CH. 4: LANGUAGE DISORDERS IN CHILDREN

Specific Language Impairment

General Characteristics, p. 151

Etiology	● No known etiology ● Not secondary to other developmental disabilities ● May have subtle cognitive deficiencies, although general intelligence is normal
Sequence & Profile	● Same as that of children with typically developing language ● Problems may be seen with various aspects of language ● Varied profiles among children
Explanation	● *Underlying deficits*□ SLI is due to deficits in the cognitive, auditory, perceptual, & intellectual functions that underlie language ● *Normal variation*□ children with SLI are at the lower end of the normal continuum of language skills

Specific Characteristics, p. 151

General deficits	● Often late talkers ● Slow rate of word acquisition, especially between 18-24 months (when children typically show a great vocabulary spurt) ● May overextend or underextend words ● Word-finding/word-retrieval problems ● Difficulties with abstract and/or figurative language ● Shorter utterances (MLU is shorter) ● Simple, declarative sentences predominate ● Speech of young children with SLI is *telegraphic* □ omits smaller grammatical elements while preserving the meaning of the utterance ("Cat eat food.") ● Understanding of complex sentences is difficult
Speech deficits	● May have poor intelligibility and/or exhibit phonological processes longer than typical children ● May manifest less complex syllable structure than same-age peers ● May have fewer consonants
Morphological deficits	● Experts believe these deficits may be due to: o *perceptual problems:* do no perceive morphological features as well as they do others, because those features are produced with less stress & lower intensity o *syntactic problems:* syntactic complexity involved in sentence comprehension & production may have a negative impact on morphology ● Deficits involve omissions of: o regular/irregular plural morphemes o possessive morphemes o present progressive –ing o third-person singular ("He plays ball.") o articles (a, an, the) o auxiliary and copula verbs (the auxiliary 'is' in "She is running;" the copula 'is' in "She is smart.") o regular past-tense inflections and irregular past-tense words o comparatives and superlatives ● May show confusion with: o singular and plural forms of words o plural and singular forms of auxiliary and copula verbs (are, is) o subject case markings (him, he or her, she) o regular and irregular forms of plural and past-tense morphemes
Pragmatic deficits	● Vary greatly among children with SLI ● May have difficulty with: o topic initiation o turn taking o topic maintenance o appropriate conversational repair strategies

	o discourse and narrative skills (narratives are less complete, contain fewer utterances, & show more communication breakdown) o staying relevant during conversation

Children with Language Problems Associated with Physical & Sensory Disabilities

Intellectual Disabilities, p. 154

Definition	● Characterized by "significant limitations both in intellectual functioning and in adaptive behavior as expressed in conceptual, social, and practical adaptive skills." ● Originates before the age of 18 ● Diagnosis based on sub-average IQ scores
Etiology	● Etiology □ Inherited genetic syndromes (such as Down Syndrome); environmentally induced genetic abnormalities (fetal alcohol syndrome) ● Prenatal □ Rubella, maternal lead poisoning, maternal anoxia, prenatal trauma ● Natal □ Fetal anoxia ● Postnatal □ Traumatic brain injury, low birthweight, endocrine and metabolic disorders, cranial abnormalities
Sequence & Profile	● Language is delayed rather than deviant ● Follow the same sequence of language development at a delayed rate ● EXCEPTION □ profoundly intellectually disabled children may show echolalia, which is uncommon in children who are learning language normally
Concomitant Problems	● Distractibility & short attention span ● Congenital microcephaly ("small head") ● Difficulties with fine and gross-motor skills ● Physical structural deficits such as cleft palate
Cognitive deficits	● Depressed skills ● Have difficulty with abstract concepts □ affects semantic skills
Semantic deficits	● Smaller, more concrete vocabularies ● May be a gap between comprehension & expression (comprehension higher)
Morphologic deficits	● Especially poor ● Speech often telegraphic ● Tend to omit bound morphemes and function words (small words that help make up sentences)
Syntactic deficits	● Reduced expressively and receptively ● Master syntactic constructions as typically developing children do, but at a slower pace
Pragmatic deficits	● May be passive in interacting with others ● Due to reduced communication skills, they may be physically aggressive and communicate physically rather than verbally

