

Early syntactic development: Simple clause types and grammatical morphology

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A DECADE has elapsed since the publication of Bates' (1976) seminal book, *Language in Context*, and more than 15 years since Hymes (1971) broadened the notion of linguistic competence to include competence for language use or communicative competence. *Linguistic competence* reflects the ideal speaker-listener's tacit knowledge of the rules that determine grammaticality in sentences. *Communicative competence*, in contrast, reflects the knowledge that speakers and listeners have about who can say what, in what way, where and when, by what means and to whom (Hymes, 1971). These aspects of language are, of course, part of pragmatics, which can be defined as the rules governing the use of language in context (Bates, 1976).

The pragmatics revolution sparked by Hymes and Bates has had a significant impact on language assessment and teach-

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ing. Beginning in the mid-1960s and continuing until the mid-to-late 1970s, language assessment and teaching focused primarily on structural (syntactic-semantic) aspects of sentences. By the late 1970s, however, language teaching began to target communicative intentions, topic maintenance, turn taking, and other conversational (discourse) phenomena (Gallager & Prutting, 1983; Hart & Rogers-Warren, 1978; MacDonald, 1985). Unfortunately, the proliferation of pragmatic or communication-based approaches to language teaching has caused some clinicians to neglect the structural aspects of language that were once the focus of language therapy.

The functionalist view of language seems to provide some theoretical justification for deemphasizing structural aspects of language. Functionalists, such as Bates and MacWhinney (1982, 1987) claim that the forms (i.e., syntax, morphology, and phonology) of natural languages are created, governed, constrained, acquired, and used in the service of communicative functions. They further state that children learn language structures as solutions to problems presented by their need to communicate. A language impairment within this functionalist framework could be described as having difficulty learning appropriate grammatical forms to serve various communicative functions. It is important to note that Bates and MacWhinney are not anti-syntax. Their research has attempted to delineate the various interrelationships and interdependencies that exist between language form and function. Thus, even if one adheres to a functionalist view of language, and the authors do not, structural aspects of lan-

guage performance should not be overlooked.

The focus of this article is on syntactic deficiencies involving simple clause structures and grammatical morphology. A framework for understanding the development of simple clause structures is presented followed by a discussion of the correlates of early syntactic development. Selected literature on language-impaired children's syntactic abilities is then reviewed. In the final part of the article, procedures to assess and remediate syntactic deficiencies are presented.

EARLY SYNTACTIC DEVELOPMENT

Considerable research over the last 25 years has dealt with syntactic development in young children. Although controversies still exist about the nature of the syntactic categories children learn and how they learn syntax, there is general agreement about the course of development and the syntactic patterns children demonstrate. Syntactic development is usually described in terms of stages delimited by mean length of utterance (MLU) values. Although the insensitivity of MLU to developmental changes has been well documented (e.g., Johnston & Kamhi, 1984; Klee & Fitzgerald, 1985), MLU values provide a rough guideline for development. Brown's (1973) stages, with their corresponding MLU values, are as follows:

- Stage I: Semantic roles and syntactic relations, MLU 1.0–2.0
- Stage II: Grammatical morphemes, MLU 2.0–2.5

- Stage III: Modalities of simple sentences, MLU 2.5-3.25
- Stage IV: Embedding, MLU 3.25-3.75
- Stage V: Coordination, MLU 3.75-4.0⁺

Clause types

The clause is often referred to as the basic grammatical structure in language (e.g., Crystal, Fletcher, & Garman, 1976). The pivot point of a clause is the verb; all clauses, simple and complex, contain verbs. Clauses can function as declaratives, imperatives, questions, or negatives. Declaratives with simple clause structures are of primary interest here; Scott (this issue) discusses the development of the various kinds of multiple clauses (i.e., compound clauses, subordinate clauses, relative clauses). The following utterances are examples of clauses:

- I'm typing.
- This pizza is great.
- The tall, slender, spotted giraffe has a pointy head.
- She was reading Proust in the Jardin Luxembourg.
- Franny had been waiting for Godot for a real long time.

