs and abilities, unlike standardized tests, which must be given precisely according to the manual’s instructions to preserve their psychometric properties. Because they are not standardized, these procedures cannot be used to determine *if* a child’s comprehension skills are significantly different from those of typically developing children. To make that determination, a standardized instrument must be used. However, if a child has performed below criterion on standardized testing, or has already been diagnosed as demonstrating a significant language disorder, the procedures in this book can be used to compare comprehension to production skills, to investigate a range of different receptive abilities, and to help set priorities among intervention goals.

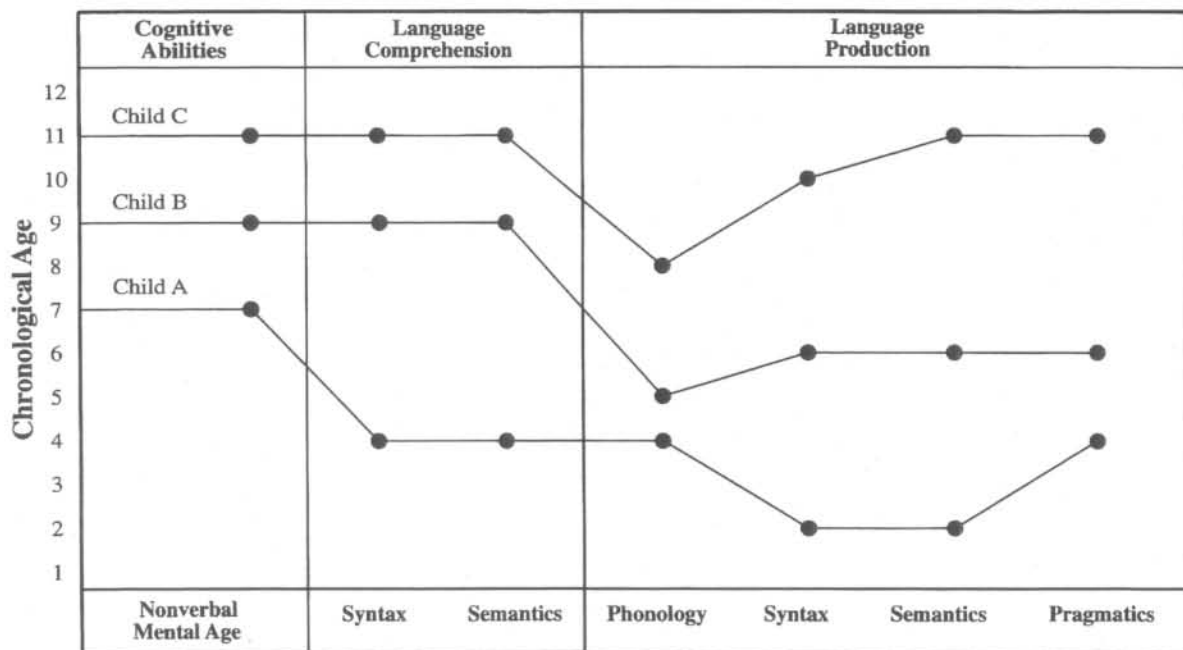


Figure 1.1. Developmental profiles of three children. Child A has language comprehension and production delayed relative to nonverbal cognitive abilities. Child B has language production delayed relative to language comprehension and nonverbal cognitive abilities. Child C’s language is developing normally, with language production and comprehension equal to nonverbal cognitive status and chronological age. Only phonological production is delayed. (From Paul, R. [1995]. *Child language disorders from birth through adolescence: Assessment and intervention*. St. Louis, MO: C.V. Mosby; reprinted by permission.)

The procedures are presented in developmental order, from those appropriate for children whose language is just beginning to emerge through those aimed at assessing language necessary for success in school. The procedures are divided into chapters based on three developmental levels, using the terminology employed by Paul (1995). The developmental level refers to the *linguistic* stage, based on production performance, in which a child is currently functioning, rather than to the child's chronological age. To do an informal assessment of comprehension, you would need to identify a child's level of linguistic production, either through language sample analysis (Miller, 1981; Miller & Leadholm, 1992) based on the child's mean length of utterance (MLU) and corresponding language level in Brown's stages (see Table 1.2), or more informally by simply having a short conversation with the child and selecting a general production stage by recognizing the production milestones listed below. Suppose, for example, you are seeing a 6-year-old child with Down syndrome. During a short chat around a set of toys, you might observe that the child produces primarily one- and two-word sentences. After confirming with the parent or caregiver that this production is typical for the child, you would assess comprehension by starting at the language level that corresponds to this linguistic performance: the emerging language stage. If the child performs well on the comprehension assessments for this stage, you can go on to testing higher levels. Testing would continue until a ceiling level of performance, indicated by an inability to respond correctly to a majority of items probed, is reached. Many children with limited production skills have more advanced receptive abilities, but current production level provides a logical place to start comprehension evaluation. The chapters in this book, then, are organized as follows:

Table 1.2. Predicted MLU ranges and linguistic stages of children within one predicted standard deviation of predicted mean

Age $\pm$ 1 mo.	Predicted MLU <sup>a</sup>	Predicted SD <sup>b</sup>	Predicted MLU $\pm$ 1SD (middle 68%)	Brown's stages within 1 SD of predicted MLU									
				EI	LI	II	III	EIV	LIV/EV	LV	Post V		
18	1.31	.325	.99–1.64	X	X								
21	1.62	.386	1.23–2.01	X	X	X							
24	1.92	.448	1.47–2.37	X	X	X							
27	2.23	.510	1.72–2.74		X	X	X						
30	2.54	.571	1.97–3.11		X	X	X	X					
33	2.85	.633	2.22–3.48			X	X	X					
36	3.16	.694	2.47–3.85			X	X	X	X				
39	3.47	.756	2.71–4.23				X	X	X	X			
42	3.78	.817	2.96–4.60				X	X	X	X	X		X
45	4.09	.879	3.21–4.97					X	X	X	X	X	X
48	4.40	.940	3.46–5.34					X	X	X	X	X	X
51	4.71	1.002	3.71–5.71						X	X	X	X	X
54	5.02	1.064	3.96–6.08							X	X	X	X
57	5.32	1.125	4.20–6.45								X	X	X
60	5.63	1.187	4.44–6.82									X	X

From Miller, J., & Chapman, R. (1981). The relation between age and mean length of utterance in morphemes. *Journal of Speech and Hearing Research*, 24, 154–161; reprinted by permission.