Autism Spectrum Disorders, p. 155

Definition	● Diagnosed before age 3 ● Diagnostic criteria include impaired social interaction, disturbed communication, stereotypic patterns of behavior, interests, and activities
Characteristics	● Generally below-average intelligence (IQ 70 or below) ● Lack of responsiveness to and awareness of other people ● Preference for solitude and objects rather than people ● Lack of interest in nonverbal and verbal communication ● Stereotypic body movements such as constant rocking ● Insistence on routines; strong dislike of change ● Dislike of being touched or held ● Self-injurious behavior such as head banging (in some children) ● Unusual talent in some area, such as arithmetic (in some children) ● Seizures (in about 25% of children) ● Hyper- or hyposensitivity to sensory stimulation
Language Problems	● Inadequate or lack of response to speech ● Lack of interest in human voices & better response to environmental noises; fascinations with mechanical noises ● Slow acquisition of speech sound production & language, reflecting general disinterest in interaction with others

	● Use of language in a meaningless, stereotypic manner, including echolalia ● Perseveration on certain words or phrases ● Faster learning of concrete than abstract words, including more ready learning of words that refer to objects as opposed to emotions ● Lack of generalization of word meanings ● Lack of understanding of the relationships between words ● Pronoun reversal ● Use of short, simple sentences; occasional use of incorrect word order ● Omission of grammatical features such as plural inflections, conjunctions ● Social communication problems including lack of eye contact, difficulty maintaining conversational topics, reduced initiation of conversation, and lack of assertiveness ● Difficulty establishing joint reference
Concomitant Problems	● Motor deficits ● Central auditory problems ● Intellectual disabilities ● Evidence of brain injury, particularly damage to the left cerebral hemisphere ● Abnormal electrical activity of the brain ● Seizures ● Hearing loss ● Hypo or hypersensitivity to touch

Traumatic Brain Injury (TBI), p. 158

Definition	● Cerebral damage due to external physical force o *Focal injury* □ restricted to one area of the brain o *Diffuse injury* □ involves multiple areas because damage is widespread ● Most frequently caused by motor vehicular and sports-related injuries, falls, physical abuse, assaults, and gunshot wounds ● Immediate effects □ coma or loss of consciousness, confusion and post-traumatic amnesia (memory loss), abnormal behaviors (aggression, anxiety, irritability, hyperactivity, lethargy, and withdrawal), motor dysfunctions (tremors, rigidity, spasticity, ataxia, apraxia)
Cognitive/Language Deficits	● Some of these are observed only initially and may resolve; others may be long-term o comprehension problems, especially of sentences o word-retrieval problems leading to reduced fluency o syntactic problems, including limited MLU, fewer utterances, and difficulty expressing and understanding long, complex sentences o reading & writing problems; poor academic performances o pragmatic problems such as difficulty with turn taking and topic maintenance (often related to poor inhibition and lack of self-monitoring) o difficulty with attention and focus o memory problems o inability to recognize one's own difficulties o reduced speed of information processing o difficulties with reasoning and organization

Cerebral Palsy, p. 159

Definition	● Disorder of early childhood in which the immature nervous system is affected □ results in muscular incoordination and associated problems ● Not a disease; it refers to a group of symptoms associated with brain injury in still-developing children ● Not progressive ● CP is a common childhood disability
Etiology	● Generally occurs for the following reasons: o Prenatal brain injury due to maternal rubella, mumps, accidents, or other factors o Perinatal brain injury due to difficulties in the birth process such as prolonged labor prematurity, breech delivery o Postnatal brain injury due to anoxia, accidents, infections, and diseases such as scarlet fever and meningitis

Types	● *Ataxic CP* □ involves disturbed balance, awkward gait, and uncoordinated movements (due to cerebellar damage) ● *Athetoid CP* □ characterized by slow, writhing, involuntary movements (due to damage to the indirect motor pathways, especially the basal ganglia) ● *Spastic CP* □ involves increased spasticity (increased tone, rigidity of the muscles) as well as stiff, abrupt, jerky, slow movements (due to damage to the motor cortex or direct motor pathways)
Deficits	● Children with CP can manifest paralysis of various body parts, characterized as follows: o hemiplegia (one side of the body, the right or left, is paralyzed) o paraplegia (only the legs and lower trunk are paralyzed) o monoplegia (only one limb or a part thereof is paralyzed) o diplegia (either the two legs or the two arms are paralyzed) o quadriplegia (all four limbs are paralyzed) ● Speech and language deficits o depend largely on the type of CP and the presence of associated problems such as intellectual disabilities or hearing loss o some have normal language skills, while others have severe language problems
Associated problems	● Orthopedic abnormalities, seizures, feeding difficulties, hearing loss, perceptual disturbances, and intellectual deficits