Three different simple clause types have been identified (Dever, 1978):

1. Intransitive clauses do not require objects (NP + VP), as in *Beth sleeps*, *Alison laughed*, *The flowers drooped*.
2. Transitive clauses require objects (NP + VP + NP), as in *The platypus ate colorless green ideas*, *Penelope finished her exam*, *Barbara is buying a house*.

3. Equative clauses include copula verbs (NP + Copula + Complement), as in *I feel sad*, *Summers are hot*, *He looks tan*.

Simple transitive and equative clauses first begin to appear when children produce about equal numbers of one- and two-word utterances, or an MLU of 1.5 (Brown, 1973). In these early clauses, the verbs are usually unmarked and the copulas are often omitted. In the second stage, verbs begin to be marked, the copula appears, and the child begins to produce some transitive clauses. Clauses gradually become more complex in subsequent stages of development through the expansion of noun and verb phrases and the addition of adverbials. These developments are discussed next.

Noun phrases

Five components have been identified in the English noun phrase (Crystal, Fletcher, & Garman, 1976; Hubbell, in press): initiator, determiner, adjectival, head, and postmodifier. The central noun, referred to as the head, is the only obligatory component of the noun phrase. All modifiers are described in relation to the head. Adjectivals modify the noun head. Crystal, Fletcher, and Garman (1976) identified five types of adjectivals: adjectives, quantifiers, ordinals, noun (e.g., *tennis* in *tennis racket*, *library* in *library book*), and nouns marked for possession (e.g., *Marian's* in *Marian's tennis racket*).

Determiners are function words that identify or specify a noun in some way. Determiners include the following words: *the, a, an, any, each, every, some, no;*

demonstrative pronouns such as *this, that, these, and those*; and possessive pronouns, such as *my, your, his, her, its*, and so on.

An initiator, the first element in the NP, may have several different functions. It may limit the noun in some way (e.g., *just, only, even, at least*), express quantity relations (e.g., *one-third, both, all*), or function as intensifiers (e.g., *quite, such*).

The last component of the NP, the postmodifier, provides additional information about the head. It can occur as an individual word (e.g., the cup *there*), as a phrase (e.g., the man *in the moon*), or as a whole clause (e.g. the man *who wore red plaid shoes*).

Postmodifiers that occur as whole clauses are usually referred to as relative clauses.

The developmental sequence for the NP is roughly as follows (Crystal, Fletcher, & Garman, 1976; Miller, 1981): Noun heads appear in the one-word stage of development. In the two-word stage, adjectivals and determiners appear. Initiators and postmodifiers are the last parts of the NP to develop. Clausal postmodifiers do not appear until Brown's (1973) late Stage IV or early Stage V (MLU 3. 25–4.0⁺).

Verb phrases

Like the noun phrase, the verb phrase has a head, or main verb, and four optional functions (Dever, 1978; Hubbell, in press): modal, perfect, continuum, passive, and head. The four optional categories are often referred to as auxiliaries or auxiliary verbs. Verb phrases also include tense markers (e.g., *-ed, -s*), which are inflections to the head or to an auxiliary.

Tense markers are discussed in the section on grammatical morphemes.

The English modals are *may, might, can, could, will, would, shall, should, and must*. Some taxonomists (e.g., Lund & Duchan, 1988) include semiauxiliaries or catenatives (e.g., *gotta, wanna, hafta, gonna*) in the modal category because they serve the same function as "true" modals. Modals function to express an attitude or mood of the speaker (Lund & Duchan, 1988; Lyons, 1968). The earliest moods expressed by children, wish and intention, are expressed with *wanna* and *gonna*. Children later express future intention with *will*. The second mood, certainty or possibility, is first expressed with *can't*, and later with *can, may, might, could*, and *would*. The final mood to be expressed is necessity or obligation. Early forms used are *gotta* and *hafta*. Later forms are *must*, and *should* (see Lund & Duchan, 1988).