<sup>a</sup>MLU is predicted from the equation  $MLU = -.548 + .103 (AGE)$ .

<sup>b</sup>SD is predicted from the equation  $SD\ MLU = -.0446 + .0205 (AGE)$ .

Chapter 2: Assessing Comprehension in the Emerging Language Stage

- Developmental level: 8–24 months
- Language level: Brown's stages I–II; MLU 1.0–2.5
- Production milestones: At this level, children are producing single words and some early word combinations. Vocabulary size is generally small, fewer than 100 words. Few morphological markers are used. Phonological repertoire may also be limited, with certain consonants and syllable types (consonant-vowel-consonant [CVC], multisyllabic words) missing.

Chapter 3: Assessing Comprehension in the Developing Language Stage

- Developmental level: 24–60 months
- Language level: Brown's stages III–V; MLU 2.5–4.5
- Production milestones: During this stage, children are acquiring the basic vocabulary and syntax of the language. Vocabulary size is expanding rapidly. Morphological markers are beginning to be used in speech. A variety of sentence forms, such as questions and negatives, are beginning to contain appropriate syntactic marking. Toward the end of the stage, complex sentences begin to be used. Phonological simplification processes may interfere with intelligibility.

Chapter 4: Assessing Comprehension in the Language for Learning Stage

- Developmental level: 5–10 years
- Language level: Brown's stages V+; MLU 4.5 and up
- Production milestones: Vocabulary is large (greater than 5,000 words). Basic syntax in simple sentences has been acquired; few grammatical errors are heard in speech. Some complex sentences (about 20% of utterances in speech samples from typically developing children [Paul, 1981]) are used. Most morphological markers are used consistently, although a few errors (e.g., overgeneralization of past tense) may persist. Most phonological simplification processes have been eliminated; one or two may remain. Distortions of a few sounds may also be present. Speech is intelligible.

Before describing in detail the procedures for assessing comprehension, it is important to discuss the process of comprehension: what it means, why it is important, why it may present some unique assessment difficulties, and how we can address these difficulties in the evaluation process.

## WHAT IS COMPREHENSION?

*Comprehension, understanding, listening, and receptive language* are terms we all use so frequently in the practice of speech-language pathology that we rarely stop to ask ourselves what we mean by them. In the most general sense, *linguistic comprehension* refers to the ability to interpret and

make sense of spoken or written language. This includes the ability to associate words with the objects and the events they represent in a particular language (i.e., lexical knowledge) and the ability to decode the relationships among words encoded by particular grammatical devices and to understand the ideas conveyed by sentences (i.e., semantic/syntactic knowledge). Of course, comprehension of language requires much more than linguistic comprehension. If it didn't, computers would comprehend everyday speech and translate one language into another with ease. The reason that we do not have such computers is that a great deal of additional knowledge that has little to do with words and sentences is needed to make sense of everyday conversation. Here are just a few examples of this additional knowledge:

1. *Social knowledge* and understanding of *intentionality* tell a child that when Mom says, "Do you want to be sent to your room without supper?", she is not asking a question to obtain information about preferences and requiring a yes-or-no answer. Instead she is issuing a threat to be responded to by ending the trampoline game on the sofa.
2. Understanding the *preparatory* and *sincerity conditions for speech acts* allows us to interpret the response "Is the Pope Catholic?" to our query "Are you hungry?" as a "yes" answer. We can do this because we know that it would be insincere to ask a question to which it was obvious that both the speaker and the listener already know the answer. We figure, then, that the question was not meant literally, but was used in order to convey something else. Probably, the speaker meant that the answer to our question is as obvious as the answer to his or hers.
3. Understanding of *cohesive devices*, which are linguistic markers that tell us that we need to look beyond an individual sentence to other parts of a text in order to grasp the full meaning of a passage. When we read "Alice ate the cake," for example, we realize that the speaker is referring to a previously mentioned pastry. We know we need to search our working memory for some prior reference to a cake in the text.
4. *Scriptal knowledge* tells us that when the cashier at the fast food counter says, "What'll it be?", our answer should consist of something on the posted menu, and not "Sunny tomorrow."
5. Knowledge of the *presuppositions*, or underlying assumptions, inherent in certain words allows us to understand that when a friend tells us some neighbors "*managed* to sell their house," we can divine not only that the house was sold, but that the real estate market is not at its peak in that neighborhood.
6. Other kinds of presuppositions are derived from *knowledge about the world*, rather than from words and sentences themselves. A worried politician might, for example, say ominously to her aide, "It's raining." The aide must understand the candidate's presupposition that rain means fewer voters will go to the polls and fewer voters at the polls mean fewer votes for the candidate.
7. *Specific background knowledge* ensures that, when our softball teammate says, "You're no Sandy Koufax," we resolve to volunteer for the outfield rather than asking to pitch in the next game.
8. *Inferencing* is involved in comprehension of sentences such as, "I got hungry while I was shopping, so I got a burger." Here the listener

infers that the burger did not appear out of midair, but that the speaker went to a restaurant and ordered a hamburger, which was served and for which he or she paid. Speakers know they do not need to include all of this information in their utterances, but can rely on listeners to make reasonable inferences based on knowledge of how things ordinarily happen in the world.

In other words, working out the literal meaning of what we read or hear—identifying the referents of single words and decoding the meaning relations within sentences—is just one part of the comprehension process. Let's call it the *literal level* of comprehension, for want of a better term. Other aspects of comprehension involve making judgments based on social, textual, scriptal, and other forms of prior knowledge to figure out what an utterance *really* means, in relation to what else has gone on in the discourse and to the intentional state of the speaker. We will refer to this as the *discourse level* of comprehension. Both literal and discourse levels are crucial to a listener's ability to get the full range of meaning from language.