Children with Language Problems Related to Physical & Social-Environmental Factors

Language Problems Related to Parental Drug and Alcohol Abuse, p. 160

Fetal alcohol syndrome	● a pattern of mental, physical, and behavioral defects that develop in the infants born to some women who drink heavily during the pregnancy ● leading cause of intellectual disabilities in the Western World ● deficits: o pre- and postnatal growth problems; abnormally low birthweight and length; small head size o central nervous system dysfunction: delayed motor development, mild-profound intellectual disabilities or learning disabilities o abnormal craniofacial (skull & face) features o malformations of major organ systems, especially of the heart; the child may have a small trachea and kidney problems o behavior problems, including hyperactivity and attention-deficit disorder o poor play and social skills, including poor organizational responses to environmental stimuli o learning and academic problems: poor reading, writing o speech problems such as articulation delay; may have cleft palate or oral-motor coordination problems o swallowing problems, including impaired sucking reflex at birth o language delay o cognitive problems—reasoning, memory, learning o auditory processing problems o hearing problems—conductive and sensorineural losses
Fetal alcohol effects	● signs (e.g. mild physical and cognitive deficits) that have been linked to the mother's drinking during pregnancy ● babies with FAE do not meet the diagnostic criteria for FAS
Prenatal exposure to drugs	● Motor/neurological problems o poor visual tracking o blanking out, staring spells, bizarre eye movements o gross- and fine-motor problems o tremors, increased startling o decreased awareness of body in space ● affective/behavioral problems o emotional lability; mood swings from apathy to aggressiveness

	○ depressed affect; decreased laughter ○ great difficulty with transition and changes ○ refusal to comply with simple commands; testing of limits ○ inability to self-regulate, modify own behavior ● social attachment and related problems ○ lack of eye contact; gestures to initiate social interactions ○ separation anxiety ○ indiscriminate attachment to new people ○ aggressiveness to peers ○ decreased responsiveness to praise, rewards ● cognitive skill impairments ○ poor on-task attention ○ increased distractibility to extraneous sounds, movements ○ impulsivity, poor use of trial-and-error strategies ○ difficulty with immediate, short-term, and long-term memory ● language learning problems ○ fewer spontaneous vocalizations from infancy ○ delayed language acquisition ○ decreased use of words; gesturing to communicate wants and needs ○ word-finding problems ○ prolonged infantile articulatory—phonological disorders ○ difficulty following directions ○ difficulty answering wh-questions ○ difficulty understanding opposites and uses for objects

Language Problems Related to Attention-Deficit/Hyperactivity Disorder, p. 164

Definition	● Chronic difficulties in the areas of impulsivity, attention, and overactivity to a degree inappropriate to their age and developmental level ● More likely to receive lower grades in academic subjects, and over half of children with ADHD will fail at least one grade by adolescence
Two types	● *In-attention* and *Hyperactivity-impulsivity* ● Children may have a combination of characteristics in one or both of these categories, and subclassifications are made on the basis of the combination of characteristics presented by the individual child
Behavioral characteristics	● frequent fidgeting with hands or feet squirming in seats ● difficulty remaining seated when required to do so ● high distractibility by extraneous stimuli ● difficulty sustaining attention in tasks or activities ● difficulty waiting turns in games or group situations ● frequent loss of things necessary for tasks or activities at school or at home ● frequent participation in physically dangerous activities without considering the possible consequences
Auditory Processing/Social deficits	● often blurt out answers to questions before the questions have been completed ● have difficulty following through on instructions ● often do not seem to be listening ● often talk excessively ● often interrupt or intrude on others ● use non sequiturs during discourse ● have poor turn-taking skills ● frequently manifest false starts because they change their minds while structuring a response ● use an excessive number of fillers and pauses because verbal expression occurs with minimal preplanning ● have difficulty describing things in an organized, coherent manner—have general difficulty with expressive language organization ● do not tell stories or use narrative skills effectively due to disorganization and impulsivity of thought