The next component, the perfect, consists of the auxiliary verb *have* plus the past participle, generally represented by *-en*. The temporal distinctiveness of the English perfect is its indication for present tense of a period of time that stretches backward to an earlier time (Fletcher, 1979; Quirk, Greenbaum, Leech, & Svartvik, 1972). Clear-cut examples are those in which the activity of the verb begins sometime in the past and continues up to the present, such as *I've waited for an hour, He's loved her for years*. The perfect can also be used when the activity does not extend over the whole period (e.g., *I've called the piano tuner, Alison has gone to the movies*). Fletcher (1979) notes that in these cases the use of the perfect evokes the "current relevance" of

the past event, thus: *I've broken my arm* (and not *I broke my arm*); *that's why I can't play ball now*.

The next component is the continuum or progressive form that expresses continuing or durative actions. The progressive uses the auxiliary *be* and *V + ing* (e.g., *He's running*, *They were jogging*). Complex verb phrases can be created by combining perfective and progressive forms (e.g., *She has been going to school for 12 years now*).

Finally, the passive consists of the auxiliary *be* plus the past participle (*be + en*). Some examples of passive constructions are: *It was broken*, *She was picked*, *They were being swamped*, *Ken should be*

chosen. The earliest verb forms to be expressed are uninflected (e.g., *want*, *go*, *see*). In Brown's (1973) Stage II (MLU 2.0–2.5), children begin to produce progressive forms and early modals (e.g., *I'm running*, *I wanna go*, *I'm gonna do this*). Perfective and passive constructions do not appear until around Stage IV (MLU 3.25–3.75). Table 1, based on work by Wells (1985), Miller (1981), and Fletcher (1979), presents additional developmental information.

Adverbials

Adverbials that modify entire clauses (Crystal, Fletcher, & Garman, 1976; Hub-

Table 1. Sequence of emergence of elaborated noun and verb phrases

Brown's (1973) stages	MLU (age)	Noun-phrase elaboration	Verb-phrase elaboration
Early stage I	1.00–1.49 (15–21 months)	N Personal PrN Demonstrative PrN	
Late stage I	1.50–1.99 (21–27 months)	Mod. + N (in isolated NPs) Mod. → Art./Adj. Nplural	-ing
Stage II	2.00–2.49 (27–30 months)	Mod. + N (in object NPs) Mod. → Art./Adj. Dem./Poss.	IRREG past be COP
Stage III	2.50–2.99 (30–36 months)	Art. + (Mod.) + N Mod. + N (in subject NPs) Poss. + Nplural Ns + N	REG past -s third person be AUX MODAL present (can/may/will)
Early stage IV	3.00–3.49 (36–45 months)	Art. + Nplural N + PrepPh Art./Dem./Poss. + (Mod.) + N	do AUX MODAL past (could/might/ would/should)

Note: Information about mean length of utterance and the order of emergence of noun-phrase elaborations is from the Bristol Language Development Study (Wells, 1985). Information about verb-phrase elaborations is from Miller (1981) and Fletcher (1979).

bell, in press), are concerned with where, how, when, and why something happened. It is important to note that not all adverbials are adverbs; and an adverbial may be a phrase or an entire clause. All of the following sentences contain adverbials:

- I played tennis *yesterday*.
- He ran *quickly*.
- Jessica played with her bottle *on the kitchen floor*.
- She went home *after her friend gave her the present*.

Simple adverbial phrases begin to appear in Stage 1 (MLU 1.0–2.0) in the form of locative relations. Adverbial clauses do not appear before Stage IV (MLU 3.25–3.75) (Crystal, Fletcher, & Garman, 1976).

Grammatical morphology

Grammatical morphemes are often divided into two categories; inflectional endings and function words or bound and free morphemes. There are two noun inflections (plural and possessive), three verb inflections (third-person singular, progressive, and past), and two adverb/adjective inflections (comparative and superlative). Function words include pronouns, articles, conjunctions, prepositions, and auxiliary verbs.