## PROBLEMS IN ASSESSING COMPREHENSION

Talking, like comprehending, of course, involves the coordination of a multitude of skills and spheres of knowledge. Although it is not always possible to know all of the processes that occur before the production of an utterance, at least we have the talk itself to analyze when we attempt to characterize a child's language production skills. But what do we examine when we assess comprehension? Comprehension is an event that takes place privately within the mind of the listener. It is often possible to judge whether listeners have understood us by means of their response in either words or actions. However, it is easy to think of situations in which apparently appropriate responses are used to give us the impression of comprehension when, in fact, none has occurred. Many of us might use tactics such as head-nodding, "um hm-ing," or adopting an intense facial expression, for example, to give a professor the idea that we have understood a lecture that, in fact, went completely over our heads. We might use the same tactics to appear to be following a description of the joys of step aerobics at a party at which we were really more intent on overhearing the name of the new arrival in tight jeans. Similarly, it is quite simple to imagine a situation in which comprehension has taken place but no overt evidence of it is given. Again, the lecture situation is a good example. A student can easily listen to a lecture, understand its content, and not give any outward sign of understanding until, perhaps, the day of the final exam.

Because comprehension differs from speech in that it is basically a private event, certain problems arise when we think about assessing a child's comprehension abilities. It seems obvious that the most valid way to assess a child's language production is to listen to what he or she says in spontaneous speech, tape record it, write it down, analyze it in some systematic way, and compare the result to developmental norms (Miller, 1981). Unfortunately, deciding on the most valid method for assessing comprehension is more problematic. The previous discussion described how adults use certain strategies, such as looking intently at the speaker and nodding the head, in order to appear to be listening or understanding when they really may not be doing either. Children also adopt some tactics for appearing to process linguistic input when they are, in fact,



relying on the nonlinguistic context or a small portion of the linguistic signal in choosing a response. These strategies are discussed later in this chapter. For now, we need to be aware that they must be taken into account in the assessment process.

This problem brings us to the second difficulty in assessing comprehension: the need to examine both the literal and discourse levels of comprehension. Assessment with standardized tests has generally concentrated exclusively on the lexical and semantic/syntactic levels. The most widely used comprehension tests focus on vocabulary, morphology, and syntax. These tests have been criticized for failing to evaluate the complete range of operations the listener performs in understanding utterances in even the most common communication situations (Rees & Shulman, 1978). As we have seen, decoding the literal meaning of isolated sentences, like the ones usually used in formal comprehension testing, is only one piece of the comprehension process. To assess comprehension of literal meaning alone leaves open several other questions about the real process of understanding. For example, does the child understand the speaker's intention, the illocutionary force of the utterance? That is, can the child decide that "Can you pass the salt?" requires an action, rather than a yes-or-no answer? Can the child use information outside the sentence to determine how old information in the discourse relates to the new information being conveyed? Can he or she make appropriate inferences from the information given?

An additional problem with the assessing of discourse-level comprehension skills is that it is difficult to know what aspect of the signal the child is responding to, especially if traditional methods such as formal tests that remove extralinguistic cues are not used. When the child "demonstrates comprehension" by following an instruction in a natural setting, we do not know whether the child is responding correctly to the words, the context, prior knowledge, or some combination of cues. If, alternatively, the child fails to respond appropriately, at what level of processing has this failure occurred? In conversation, failures to derive the speaker's meaning may occur at one or more levels, including the interpretation of intent, the decoding of grammatical structure, or the understanding of single words. In order to interpret failures at discourse levels of processing, we will want to ensure that more basic lexical/syntactic aspects of comprehension have proceeded successfully. For example, a visiting 4-year-old child may not reply properly when asked, "When are you supposed to go home?" for either of two reasons. The word *when* may require knowledge of time concepts beyond her current level of lexical/cognitive development, or she may have failed to interpret the speech act as a polite suggestion that it is time to leave. A child with a language disorder who has relatively good pragmatic, or discourse-level, comprehension and can guess at a speaker's general intentions even though he or she has little knowledge of the propositional content of an utterance, may be generally better off than a child with poor literal and discourse-level skills. Nevertheless, both children will still be severely limited in the ability to gain meaning from interaction.

These three problems—the private nature of comprehension, the need to assess both literal and discourse-level abilities, and the difficulty in contextualized situations of knowing what levels of comprehension skills are operating or breaking down—are the ones that must be solved

in order to get a complete picture of a child's comprehension skills. Before we try to solve these problems, though, let's ask a more basic question.

#### WHY ASSESS COMPREHENSION?

Why is it important to know about a child's abilities with both the literal and discourse levels of comprehension? Isn't it enough to assess language production and develop intervention goals based on those results? Lahey (1988) concluded from her review of research on comprehension versus production training that comprehension responses, such as pointing to contrastive stimuli, do *not* need to be trained before production of the forms is targeted. Guided production activities appear to facilitate both comprehension and production of the new forms in children. So, why worry about a child's comprehension skills? There are several reasons clinicians should be encouraged to assess comprehension skills in their clients.

#### To Ensure Eligibility for Services

There are basically two kinds of language disorders in children: disorders of only production, and disorders of both comprehension and production (Miller, 1987a; Miller, Campbell, Chapman, & Weismer, 1984). Disorders of only production are more common than disorders involving both modalities (Bishop & Edmondson, 1987; Miller, Chapman, Branston, & Reichle, 1980), but both types of disorders do exist, and there are reasons that we need to be able to distinguish between them. One reason has to do with eligibility for services and the type and intensity of intervention a child will receive. Children with documented impairments in two areas, such as language production and comprehension, can often qualify for more frequent or earlier intervention than children with disorders in only production.

#### To Help in Selection of Intervention Modality

Another reason to assess comprehension concerns the choice of a modality for intervention. In cases of severe production limitations, such as speech motor abnormalities associated with conditions like cerebral palsy, knowing a child's comprehension status can determine whether or not an augmentative and alternative modality, such as sign language or a communication board, should be introduced. Children with severe speech motor limitations but more advanced comprehension abilities have more to gain from an alternative system because they have a solid receptive foundation on which to build a production system. Those with little speech and limited comprehension abilities will benefit less rapidly from an augmentative system because they have less receptive groundwork on which a production repertoire can be based (see Paul [1995] for more detailed discussion of this issue).

#### To Select Appropriate Intervention Goals and Activities

As Fey (1986) points out, forms a child comprehends but does not produce are high-priority intervention targets, because the comprehension performance indicates the forms are, in Vygotsky's (1962) terms, in the child's "zone of proximal development" (ZPD), which refers to tasks the child is able to do with help and scaffolding from an adult, but cannot yet do alone. For example, adults often teach children to write their names by drawing dots to guide the child's first attempts:



To Compare  
Comprehension  
in Contextualized  
and Decontextualized  
Settings

Using this scaffolding, the child achieves something he or she could not yet do alone. Activities within a child's ZPD are within the reach of learning.