	● have difficulty with social entry (limited knowledge of hot to successful initiate or join ongoing interactions) ● use inappropriate register; for example, use the same interactive style with adults and peers ● do not perceive or act appropriately upon interlocutors' nonverbal cues ● do not use comprehension monitoring strategies; for example, do not request a repetition of information when they experience a comprehension breakdown

Assessment Principles & Procedures

Language Assessment: General Principles & Procedures, p. 166

Screening	● Process of quickly obtaining a general overview of the child's language skills ● Used to initially decide whether further assessment is necessary ● Informal measures usually used; however, there are published screening tests
Standardized assessment	● Provide quantitative means of comparing the child's performance to the performance of large groups of children in a similar age category ● Limitations: o inadequate national sampling in the normative process o inadequate response sampling o contrived test situations that do not represent naturalistic communication o limited participation of families in assessment when tests are the main source of information o inappropriateness for ethno-culturally diverse children
Alternative Assessment	● Sample more naturalistic communication skills and expand the scope of assessment to include a variety of more reliable and valid information ● Includes *criterion-referenced* and *client-specific approaches*; *dynamic assessment* and *portfolio assessment*
Language sampling	● Procedure of recording a student's language under relatively typical and appropriate conditions, which usually includes conversation ● Published protocols available: o *Language Assessment, Remediation, and Screening Procedure* (LARSP) o *Developmental Sentence Scoring* o *Language Sampling, Analysis, and Training Procedure* (LSAT) ● Language sampling programs o *Computerized Profiling* o *Lingquest I* o *Systematic Analysis of Language Transcripts* ● **Mean length of utterance (MLU):** o number of morphemes/number of utterances ● **Type Token Ratio (TTR):** o number of different words in sample/number of words in sample o for children 3-8 years, TTR is usually 1:2, or 5

Assessment of Infants and Toddlers

Established risk for developing language disorders	● congenital malformations (e.g., cleft palate, spina bifida) ● genetic syndromes (e.g., Down syndrome) ● atypical developmental disorders (e.g., autism) ● sensory disorders (e.g., hearing loss, visual impairment) ● neurological disorders (e.g., cerebral palsy, muscular dystrophy) ● metabolic disorders (e.g., Tay-Sachs disease, pituitary disease) ● chronic illnesses (e.g. diabetes, cystic fibrosis) ● severe infectious diseases (eg., HIV, encephalitis) ● severe toxic exposure (e.g., lead poisoning, fetal alcohol syndrome)
At risk for developing language disorders	● serious prenatal and natal complications, including low birthweight (<1,500 g), child being small for gestation age (<10th percentile), and anoxia

	● early signs of behavior disorders (e.g. irritability, withdrawal) ● child's tendency toward frequent and unusual accidents ● chronic middle ear infections (otitis media) ● family history of predisposing genetic or medical conditions ● chronic or severe physical illness, mental illness, or intellectual disabilities in the primary caregiver of one or both parents ● serious questions raised by a professional, a parent, or a caregiver about the child's development ● chronically dysfunctional interaction between members of the family ● caregiver or parental substance abuse, or history of abuse ● parental education below ninth grade, parental unemployment, or chronic welfare dependency ● isolation of the child or separation of the child from the primary caretaker or parent ● unstable or dangerous living conditions ● lack of health insurance; poor family health care; inadequate prenatal care
Prelinguistic Behavioral Deficiencies in Infants and Toddlers	● Some infants who later exhibit SLI may not show primary impairment. ● Several factors distinguish such infants: o difficulty establishing eye contact, mutual gaze, and joint reference o communication of needs through greater use of gestures and vocalizations than words and phrases; frequent delays in onset of first word and onset of two-word combinations o reduced amount of babbling, fewer consonants in babbing, and less complex babbling
General Assessment Guidelines & Procedures	● Family-centered assessment in both home and in clinical settings ● Begin assessment as early as possible ● Repeat assessments throughout the childhood period ● Assess the family constellation, family strengths and weaknesses, and family communication patterns ● Conduct interviews & gather extensive case history ● Collaborate with other professionals ● Consider multicultural factors
Specific Assessment Guidelines & Procedures	● Language-related skills o Attentional and physiological state (including drowsiness, alertness, light or deep sleep states, eye opening, crying, toleration of handling, etc.) o Readiness for communication (e.g. whether the baby shows reciprocal interaction with the environment) o If necessary, refer to an audiologist ● Language comprehension and verbal communication o Use developmental language milestones to assess the presence or absence of verbal communication behaviors & comprehension skills o Can be done through observation or parent report ● Infant-caregiver interaction o Use instruments (such as the *Mother-Infant Play Interaction Scale* and the *Observation of Communication Interaction*) as these instruments help assess: ▪ the infant's mood and affect; responsiveness lack thereof ▪ how the caregiver modifies the interaction when the infant gives negative cues (e.g. when the infant is tired of peek-a-boo and averts her gaze, the caregiver changes activities) ▪ how the caregiver visually focuses on the baby (e.g. the caregiver holds or places the infant at his or her eye level and maintains eye contact) ▪ how the caregiver stimulates and handles the baby (holding, rocking, cuddling, stroking) ▪ how the caregiver expresses their affection for the baby (e.g. smiling and laughing) ● Play activities o Observe play with one or more other children and whether the child: ▪ exhibits aggressive or uncooperative behaviors ▪ does not share toys ▪ talks little during play ▪ passively watches others play