Developmental summary

The language chart presented in the Appendix attempts to synthesize syntactic development. The chart is an updated version of an unpublished language chart originally developed by Johnston and Ammon in the mid-1970s. Revisions of the original language chart have incorporated recent developmental data, in particular those from Miller (1981). The chart is

divided into three major areas: lexicon, grammatical morphemes, and semantic relations/phrase structure rules. The lexicon and phrase structure rules are not meant to be exhaustive. The lexicon consists of words, such as pronouns, conjunctions, and prepositions, that play important syntactic roles in phrases and clauses. The phrase structure rules are general and are meant to provide an indication of the child's developing ability to produce declaratives, negatives, questions, and complex sentences.

CORRELATES OF EARLY SYNTACTIC DEVELOPMENT

Recent conceptualizations of language performance have emphasized the inter-relatedness of linguistic components and the relationship of these components to perceptual skills, conceptual knowledge, and social-emotional factors (Bates & MacWhinney, 1982; Bock, 1982; Prutting & Elliot, 1979; Rice & Kemper, 1984; Snyder, 1984). Highlighted below is the way children's syntactic choices are influenced by pragmatic, semantic, and conceptual factors.

Pragmatic correlates

Prutting and Kirchner (1987), in a recent article argue that "pragmatics must

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account for two divergent aspects of communicative competence: those aligned with structure and those that operate apart from the structural properties of utterances" (p. 105). Pragmatic aspects aligned with structure include cohesion, ellipsis, anaphora, speech registers, indirect speech acts, requests for clarification, topic-comment relations, the informativeness or newness of information, and so forth. For example, English has a number of syntactic devices for specifying the informativeness of information, such as initialization of word order, pronominalization, ellipsis, and use of definite articles. Children as young as 2 years old are surprisingly adept at using pronouns and articles to differentiate between given and new information.

The length and complexity of children's utterances are also influenced by pragmatic or discourse factors. Several studies have found that young preschool children were more likely to produce longer and more complex utterances when their utterances shared the topic of the immediately preceding discourse (Bloom, Miller, & Hood, 1975; Nelson & Kamhi, 1985).

Many communicative functions (e.g., requests, responses, commands) can be expressed using prelinguistic forms or nonlinguistic behaviors. Some communicative functions, however, such as indirect requests, explanations, jokes, and suggestions, require specific syntactic knowledge. For example, indirect requests and suggestions require the use of past-tense modals (e.g., *Would you mind turning the light off? You could dump them out*). Children do not begin to express these communicative functions until later stages of development.

Semantic correlates

Children's syntactic choices are clearly influenced by the meanings they wish to express. For example, location is typically expressed by some type of postmodifier, usually a prepositional phrase, whereas completed events are expressed using past-tense forms. Beyond these obvious links between meaning and form, Slobin (e.g., 1979) has suggested that children use old structures to express new meanings and new structures to express old meanings. For example, a child might use a negative structure, *Daddy come, not come*, to express uncertainty. This meaning will be expressed more clearly when the child is able to use the appropriate modal form, as in *Daddy might come*. The need to express new meanings in grammatically appropriate ways without confusion is one of the motivations for acquiring new linguistic forms. Specific correspondences between semantic forms and syntactic structures can be seen in the language chart discussed earlier and shown in the Appendix.

Semantic information can also play a more specific role in children's acquisition of linguistic forms. The aspectual quality of verbs, for example, has been shown to have a direct influence on children's use of verb inflections (Bloom, Lifter, & Hafitz, 1980). Aspect refers to the temporal contour of an event. Aspectual categories include durative, progressive, habitual, perfective, and iterative (Fletcher, 1979). Bloom, Lifter, and Hafitz (1980) found that present progressive *-ing* was used first with verbs that described ongoing, durative events (e.g., *play, hold, ride, and write*), whereas past-tense forms were

used first with verbs that described momentary, completive events (e.g., *find*, *fall*, *break*). These data suggest that children's acquisition of verb forms is semantically motivated; or as some researchers have suggested, aspect is acquired before tense (see Antinucci & Miller, 1976).