Alternatively, if a form is neither comprehended nor produced, some additional exposure, in the form of enriched input language during child-centered play sessions or focused stimulation activities (Fey, 1986), may be an especially important component of the intervention program. So, we would like to know whether or not a child can understand forms he or she does not say. This knowledge will determine the goals and activities that get high priority in the intervention program.

It is also important to know about a child's comprehension skills because very often they appear to be better than they are. The reason for this has to do with our two levels of comprehension. Although it might seem logical that children would learn literal comprehension before discourse-level skills, in fact the opposite is, to some extent, true. Children very often learn to take advantage of information present in social situations to help them respond to speech directed to them, essentially shortcutting literal comprehension and relying primarily on some aspects of discourse-level knowledge. These shortcuts, or *comprehension strategies* (Chapman, 1978), are used at early ages to allow children to make a guess at a speaker's intentions before they can actually process the lexical and syntactic information in sentences. Table 1.1 presents a summary of these comprehension strategies used at various developmental levels.

Of course, these comprehension strategies will only work in a very friendly atmosphere where everything is arranged to ensure the child's success. In order for the child to be successful, parents or caregivers must choose utterances judiciously, based on knowing what the child is likely to do, and conversation must be focused on objects and events immediately perceivable by the child. We can refer to this friendly situation as a *contextualized comprehension* setting. The context provides a great deal of information that is helpful in figuring out what people are talking about. However, many comprehension situations are *decontextualized*. They contain few cues beyond the words and sentences themselves that help a listener derive meaning. Talking on the telephone is one example of decontextualized conversation. The kind of language used in school, which often refers to events that are removed from the immediate context in space and time, is another. In order to operate in the wider world, children will eventually need to learn more reliable linguistic rules for extracting propositional meaning and to combine this meaning with other knowledge in order to arrive at complete understanding. They will need, in other words, to function not only in contextualized listening situations, but also in decontextualized ones. When we assess comprehension in children, we will want to know about the ability to make sense of language in both contextualized and decontextualized situations.

Examining use of comprehension strategies is one way to examine these two levels. We can set up both friendly, contextualized tasks, and more decontextualized situations for probing the same form. When children with language production problems do in fact understand, in both the contextualized and decontextualized format, more words and sentences than they say, less emphasis on exposure to target forms and more focused elicitation of targets can be the focus in the intervention pro-

gram. Some children may perform well in the contextualized setting by employing a comprehension strategy. But, they may fail the same item in the decontextualized test. These children, who are showing good discourse-level comprehension but less accurate literal comprehension, may need additional exposure in intervention to gradually less contextualized settings in which consistent language forms are presented. Children who perform poorly in both contextualized and decontextualized settings, who do not take advantage of social and situational context to take a stab at a speaker's meaning, may have a more severe or pervasive disorder (Paul, 1990). Children like these may require more intensive intervention that addresses both language and, more broadly, cognitive-social issues.

### WHY USE INFORMAL ASSESSMENT?

There are some well-constructed, psychometrically sound tests that are commercially available for assessing language comprehension. Table 1.3 provides a sampling of procedures developed for a range of language levels. When we assess comprehension with formal, standardized tests, we are assessing the first level of comprehension described in this chapter: recognizing the referents for words and the literal meaning of sentences. This level of comprehension is, of course, crucial to understanding language. Therefore, part of the comprehension assessment process will be to determine whether this aspect of listening is causing a child problems. For many children, standardized tests will be the most efficient, effective way to make this determination. So, what is the role of informal comprehension procedures? Let's look at some of the reasons informal assessment of comprehension is an important part of the language evaluation.

#### To Assess Areas Important for a Specific Child

First, standardized tests are designed to answer a specific question: Is this child different from other children? Often, we already know the answer to that question. What we really want to know is whether this child understands a particular word, structure, or discourse function. To answer this question, we will generally need more than one or two instances of performance on the target form or function to make a determination. Nonstandardized procedures provide an opportunity to test a form or function several times, in several contexts, or to use item-level analysis to pinpoint the child's problem area(s) that may require intervention. Standardized tests are designed to sample a small number of structures that are efficient in differentiating children at differing developmental levels. But often we want to know whether a child understands a particular form that is significant for functioning in an important life setting, and that form may not appear on the standardized test. Informal assessment gives us the option of testing any form we believe to be important for a particular child. For example, locatives can be evaluated in detail using Procedures 3.4, 3.5, and 3.6 in this book. Standardized tests only test the early acquired forms, *in*, *on*, and *under*.

#### To Obtain Accurate Assessments of Children Who Are Difficult to Test

Second, children with other sensory, motor, or behavior disorders may be unable to respond to tests that must be administered in a single prescribed way. Children with severe motor disorders such as cerebral palsy may be unable to point to pictures or engage in other responses neces-