	▪ plays cooperatively with other children ▪ engages in isolated or parallel play ▪ engages in constructive activities with or alongside other children ▪ engages in pretend play or role-playing

Assessment of Preschool and Elementary-Age Children, p. 172

Description of Language Disorders	● *Difficulty in comprehending spoken language* o problems with comprehending syntactically longer and more complex productions o difficulty comprehending the meaning of complex words, phrases, sentences, & abstract terms ● *Slow or delayed language onset* o delayed babbling o slower vocabulary growth rate o delayed acquisition of vocabulary o slowness in combining words into phrases and sentences o overall slower acquisition of language milestones ● *Limited language output or expressive language* o limited verbal repertoire o lack of complex or longer word productions o limited amount of vocabulary produced and comprehended o lack of abstract words ● *Problematic syntactic skills* o shorter instead of longer sentences o simpler instead of more complex sentences o single words or phrases in place of sentences o limited variety of syntactic structures ● *Problematic pragmatic skills* o difficulty with initiating and maintaining conversations, turn taking, using conversational repair strategies, maintaining eye contact, and narrative skils ● *Problematic learning of grammatical morphemes* o difficulty with comparatives and superlatives (e,g, smaller, smallest) o omission of bound morphemes o incorrect use of learned grammatical morphemes, including overgeneralizations (womans/women; goes/went) past the appropriate developmental point
General Assessment Guidelines & Procedures	● Begin by screening language to determine if a more detailed assessment is needed ● Obtain a case history ● Use social assessment info from parents, teachers, and peers about the child's communication patterns ● Evaluate semantic, syntactic, morphologic, and pragmatic aspects of both expressive and receptive language ● Evaluate reading and writing skills if relevant, and relate communication skills to academic demands and performance ● Assess the family constellation and communication patterns
Specific Assessment Guidelines & Procedures	● Obtain and extended language sample; can be collected on different days with different interlocutors over a period of time ● *Syntactic skills* o calculate the child's MLU and evaluate complexity of utterances o evaluate the child's use of: ▪ verb phrases (e.g. "he is swimming," "that is red") ▪ noun phrases (e.g. "my books," "big dress," "that crayon") ▪ prepositional phrases (e.g. "the crayons in the box") ▪ sentence types such as simple, declarative, compound, complex, active, questions, negatives, and requests ● *Morphologic skills* o use appropriate pictures to assess a child's production of regular and irregular plural nouns as well as present progressive –*ing* (e.g. "What are these things?" "What is the boy doing?")