Conceptual correlates

Most child language specialists agree that the forms children acquire are constrained by their conceptual or world knowledge. Children must know something about speaker attitudes and moods before they use modals. Knowledge about time, causality, manner, and location has direct bearing on children's use of adverbials. This is not to say that children cannot use forms they do not fully understand. Indeed, children often produce language forms that they do not understand (Leonard, Newhoff, & Fey, 1980). A common example is young children's frequent use of *why*, and *why not* before they understand causality.

Child language specialists are less likely to agree about the influence of general cognitive abilities on children's acquisition of linguistic forms. There are strong and weak cognitive hypotheses, a correlational view, and an autonomous linguistic view (Rice & Kemper, 1984). Most theorists, regardless of their theoretical orientation, agree with Johnston (1982) that language is the product of complex mental processes and is thus in some sense cognitive. To be able to map meanings and intentions onto linguistic forms, children must possess basic information-processing abilities that allow them to perceive, encode, store, integrate, and retrieve linguistic informa-

tion. The extent to which there are specific cognitive prerequisites for the acquisition of particular syntactic forms and structures remains an empirical question.

SYNTACTIC ABILITIES IN LANGUAGE-IMPAIRED CHILDREN

Clause types

Researchers have found no differences in the frequency with which language-impaired and normal children use the three basic clause types, transitive, intransitive, and equative (Johnston & Kamhi, 1984; Morehead & Ingram, 1976). Indeed, Morehead and Ingram found that MLU-matched normal and language-impaired children generally produced the same types of clauses in all stages. At each linguistic level, the two groups used the same grammatical structures with approximately the same frequency. The language-impaired children did, however, use fewer major lexical constituents (NP and VP) per clause. They also used fewer infrequently occurring clause types in more limited contexts than their normal counterparts (e.g., Q + Aux + N + V; N + Aux + Neg + V). The data from this study are often taken as evidence that language-impaired children's knowledge of major syntactic categories and combinatorial syntactic rules resembles that of younger normal children.

Noun-phrase elaboration

Most aspects of noun-phrase elaboration, including initiators, determiners, adjectivals, and postmodifiers, emerge in the speech of language-impaired and normally developing children during the first

three stages. Although Morehead and Ingram (1976) investigated only a limited set of noun-phrase structures, their data indicated that language-impaired children began using determiners, adjectivals, and initiators during the same linguistic stages as MLU-matched normal children. However, language-impaired children were markedly delayed in their use of postmodifiers. Whereas the normal children began using certain types of postmodifiers in the first two stages (e.g., *two of them*), language-impaired children did not begin using these types of postmodifiers until the third stage.

Verb-phrase elaboration

Language-impaired children have more difficulty with verb-phrase elaboration than would be expected from their overall linguistic level. Johnston and Kamhi (1984) found that 5-year-old language-impaired children used fewer catenatives (e.g., *gonna*, *hafta*), modals, and auxiliary verbs than younger normal children matched for MLU. The reason the language-impaired children tended to use fewer catenative and modal forms is that they talked more about ongoing events and less about intentions and necessities than the normally developing children. Ongoing events are expressed using present progressive structures, whereas intentions and necessities are expressed with more complex catenative and modal structures. The diminished number of auxiliary forms produced by language-impaired children is best explained by the fact that these forms have no clear conceptual ties and no obvious communicative function (Johnston & Kamhi, 1984).

Adverbials

As might be expected, encoding adverbial relations presents considerable difficulty for language-impaired children. Adverbials add information about the time, place, manner, or duration of their activities. Johnston and Kamhi (1984) found that language-impaired children used fewer adverbials than younger, language-aged-matched controls. Although language-impaired children talk about time or place, they do not include this information in their basic clause structures as often as normal children. Their limited use of adverbials may reflect general sentence formulation deficits or specific difficulty conceptualizing adverbial relations.

Grammatical morphology

Johnston and Schery (1976) examined the presence of Brown's (1973) 14 grammatical morphemes in speech-language samples from 287 language-impaired children. They noted the stage at which each grammatical morpheme appeared and the consistency with which it was used. Given 90% as the criterion for acquisition, the language-impaired children were found to acquire grammatical morphemes in much the same order as normal children. However, although many grammatical morphemes appeared during early stages of development, the language-impaired children did not use them at criterion levels until later stages. For example, the normal children acquired the present progressive in Stage II and the past tense in Stage IV. In contrast, the language-impaired children did not acquire these structures until Stages III and V, respectively.