Table 1.3. A sample of standardized tests of comprehension

Test name	Age range	Areas tested
Assessing Semantic Skills Through Everyday Themes (Barrett, Zachman, & Huisingh, 1988)	3–9 years	Receptive and expressive vocabulary in understanding labels; identifying categories, attributes, functions, and definitions; and expressing labels, attributes, functions, and definitions
Boehm Test of Basic Concepts–Preschool (Boehm, 1971)	3–6 years	Basic relational concepts (e.g., space, location, quantity, time, orientation, vocabulary) related to school success
Bracken Basic Concept Scale (BBCS) (Bracken, 1984)	3–7 years	Colors, numbers, letters, shapes, sizes, position, quantity, and social and temporal concepts
Clinical Evaluation of Language Fundamentals–Revised (CELF–R) (Wiig, Second, & Semel, 1992)	5–16 years	Phonology, syntax, semantics, memory, word finding, and word retrieval
Detroit Test of Learning Aptitude–Primary 2 (DTLA–P) (Hammill & Bryant, 1991)	3–9 years	Articulation, conceptual matching, design reproduction, digit sequences, draw-a-person, letter sequences, motor directions, object sequences, oral directions, picture fragments, picture identification, sentence imitation, and symbolic relations
Language Processing Test (LPT) (Richard & Hanner, 1985)	5.11 years	Language processing tasks; associations, categorization, similarities, differences, multiple meanings, attributes, word retrieval difficulties, word substitutions, inability to correct errors, response avoidance, rehearsing responses, and unusual pauses
Lexington Developmental Scale (LDS) and Lexington Developmental Scale Screening Instrument (LDSSI) (Irwin et al., 1973a, b)	Primary grades	Receptive grammar and morphology
MacArthur Communication Development Inventory (Fenson et al., 1993)	8 months–3 years	Parent report of receptive vocabulary and general receptive language
Northwestern Syntax Screening Test (NSST) (Lee, 1971)	3.0–8 years	Receptive syntax
Peabody Picture Vocabulary Test–Revised (PPVT–R) (Dunn & Dunn, 1981)	1.9 years–Adult	Vocabulary
Porch Index of Communicative Ability in Children (PICA–Children) (Porch, 1974)	Birth–6 years	Receptive vocabulary
Preschool Language Scale–3 (PLS–3) (Zimmerman, Steiner, & Pond, 1992)	Birth–7 years	Auditory comprehension
Receptive-Expressive Emergent Language (REEL) Scale (Bzoch & League, 1971)	Birth–3 years	Language skills in infancy, parent report of skills
Receptive One-Word Picture Vocabulary Test (ROWPVT) (Gardner, 1985)	2–12 years	Vocabulary
Reynell Developmental Language Scales (Reynell, 1985)	1–5 years	General receptive skills
Rhode Island Test of Language Structure (RITLS) (Engen & Engen, 1983)	3–20 years with hearing impairment; 3–6 years	Understanding of language structure and receptive syntax

(continued)

Table 1.3. (continued)

Test name	Age range	Areas tested
Sequenced Inventory of Communication Development (SICD) (Hedrick, Prather, & Tobin, 1975)	4 months–4 years	Awareness, discrimination, understanding, expressive behaviors, imitating, initiating, responding, and verbal output
Test of Auditory Comprehension for Language–Revised (TACL–R) (Carrow-Woolfolk, 1985)	3–9.11 years	Vocabulary, morphology, and syntax
Test of Early Language Development (TELD–2) (Hresko, Reid, & Hammill, 1991)	4.0–8.11 years	Receptive/expressive semantics and syntax
Test of Language Development–2 Primary (TOLD–2) (Newcomer & Hammill, 1988)	4–9 years	Vocabulary and syntax
Test of Language Development–Intermediate (TOLD–I) (Newcomer & Hammill, 1988)	8.6–13 years	Vocabulary and syntax
Test of Preschool Language Proficiency (Graham, 1974)	3–8 years	Receptive semantics
Test for the Reception of Grammar (TROG) (Bishop, 1982)	4–12.11 years	Vocabulary and syntax
Test of Relational Concepts (Edmonston & Thane, 1993)	3.0–7.11 years	Dimensional adjectives; spatial, temporal, and quantitative words
Token Test for Children (DiSimoni, 1978)	3–12 years	Receptive syntax
Vocabulary Comprehension Scale (VCS) (Bangs, 1976)	2.6–5 years	Pronouns, quantity, quality, position, direction, size, time, possessives, category words, negation, and functions
Woodcock Language Proficiency Battery–Revised (Woodcock, 1991)	3–80 years	Picture vocabulary, antonyms, synonyms, analogies, letter–word identification, word attack, passage comprehension, dictation, proofing, punctuation, capitalization, spelling, and usage

sary for formal testing. Children with other physical disorders, such as deafness, blindness, paralysis, or multiple disabilities, may also have problems perceiving stimuli or delivering required responses. Children with emotional or behavior problems may be unable or unwilling to cooperate with standard testing procedures. For hard-to-test children with a variety of disabilities, informal procedures become necessary. These procedures that allow flexibility in method of presentation and response are necessary to get a realistic picture of language comprehension, which is, in turn, necessary in order to compare performance in the two language modalities in order to make intervention decisions.

#### To Assess Comprehension of Children in the Early Stages of Language Development

Third, for children at the emerging language level and in the early part of the developing language stage, few standardized measures exist. Available tests may be inappropriate for youngsters unable to respond to the formality of their procedures. There are not many comprehension tests that have been standardized to assess understanding of grammatical structures in children with language levels in the birth-to-3 period, for example. In addition, children at this level may have very limited vocabularies. They may know some words, but not the words used on the test. They may also be inconsistent in responses and may have difficulty with abstractions such as 2-dimensional pictures. They have fleeting attentional capacities, so that a clinician would need to be able to assess performance by focusing on what attracts the child's attention

from moment to moment. Few children at this level can attend consistently to tasks of little inherent interest to them. At these early stages, it is often necessary to use informal procedures to get an idea of the kinds of basic words and sentences the child can understand.

#### To Examine Discourse-Level Comprehension

Finally, few standardized tests give us a look at that other level of comprehension: the discourse level. Because we know these skills are an equally important piece of the comprehension puzzle, we will want to have some way of assessing them and comparing them with literal comprehension skills. Although there are some standardized tests that look at pragmatic skills, most focus on production. Few allow specific comparisons between literal- and discourse-level skills. Then, too, standardized tests are, by nature, decontextualized. If a child "fails" a standardized test of comprehension, we don't know whether the child might do better on similar forms by applying some strategies in a more friendly, contextualized setting. As mentioned previously, it will be important in planning an intervention program to know whether a contextualized setting helps. If so, such settings can be used as a starting point and gradually faded. If not, some more intensive, broadly based intervention approaches may be necessary.

#### WHY NOT RELY ON PARENT REPORTS?

But what about parent reports? If we need to know about a child's comprehension, and the child is difficult to test, can't we just ask the parents?

Several parent report measures have been available to clinicians for some time (e.g., *Receptive-Expressive Emergent Language Scale [REEL Scale]* [Bzoch & League, 1971], *Vineland Adaptive Behavior Scales [VABS]* [Sparrow, Balla, & Cicchetti, 1984]). The reliability of measures such as the REEL Scale has been suspect because they depend on parents' retrospective memory of their child's development to complete the scale (e.g., "When did your child say his [or her] first words?" or "When did he [or she] first say two-word sentences?"). A more recent procedure, the *MacArthur Communicative Development Inventories (CDI)* (Fenson et al., 1993) have been designed to overcome this problem by asking parents to report on what their child is doing at the moment, and by providing example vocabulary to check off or example sentences. There are two forms, an infant scale for children 8–16 months of age that contains the comprehension scale, and a second form for toddlers from 16 to 30 months. Despite the high reliability of the CDI, it is important to point out that parent reports of comprehension are more problematic than reports of production, primarily because the child's use of comprehension strategies can fool parents about what the child is understanding.