	○ assess production of comparatives and superlatives by showing three pictures and saying things like "The man is big: this man is even _____, and this man is the very _____." ○ evoke the possessive morpheme by showing pictures and asking questions such as "Whose hat is this?" ○ evoke the production of the third-person singular by asking such questions as "What flies?" and "Who cooks?" after showing pictures of a bird flying and a man cooking ○ assess production of adjectives by showing pictures and asking the child to complete such sentences as "This boy is _____" (short), "This car is _____(green)" and so forth ○ evoke past-tense construction by telling a story through pictures, and then asking the child to use the pictures to retell the story ● *Semantic skills* ○ ask parents to list words the child uses, especially if the child on produces a few words ○ ask parents to describe the types and number of words the child uses at home ○ have the child name and describe pictures, toys, and objects as you show them ○ have the child tell a story depicted in pictures ○ tell the child a short story and then have the child retell the story to you ○ note phenomena such as unusual word usage, over-and underextension of words, signs of misunderstanding words, and the use of general terms (this, that, thing) for more specific ones ● *Pragmatic skills* ○ eye contact and other nonverbal behaviors ○ narrative skills ○ topic initiation and maintenance ○ turn-taking skills ○ conversational repair (e.g. asking for clarifications when messages are not clear and responding appropriately when a listener asks for clarification) ● *Language comprehension* ○ note inappropriate or irrelevant responses that indicate lack of comprehension ○ note the complexity level at which comprehension breaks down (e.g. comprehension of words and phrases, but not sentences) ○ give specific commands that gradually increase in length and complexity ○ ask the child to point to correct pictures that help assess comprehension of grammatical morphemes (e.g. Show me *the dog is barking*," "Show me *three shoes*.") ○ assess comprehension of abstract statements by asking the child to explain the meaning of common proverbs (e.g. "Tell me what 'A penny saved is a penny earned' means.")

Assessment of Adolescents, p. 176

Description of Language Disorders	● *Syntactic problems* ○ limited length of sentences; sentences shorter than would be expected ○ difficulty in using complex sentences containing subordinate clauses ○ difficulty using cohesion devices or connectives (e.g. the use of such expressions as *moreover, furthermore, therefore, for example*) ○ lack of agreement (e.g. noun-verb agreement) ○ persistent use of syntactic errors ○ limited use of low-frequency structures (e.g. passive sentences like "The book was written by the author," or such noun phrase post modifications as "a flower called the tulip" or "Mrs. McKibbin, the math teacher" ● *Semantic problems* ○ word-retrieval problems in conversational speech, resulting in dysfluencies such as repetitions, revisions, and false starts ○ problems with word-definition skills; possibly more evident in defining scientific and technical words ○ word-relation problems; difficulty understanding and correctly using words that are related by similar or contrastive meanings (synonyms and antonyms)

	○ difficulty understanding and correctly using figurative language (e.g. idioms, metaphors, and proverbs) ○ difficulty using and using peer-group slang ○ difficulty in understanding and correctly using words with abstract and multiple meanings (e.g. rock, pound) ○ difficulty using precise terms with clear referents (as demonstrated by excessive use of such terms as *this, that, thing, stuff,* etc.) ● *Pragmatic problems* ○ difficulty modifying statements or adding new information (restatement of the same information without modification for listener) ○ maze behavior (false starts and repeated attempts to express the same idea; e.g. "You know, the um, the, you know, it was the um…the thing.") ○ inappropriate use of gestures and other nonverbal cues ○ difficulty maintaining the topic of conversation ○ difficulty in distinguishing facts from opinions ○ tactless expressions; difficulty being indirect when necessary ○ difficulty asking relevant questions and making relevant comments during conversation; may make inappropriate interruptions, and may use non sequiturs ○ difficulty using the correct register (e.g. the use of a more formal register with teachers and other authority figures than with peers) ● *Literacy problems* ○ grammatical errors (e.g. "The whale were in the sea.") ○ difficulty comprehending what they read silently or aloud ○ spelling difficulties ○ use of nontechnical language instead of technical language ○ poor formation of letters (may or may not be related to fine-motor problems) ○ lack of punctuation skills (e.g. misuse or omissions of periods and commas) ○ poor organization of narratives and essays, leaving the read confused ○ sparse information, lack of appropriate detail
General Assessment Guidelines & Procedures	● Screen language to determine if a more detailed evaluation is necessary ● Obtain a case history ● Use social assessment methodologies ● Evaluate syntactic, semantic, morphologic, and pragmatic receptive and expressive language skills ● Evaluate reading and writing skills and relate to the demands of the classroom ● Relate written and oral communication skills to potential vocational needs and demands ● Consider factors related to second-language acquisition, bilingualism, and use of a social dialect ●
Specific Assessment Guidelines & Procedures	● Use a combination of formal and naturalistic measures ● Obtain an extended speech and language sample to analyze language as it occurs naturally in the environment ● Obtain a sample of a conversation between the client and a teacher, one or more peers, and a family member ● *Syntactic skills* ○ assess the use of vague, wordy, and roundabout expressions instead of more precise expressions ○ assess the use of connectives or cohesion devices, note the contexts in which the student should have used such devices but did not ○ assess agreement ○ conduct an analysis of syntactic skills through the use of speech and language samples, narratives, and writing samples ○ assess sentence length in *C-units* (communication units) and *T-units* (terminable units) ▪ Both C-units and T-units contain an independent clause and subordinate clauses, but the C-units also may be incomplete sentences produced in response to questions ▪ Count the number of words per unit and calculate both the mode—the most frequently observed length—and the mean ● *Semantic skills*