Johnston and Kamhi (1984) found that 4- and 5-year-old language-impaired children made errors on approximately 50% of obligatory grammatical morphemes, compared with 30% for language-age-matched controls. Interestingly, because language-impaired children often talked about ongoing events involving progressive forms, their language samples tended to have more obligatory contexts for grammatical morphemes than samples from the normal children (Johnston & Kamhi, 1984; Morehead & Ingram, 1976).

ASSESSMENT PROCEDURES

There are a limited number of ways in which syntactic comprehension and production can be assessed. Standardized tests of syntactic comprehension usually involve pointing to the picture that best reflects the stimulus sentence. Examples of such tests include, The Test of Auditory Comprehension of Language (Carrow-Woolfolk, 1985); Miller-Yoder Language Comprehension Test (Miller & Yoder, 1984; and portions of the Test of Language Development (Newcomer & Hammill, 1982). Some tests, such as the Northwestern Syntax Screening Test (Lee, 1969), present the child with two sentences that differ in a specific grammatical feature (e.g., *The boy is running*, *The boys are running*). The child is then asked to point to the picture that best represents each of the sentences. The primary value of standardized tests is to obtain a general estimate of a child's language knowledge rather than specific diagnostic information. Nonstandardized procedures to assess

syntactic comprehension usually involve carrying out actions or manipulating objects.

Children's ability to produce syntactic structures can be evaluated by obtaining spontaneous conversational and narrative speech samples. More contrived ways to evaluate syntactic knowledge include elicited imitation, sentence completion, and grammatical closure tasks. These assessment procedures are useful for obtaining information about forms that are not well represented in a speech sample (e.g., adverbials, adjectives, pronouns).

A descriptive linguistic analysis of a conversational speech sample is essential for evaluating children's syntactic knowledge. Most clinicians adapt published analytic procedures to suit their particular clinical needs. The linguistic analysis procedures developed by Crystal, Fletcher, and Garman (1976) and Miller (1981) are among the more comprehensive published procedures. The best features of these are combined in the analytic procedures described in Lund and Duchan (1988), Hubbell (in press), and Stickler (1987). Each of these procedures includes analyses of clause structure, noun and verb phrases, complex sentences, grammatical morphology, questions, and negatives. The procedures yield a general stage of language development as well as information about the acquisition of specific syntactic structures.

In addition to performing any of these analyses, clinicians might wish to examine the various interactions that might exist among a child's developing syntactic, semantic, pragmatic, and phonological systems. The following questions can be

used to guide these supplemental analyses:

1. Do any communicative functions lack appropriate structural realizations (e.g., clarification requests)? Are the same communicative functions always expressed with the same grammatical forms?
2. Does the child use longer and more complex utterances when the utterance shares a topic with the previous utterance?
3. Do the child's longer, more complex utterances contain more morphological and phonological simplifications than shorter, less complex utterances?
4. Is there a relationship between the child's use of verb inflections and verb meaning? In other words, does the child use certain verb inflections (e.g., *-ed*) only with certain verbs?
5. Is the child using elliptical forms, pronouns, and articles in pragmatically appropriate ways?

Several computer-assisted analysis programs, such as SALT (Miller & Chapman, 1983), Lingquest 1 (Mordecai, Palin, & Palmer, 1982), and Computerized Profiling (Long, 1986) have become available recently to aid in syntactic analyses. Lingquest 1 is a representative example of these programs. The program provides frequency distribution information about clause and phrase types, complex sentences, and grammatical categories (e.g., nouns, verbs, modifiers, prepositions). It also performs type-token ratios and word and morpheme counts. The accuracy of the program depends on the ability of the user to correctly code the language sample. Computer-assisted language analysis

programs are a time-saving option for performing detailed analyses of language data.