#### CHARACTERISTICS OF GOOD INFORMAL ASSESSMENTS

Comprehension procedures will have to be direct, but informal, in presentation. They will need to be flexible in the vocabulary they employ, so that the words the particular child knows can be used. They will need to allow flexibility in order of presentation of items and to allow multiple presentations and repetitions to take developmentally young children's limited attentional capacity into account. They must make it possible to present stimuli in a variety of ways (e.g., using either objects or pictures) and must allow for a variety of response options. Also, they will need to

look at a variety of levels of comprehension abilities. Standardized tests are an excellent method of assessing some aspects of literal, decontextualized comprehension at some developmental levels in children who have the motor and attentional skills to respond to them. Informal methods are often needed, though, to assess additional areas of understanding at additional levels of development and for children who lack the ability to respond to formal tests. Provision of these informal methods is the purpose of this book.

## THE PROCEDURES IN THIS BOOK

Most of the procedures presented in this volume have a formal structure: Suggestions and instructions for presentation are given, prescribed linguistic and nonlinguistic stimuli are presented, and a specified order of presentation is recommended. Because they are nonstandardized, the procedures do not meet statistical criteria for standardization in terms of norming population sample size and measure of reliability or validity. However, they do allow the flexibility needed to assess comprehension in some children. They do not have to be administered in exactly the form in which they are presented.

## Individualization of Procedures

Any procedure in this book can be adapted in any way to meet the needs of an individual child. A variety of modes of presentation (e.g., objects or pictures) can be used. Items can be repeated with intonational changes as required to promote attention, engagement, and responses in individual children. Order of presentation can be changed, except where there is a logical sequence (e.g., Procedure 2.3 must be administered before Procedure 2.4). Timing and modality of response can be adjusted to individual needs. Vocabulary can be selected to maximize chances for success. These procedures are meant to provide a starting point for clinicians, not an end in themselves. Judgment and creativity are encouraged in adapting and modifying the procedures to suit each child's abilities, needs, and interests, and the requirements of the testing context. Such individualization of procedures will require advanced preparation. Planning should include a number of considerations.

Your work setting will be one of the most important issues in planning the administration of procedures for individual children. If you are in a clinic, the populations served may be very diverse and require preparation across developmental levels. At the very least, you will need to become familiar with the full range of procedures found in this volume. Clinics that provide tertiary services may see children only every 6 months or once a year, which has the benefit of allowing comparison to past performance data for both comprehension and production. School settings have a number of advantages, including knowledge of the children through the school year and the opportunity to observe them in classroom contexts. In either setting, take the following steps to optimize your planning. Also note that each of these areas changes as development advances so you will want to take these five steps for the individual child in each developmental level.

1. Review the child's academic record, grade level, referral, or placement in special education programs including speech and language. This will help you determine the child's general cognitive level



- when testing data are not available. With these data and the child's chronological age, developmental level can be determined.
2. Identify the child's interests and needs so vocabulary can be identified to optimize performance. This is particularly important in the emerging language stage.
  3. Review the child's daily routines with parents, caregivers, and teachers so appropriate content, including vocabulary and discourse contexts, can be selected for use in the procedures.
  4. Collect language production data. This may be done directly through a language sample or observation in the waiting room or classroom, or indirectly by interviewing parents and teachers or obtaining a parent report for young children. These data are critical for identifying the initial content of your assessment of comprehension.
  5. Review perceptual and motor performance from the child's chart, school records, or direct testing. Knowing the child's hearing and visual acuity levels will help you adapt materials. Also, review visual scanning, and figure ground perception before using picture-based procedures. Motor skills necessary to perform the selected procedures must be established prior to testing. These data will show you which response options are available for each child.

Using these procedures as a guide to informal comprehension assessment will, we hope, lead to a general expansion of the options for comprehension assessment to address the great variety of needs of children with a range of disabilities.

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### General Preparation for Assessment

In addition to taking steps to individualize the procedures for specific children, some general preparation is necessary. Before testing you will need to identify the response mode(s) available to the child, and the initial content based on the child's production (see the discussion on individualization of procedures and Chapter 5 for examples). Once the child-specific portion of preparation, including identifying the child's developmental level, response capabilities, and language to be assessed, has been completed, then specific procedures must be selected (e.g., picture formats, object formats).

Materials for each procedure must be pulled together, which will take some time. We recommend using a cardboard box for each type of procedure (e.g., locatives in Procedures 3.4 and 3.5) so that all materials needed for this procedure and its adaptations are in one place. The same suggestion applies to the picture-pointing procedures. If you keep all of your pictures and related adaptations together, you will find they can be used over and over again.

After the stimulus materials have been gathered, then it is time to consider how to record responses. Most of the procedures simply require paper-and-pencil notations (e.g., stimuli presented, child responses, marks on score sheet for correct or incorrect). For many of the procedures in this book, sample score sheets are provided. You may wish to use these or to create variations of them. It will add considerably to your information about the child if you record exactly what the child did or

said, rather than just noting that the response was correct or incorrect. Patterns of incorrect responses can indicate how the child is approaching the task. Procedure 3.7, for example, includes foils, which are organized to determine if the child is using word order to solve the problem, responding as if the sentence were reversed, or considering the sentence as a list of independent or random words.

Object manipulation procedures offer the best opportunity to observe exactly how the child understands the stimulus sentences, but we must be ready to record the child's responses exactly as they occur. Some of these procedures, such as Procedure 3.2, suggest videotaping where possible. Videotaping can be very useful in maintaining child response data and freeing the examiner to focus only on administering the stimulus items. The disadvantage of videotape is that you must review it to score the data, so you double your time commitment. In addition, placement of the camera is critical to recording all of the child's behavior. We have experimented with videorecording sessions by placing the camera to focus on the table to be used for testing, making sure the whole surface is visible through the lens. When the child arrives, the camera is turned on (because no camera operator is available), and the child generally performs the object manipulation task by raising the items above the table and out of camera range at least half of the time. Obviously, in these experiments the videotape was not very useful and we had to score the items by hand anyway. If the child is amenable, videotaping can be helpful in preserving performance. However, we recommend that you do not use videotaping to put off on-line scoring. Our experience suggests that on-line scoring is best whenever possible.