	○ *word-definition skills*—obtain a list of words from the student's teachers and textbooks; ask the student to define them ○ *word-retrieval problems* in conversational speech—take note of such dysfluencies as pauses, revisions, false starts, repetitions, and so forth; take note of words that are retrieved with more or less difficulty ○ *word-relation* problems—have the student define and contrast synonyms and antonyms ○ *difficulty in using precise terms* during conversation, narrative tasks, and writing—take note of the frequency with which the student uses vague expressions ○ *difficulty in understanding and correctly using figurative language*—make a list of common idioms, proverbs, and metaphors and then ask the student what they mean ● *Pragmatic skills* ○ assess the frequency with which the client asks you to repeat information, suggesting poor listening skills ○ assess the use of correct register depending on the situation (slang vs. formal) ○ note any inappropriate body language during conversation (e.g. standing too close, using appropriate gestures) ○ introduce various topics and evaluate the student's ability to maintain those topics over successive utterances ○ ask the student to read a story and then retell it: ask the student to orally narrate a story; evaluate the student's ability to correctly sequence events in a manner understandable to the listener ○ count the frequency of maze behaviors such as false starts and repeated attempts to express the same ideas ○ note interruptions, irrelevant comments, and non sequiturs ○ make vague and nonspecific statements; evaluate whether the student makes requests for clarification ● *Reading and writing* ○ ask the student to read grade-level material; analyze the type and frequency of reading errors made ○ ask questions about the material the student read to evaluate reading comprehension ○ analyze multiple writing samples for: ▪ difficulty forming letters and other handwriting problems ▪ spelling errors ▪ punctuation errors ▪ errors in syntax ▪ cohesion and overall organization ▪ appropriateness of content, including the adequacy of information offered and details given

Treatment

General Principles	● It is important to involve the family in selecting treatment targets; older children should take part in treatment target selection ● Clinicians should focus on *academic* and *social* language—the language needed for success in school and the language needed to be socially competent ● Select literacy—reading and writing—goals when appropriate ● Select language targets that are ethno-culturally appropriate ● Specifically target language behaviors that create social penalties for the child ● Select treatment procedures that are evidence-based ● Use a multimodal approach to treatment ● To learn and retain language treatment targets, children need *multiple exposures* and *multiple exemplars* ○ Instead of showing a picture of a Labrador and teaching the child the word *dog*, the clinician should have many pictures of different dogs and even some toy dogs for the child to play with