TEACHING EARLY-DEVELOPING SYNTACTIC STRUCTURES

The two basic questions that underlie language intervention are what to teach and how to teach it. The authors' focus in this section will be on what syntactic goals should be targeted for language-impaired children, given what is known about syntactic development in normal children and the syntactic strengths and weaknesses of language-impaired children. Craig (1983) warns compellingly against a theoretical mismatch between therapy goals and procedures. For example, nativist or cognitivist theories of language acquisition are incompatible with an operant paradigm for teaching language. More specific information about therapy procedures appears in Fey's (1986) book on early language intervention, which contains three excellent chapters on clinician-oriented, child-oriented, and hybrid language intervention procedures.

Information about normal language development has an important role in the design of language remediation programs for language-impaired children. One obvious use of developmental language data is for specifying an order of acquisition for syntactic and morphological structures. However, clinicians should be aware of some of the problems in using "developmental logic" to plan therapy.

One problem is that developmental profiles often give the false impression that the development of syntactic structures is discrete and nonoverlapping. Instead,

acquisition of many syntactic structures is gradual. Acquisition of a structure at one phase of development rarely is completed before the acquisition of structures from subsequent phases is begun (Fey, 1986).

A second problem is that language-impaired children have different cognitive and linguistic abilities as well as different communicative needs from those of the younger normal children with whom they are being compared. Language-impaired children often have age-appro-

One problem is that developmental profiles often give the false impression that the development of syntactic structures is discrete and nonoverlapping.

priate nonverbal cognitive abilities and only mildly delayed receptive language knowledge.

A third problem with developmental logic is that developmental sequences are usually domain specific. Clinicians might follow a developmental sequence of syntactic acquisition while ignoring development in other language domains or cognitive and social areas.

Despite the problems with developmental logic, Fey (1986) is correct in asserting that the normal sequence of development provides the least arbitrary and most theoretically sound basis for programming intervention content. Clinicians must, however, be flexible in their adherence to developmental logic. Some specific suggestions for targeting early developing syntactic structures follow.

Clause types

Language-impaired children do not have any particular difficulty learning the three different clause types, apart from their difficulty expressing auxiliary and copula forms. Difficulty expressing grammatical morphemes should not be confused with difficulty at the clause level. In therapy, clinicians should target a range of verbs that reflect the three clause types. For example, equative clauses need not always contain the copula. Other equative verbs include *seem*, *look*, and *feel*. Clinicians should make sure that the different clause types are used to express a variety of communicative functions. As discussed next, the complexity of these clause types is increased by elaborating noun and verb phrases and through the addition of adverbs and adverbial clauses.

Noun-phrase elaboration

Language-impaired children do not have much difficulty with noun heads, but they do have problems elaborating noun phrases. Therapy should specifically target inclusion of determiners, adjectives, initiators, and postmodifiers. Some language-impaired children might have difficulty learning the subtle distinction between indefinite and definite articles. Clinicians should be careful not to spend an inordinate amount of time targeting these forms, however, because they do not significantly enhance communicative effectiveness.

In targeting nominal forms, clinicians should consider the contexts that motivate normal children's use of elaborated noun phrases. For example, adjectives often occur in contrastive situations to distin-

guish between two otherwise similar objects (e.g., *red ball* versus *blue ball*). Postmodifiers may be used to distinguish between similar objects in different locations (e.g., *The ball on the table* versus *The ball on the chair*, or *Which ball fell? The one on the chair*). In attempting to get language-impaired children to produce more complex noun phrases, clinicians should choose familiar lexical items that the child is already using in other linguistic contexts.

Verb-phrase elaboration

Verb-phrase elaboration is a principal area of weakness with language-impaired children, largely because of the difficulty these children have acquiring auxiliary forms. This difficulty stems from the fact that auxiliary forms lack clear ties to a physical referent and, therefore, are not well motivated by meaning. For this reason, clinical objectives that target the verb phrase should focus on elements that express aspectual and modal relations with clear ties to meaning rather than on elements that serve purely grammatical functions. Specifically, clinicians should begin by targeting the progressive aspect and the meanings expressed by the catenatives *gotta*, *wanna*, and *gonna*, and the modals *can*, *can't*, *will*, and *won't*.