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## PRINCIPLES OF INFORMAL COMPREHENSION ASSESSMENT

Both for the procedures presented in this book and for any informal comprehension assessments you may develop independently, there are some general principles that can serve as a guide. These guiding principles are outlined briefly here.

We see the clinical assessment of comprehension as a three-tiered process:

1. *Literal comprehension:* The first task is to evaluate the child's ability to decode the intended literal meaning of words and sentences. This stage of lexical/syntactic assessment is referred to as the literal portion of the comprehension assessment. That is, we will look at both the understanding of words (i.e., lexical) and sentences (i.e., syntactic) as part of our assessment of the literal level. Some procedures will focus specifically on whether or not children understand particular words (i.e., lexical comprehension). When we know whether the individual words are understood, we can combine them into sentences to assess syntactic comprehension (i.e., the ability to derive meaning from the grammatical combination of words). In assessing literal comprehension, every attempt is made to remove all extralinguistic cues, creating a decontextualized listening situation for the child. In this way, a valid statement about the child's understanding of words and sentences themselves, without contextual cues, can be made.

2. *Use of comprehension strategies:* The second phase of comprehension assessment looks at the ways in which the child does use the context in responding to words and sentences beyond his or her linguistic level. To do this, the child's use of strategies, or consistent response biases, is assessed by presenting sentence types that are known, based on the assessment of literal comprehension ability, to go beyond the limit of a child's lexical/syntactic knowledge. Then consistent response preferences are examined. Comparing these strategies to those seen in typically developing children provides a second level of information about the ways in which the child deals with linguistic input.
3. *Discourse features:* The third level of assessment specifically examines the child's ability to deal with the discourse parameters of the language he or she receives.

Using this three-tiered system will, we believe, allow us to get a well-rounded picture of the child's ability to make sense of the language he or she receives. At the same time, it provides the opportunity to define relatively precisely the level at which the child's understanding breaks down—word, sentence, or discourse—so that intervention can be focused appropriately.

How can we assess this complex process, which is not purely linguistic but cognitive and social as well? As in any scientific investigation, it will be necessary, in studying children's language comprehension, to reduce the number of variables that we examine at any given time. Although a division into three tiers is somewhat artificial, it is probably accurate to say that in order to extract meaning from a sentence, at least in a decontextualized situation, it is necessary to understand the meaning of the words in it. Similarly, in order to understand a speaker's intention or draw inferences from a sentence, again in a decontextualized situation, it is necessary to be able to use the syntactic information in the sentence to assign semantic roles such as agent, action, and object of action, and to derive a literal meaning. By examining each of the three phases of comprehension and comparing contextualized and decontextualized performance, it will be possible to get a precise picture of when and how comprehension failures occur and to learn about the strategies the child uses when the linguistic input is too much to handle. Information about all of these aspects of the child's receptive skill can then be compared to the information gathered on his or her language production. With this complete picture of the child's communication, the most appropriate intervention program can be targeted to meet the child's individual needs. For children whose comprehension skills are better than their production skills, production will be the major target of intervention, using their strengths in comprehension as an advantage. Where comprehension and production skills of a specific form or meaning area are problematic, the usual strategy is to combine comprehension and production training. This follows the principle put forward by Lahey (1988) that comprehension training does not necessarily generalize to productive use. If children need work in both modalities, then both need to be targeted in the intervention program.

We can invoke some basic rules while doing informal comprehension assessment across a variety of developmental levels.

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**Avoid  
Overinterpretation**

When we use informal procedures to assess comprehension, it is important to remember that we are always inferring something about a private event, and are not observing comprehension directly. This means we must be very careful not to overinterpret what we observe, particularly in contextualized situations. If a child responds appropriately to an instruction such as, "Put the spoon in the cup," we need to remember that there is a bias toward putting things in containers like cups. To know whether the child really comprehends the preposition *in*, we will need to ask the child to put the spoon *in*, for example, a shoe, or something that would be less conventionally expected.

**Control  
Linguistic Stimuli**

When looking at a child's understanding of language, we need to know exactly what we are testing. If we want to look at comprehension of early developing spatial terms, such as the prepositions *in*, *on*, and *under*, it is important to be certain that any other vocabulary items used in the utterance are well known to the child. We would not ask a 3-year-old to "Put the spoon in the left-hand drawer," for example. When testing vocabulary comprehension, we need to have established that all of the other words in the utterance, besides the one being assessed, are familiar. This can be accomplished either by pretesting, or by carefully interviewing the parents about words the child knows.

In the same vein, we need to control the length of sentences used in criterion-referenced comprehension assessment. If we know a child uses only three to four words in his or her own sentences, we should limit the sentence used in the assessment to that length. Furthermore, we need to be careful to test all structures in sentences of equal length. We should not conclude, for example, that a child has difficulty understanding passive sentences if we give him or her "The car was knocked over by the blocks" and "The block pushes the car." The passive sentence is not only more complex but also longer than the active sentence. If the child does not demonstrate comprehension of the passive sentence, we don't know whether length or complexity is the problem. Similarly, if we are testing a structure, we need to be sure that the sentence containing it is as simple as possible, except for the structure being tested. If we were assessing comprehension of possessive markers, for example, we would want to ask the child to "Show me dolly's (or Mommy's) nose," rather than "Show me the car's (or truck's) back wheel." The main point is that when devising informal comprehension assessments, the linguistic stimuli must be thought about very carefully to make sure that we are assessing what we mean to assess.

**Specify an  
Appropriate Response**

When developing informal comprehension assessments, the response is as important as the stimulus. As stated previously, we are always inferring comprehension rather than observing it directly, so what we observe must be considered carefully. Informal comprehension assessments can employ either *naturalistic* or *contrived* responses, but in either case, it is important to specify what response will count as a success so that what we are looking for in the assessment is clear.