Auxiliary and copula *be*, the two forms not well motivated by meaning, should first be taught in yes-no questions and elliptical responses. In both of these contexts, these forms have high perceptual salience because of the stress they receive and because only the more salient uncontracted forms can be used (e.g., *Is it raining?* *Yes, it is*). Also, in black dialects

the auxiliary and copula are not deleted in these contexts. When these forms are targeted in declarative sentences, clinicians should be careful not to set high criterion levels (e.g., above 60%). The time spent in therapy to reach higher levels could be better spent targeting forms that more directly improve the range of meanings and intentions expressed.

Adverbials

As indicated earlier, the difficulty language-impaired children have using adverbials may reflect general sentence formulation deficits or problems in conceptualizing adverbial relations. Clinicians should first target conceptually simple adverbs in simple phrase and clause structures. Spatial locatives, such as *in*, *on*, and *under*, should be among the earliest adverbials targeted. Manner relations, reflected in the following sentences, also emerge early: *He ran fast/slow/quickly*, *She eats with a spoon/fork/knife*.

Causal, temporal, and conditional relations are later-emerging adverbials that should be targeted when the child reaches the appropriate linguistic and conceptual level (e.g., Brown's (1973) Stage IV). Language-impaired children should not be asked to produce new adverbial relations in new syntactic structures. For example, when *because* is initially targeted, the child should be expected to produce only the dependent clause that begins with *because* (e.g., *Because it's hot*) rather than the complete sentence: *I took my sweater off because it's hot*.

Adverbials, like adjectives and postmodifiers, often occur in contrastive contexts in which the listener needs additional

information about an event. Clinicians should provide contexts in which some aspect of the event (place, time, manner) is especially salient or novel for the child.

Grammatical morphemes

Grammatical morphemes are an excellent example of language forms that should *not* be targeted in the order in which they are acquired by normally developing children. In deciding which grammatical morphemes to target, it is more important to consider the meaning and communicative value of the form than its order of acquisition. For example, progressive and past forms and plural *-s* have close ties to meaning, whereas the auxiliary forms and third-person present *-s* are formal linguistic devices with no meaningful ties.

As indicated earlier, Bloom, Lifter, and Hafitz (1980) found that children's early use of the progressive, past, and third-person present *-s* was closely tied to verb meaning in the early stages of language development. This information is particularly useful in deciding which verbs to use in teaching verb inflections. One way to facilitate production of these and other grammatical morphemes is to use visual cues, such as the written word, to present the form. The written word provides children with a clear representational symbol with which to encode the morpheme. Moreover, the use of written words need not wait until a child is 5 years old. Normal children as young as 2½ years of age begin to recognize words by sight and develop sight vocabularies of 20 to 30 items by the time they begin school (Frith, 1985). Allowing about a year for develop-

mental delay, language-impaired children should be able to use whole-word recognition strategies by age 3½ or 4.

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The cyclical nature of scientific theories, ideas, and values has been well documented. Throughout the centuries, periods of empiricist thought have alternated or coexisted unharmoniously with periods of rationalist thought. Speech-language pathology is not immune to cyclical influences. The focus of language therapy in the 1980s is on communicative effectiveness, just as it was in the 1950s. Cycles, however, need not be rebegun at the starting point. Knowledge should be continually incorporated into current views and practice. The authors' intent in this article was to remind clinicians that syntactic deficiencies are an integral part of language-impaired children's communication difficulties. Making these children more competent users of syntactic forms, must be a primary objective of language therapy. These forms should not be taught, however, in sterile, noncommunicative contexts, as they were 10 to 20 years ago. The interactive and interdependent relationships among syntactic, semantic, communicative, and conceptual systems cannot be overemphasized. Determining which language forms to teach and how best to teach them depends, in part, on clinicians' ability to understand how these systems function in individual language-impaired children. The authors hope that this article has clarified some of the issues involved in teaching simple clause types and grammatical morphology.

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