Naturalistic responses include *behavioral compliance* and *answers to questions*. Behavioral compliance is an appropriate response to observe in children with developmental levels as young as 12 months. It can

include touching, moving, picking up, pointing to, or giving objects, and can be focused on the assessment of single words ("Give me the *shoe*"; "Put it *under* the cup"), morphemes ("This is *Mommy's* cookie"), sentence types ("I *don't* want the spoon"), or speech act intentions ("Can you *open* the box?"). Specifying a naturalistic response does not have to mean that the assessment involves contextualized language. Both contextualized and decontextualized comprehension can be tested in this format. In fact, it is quite important to distinguish between these two conditions when using a naturalistic response. Remember that a very young child can comply with a request stated as a long, complex sentence such as, "Why don't you open this nice box for me?" (Shatz & Gelman, 1973). However, that compliance does not necessarily mean that the child comprehends every aspect of the form. Instead, the child might only recognize the words *open* and *box* and comply because he or she expects adults to ask children to do things. So, unless contextualized and decontextualized variants of a form are contrasted, it will be hard to know whether a child complies with the linguistic stimulus itself, or with what is normally expected in an interactive situation.

Answers to questions are another naturalistic response that can be employed. Usually children will not be reliable in answering questions until after a developmental level of 24 months. Answers to questions can be scored for either semantic or syntactic accuracy. Syntactic accuracy simply involves an answer in the appropriate category. If you ask a child what color an apple is and he says "Blue," this answer is syntactically appropriate, but semantically incorrect. Semantic accuracy involves an answer that would be considered meaningfully accurate by adult standards. Often children can respond with syntactic accuracy before they are entirely semantically correct. Questions, too, can be presented in contextualized conditions, with picture referents or about familiar daily activities. Alternatively, questions can be asked in more decontextualized forms, about events removed from the immediate situation, or about objects and concepts about which the child has only minimal direct experience.

Contrived responses resemble those used in standardized testing. The most common contrived response for a comprehension assessment is *picture pointing*. Children with developmental levels of 24 months or older can generally respond successfully to picture-pointing tasks. Single-word comprehension ("Point to the *shoe*"), understanding of sentences ("Point to 'There are many shoes'"), or inferential comprehension ("Which picture shows what happened next in the story?") can easily be assessed with this format. *Object manipulation* is another contrived response, in which children are asked to do something to a set of objects the clinician presents. A developmental level of approximately 20 months is generally required for a response in this format. Object manipulation procedures can be used to assess understanding of sentences ("Show me, 'The boy is pushed by the girl'"). They can also be used to assess understanding of connected discourse and inferencing ability by asking children to act out what happened in a story or what will happen next.

An additional contrived response that can be used in the criterion-referenced assessment is a *best-fit*, or *judgment*, response. These types of

responses involve some metalinguistic abilities in that they require the child to evaluate language, rather than merely use it. As such, they are not appropriate for children younger than 5 years of age. However, for school-age children, judgment responses can be very effective and are easier to construct than picture-pointing or object manipulation tasks. Rather than needing a picture or set of objects to represent each aspect of the stimulus, judgment tasks can involve only two pictures, which the child uses to represent as "right" or "wrong," "OK" or "silly," or some other dichotomy. For example, to assess understanding of passive sentences, the child might be given a picture of an "OK," ordinary-looking lady and a "silly" or clown-like lady. The child can be told to point to the picture of the lady who would say each sentence. After several demonstrations of what each lady might say, (e.g., OK lady: "An apple is eaten by a boy"; Silly lady: "A boy is eaten by an apple"), the child can be asked to judge subsequent sentences. A similar procedure could be used to assess understanding of the connected discourse ("Is it an OK story or a silly story?"), inferencing ("And then he ate the cake. Is that an OK ending or a silly ending?"), speech act intention ("I asked, 'Can you pass the salt?' and he said, 'Yes.' Is that an OK answer or a silly answer?"), speech style variation ("He said to the teacher, 'Give me a pencil.' Is that an OK way to ask?"), and so forth. Table 1.4 provides information on relations between these types of responses and MLU.

#### Elicit Multiple Responses

Whatever types of responses we elicit, we will need to elicit an adequate number of them. Standardized tests usually have only one or two items to test each structure. It can be hard to tell, then, whether the child's performance is due to chance, particularly in a picture-pointing format where even if the child is pointing randomly, there is a chance of being right. Informal procedures can include more instances for each form being tested.

**A good rule of thumb is to include at least four examples for each form, and to require the child to get three of the four right in order to succeed on that particular form.**

Another technique is to use contrasting sentence pairs (e.g., "A boy eats a fish" and "A fish eats a boy") and require that the child perform correctly on both elements in the pair. Both of these approaches can minimize the effects of random guessing.

#### CONCLUSION

Informal procedures such as those described in this book can be fun for both the child and clinician. Because they are flexible and can be adapted to specific interests and abilities, children do not often have a sense of failure on difficult items. If, for example, they use a "child-as-agent" strategy to act out a test item such as, "Make the horse kiss the truck," they don't know that they did not "pass" the item. From their point of view, they are merely participating in a somewhat silly game that allows them to move about instead of sit still, to play with interesting toys instead of looking at pictures, and to interact with a friendly adult instead of obeying an intimidating examiner. In this atmosphere, we have the best chance of observing children's usual responses to lan-

Table 1.4. A summary of the developmental sequence for each of the four performances, with respect to MLU

MLU	Stage	Production	Comprehension	Judgment	Correction
1.1–1.5	Early Stage I	Correct use of word order in active sentences with semantic constraints	Random performance on acting out reversible active sentence; good comprehension if strong semantic constraints		
1.5–2.0	Late Stage I	Many more three-term (agent-action-object) sentences produced; reversible actives rarely produced	Good comprehension of reversible actives (i.e., use of word-order information alone)		
2.0–2.5	Stage II			Unable to judge reversed word order as "wrong"	
2.5–3.0	Stage III				
3.0–3.5	Early Stage IV		Systematic reversal of reversible passives (i.e., overgeneralization of active word order)	Can judge semantic anomaly but not reversed word order as "wrong"	No corrections
3.5–4.0	Late Stage IV– Early Stage V			Accurate judgments of both semantic anomaly and reversed word order	Corrections of semantic anomaly only; semantic corrections for "wrong" word order sentences
4.0–4.5	Late Stage V		Correct comprehension of reversible passives		Direct word order corrections

Sources: Chapman (1978); Chapman & Miller (1975); de Villiers & de Villiers (1973); Fenson et al. (1993); Owens (1992).

guage, their best responses under controlled conditions, and their least ambiguous reactions to speech. An atmosphere like this will give us the most ideal opportunity to gather data about a child's linguistic knowledge exhibited through auditory comprehension.