	● Chronological age does not necessarily dictate specific treatment procedures; the child's current developmental level is a much more reliable indicator of what treatment goals and procedures will be appropriate ● Computer-assisted technology is an option (only select those that are evidence-based) ● Collaboration with a classroom teacher is important
Discrete Trial Procedure	● Useful in initial stages of treatment when skills have to be shaped or established ● Not efficient for ensuring a skill generalizes ● In discrete trial training, the clinician: o places a stimulus picture in front of the child (e.g. a picture of two cups) o asks the child a relevant question (e.g. "Antonio, what do you see?") o immediately models the correct response for the child (e.g. "Say, 'two cups.') and waits for a few seconds for the child to imitate the modeled response o reinforces the child for correct imitation o gives corrective feedback if the child missed the target response (e.g. two cup) by saying "No, that is not correct." o records the response o waits a few seconds to begin the next trial
Basic Behavioral Techniques	● There is a great deal of evidence for the effectiveness of the following techniques that may be used as a part of a comprehensive language treatment program: o *Instructions*—giving adequate instructions regarding the targeted language skill and how is it performed is essential to begin treatment (e.g. "When you see two of these, you say, 'cups.' When you see only one, you say 'cup.') o *Modeling*—this is an effective technique to teach a skill that is nonexistent. The clinician's modeling should be follow by a child's imitation and positive reinforcement o *Prompting*—prompts are like hints o *Shaping*—this is a procedure in which a complex response is broken down into smaller components that are taught sequentially to achieve the final target skill. For example, a child who can not imitate "Mommy" may be taught to put the lips together, then produce any kind of vocal response, then the initial syllable, and finally the full word o *Manual guidance*—this involves offering physical assistance to produce a response. For example, after asking the child to point to a picture, the clinician may take the child's hand and point to the correct picture o *Fading*—this minimizes the need for special procedures to evoke language responses. For example, prompts may be faded by a progressively soft voice so the child continues to respond even when the prompts are no longer heard o *Immediate, response-contingent feedback*—promptly delivered positive reinforcement for correct responses and corrective feedback for incorrect responses are necessary to teach skills
Expansion	● Clinician expands a child's telegraphic or incomplete utterance into a more grammatically correct utterance
Extension	● Clinician comments on the child's utterances and adds new and relevant information ● There is a need to experimentally support the effectiveness of this procedure
Focused Stimulation	● Clinician repeatedly models a target structure to stimulate the child to use it ● Usually done during a play activity that the clinician designs to focus on a particular language structure ● Clinician uses various stimulation materials, talks about them, and repeatedly models the target ● Clinician does not correct the child's incorrect responses but instead models the correct target ● Effectiveness of focused stimulation needs to be established
Milieu Teaching	● Refers to a group of techniques that have been experimentally evaluated and shown to be effective in teaching a variety of language skills to children ● This method teaches functional communication skills through the use of typical, everyday interactions that arise naturally ● Milieu teaching uses effective behavioral procedures in naturalistic settings ● Three specific techniques constitute milieu teaching: o *Incidental teaching* □ the adult waits for the child to initiate a verbal response ▪ pays full joint attention to the stimulus that prompted a response from the child

	▪ prompts an elaboration of the response (e.g. "What do you want?"), or models an elaboration ("You want that ball! What do you want?:); if the child fails to elaborate, a traditional model may be given (e.g. "Say…") ▪ praises the child and hands the desired object when the child elaborates (spontaneously or imitatively) o *Mand-model* □ teaches language through the use of typical adult-child interactions in a play setting; clinician, using attractive stimulus materials, designs a naturalistic interactive situation; he or she then establishes joint attention to a particular material such as a set of paints ▪ the clinician then *mands* a response from the child (e.g. "Tell me what you want." "Tell me what this is."); if the child gives no or very limited response, the clinician models the complete, correct response ▪ if the child does not imitate the entire modeled sentence, the clinician prompts (e.g. "Tell me the whole sentence."); the child is then praised for imitating or for responding correctly without modeling and is given the item they want o *Time delay* □ clinician waits for the child to initiate verbal responses in relation to stimuli that are separated by a predetermined waiting period ▪ without prompting a response, the clinician looks at the child expectantly for at least 15 seconds ▪ if the child does not initiate, the clinician prompts a response or models it ▪ the clinician gives the desired object when the child imitates, spontaneously requests, or fails to say anything after three models each separated by 15 seconds
Joint Routines or Interactions	● Routinized, repetitive actions are frequently used in early language stimulations with young children ● Examples: peek-a-boo to establish interaction or design own routines (e.g. always start therapy with the same story, which contains certain language targets) ● Evidence needed to support use of these interactions
Joint Book Reading	● Clinician stimulates language through use of systematic book reading ● Joint book reading allows for repetitive use and practice of the same concepts and phrases ● Clinician selects appropriate book and reads it several times so that the children memorize it ● Clinician uses prosodic features to draw attention to specific language features ● When the children are quite familiar with the book, the clinician stops at points containing target language structures and prompts the children to supply the appropriate words, phrases, or sentences ● There is some evidence that joint book reading promotes language and literacy skills in children ● It is also helpful if the clinician who is reading engages in print referencing
Narrative skills training	● Narratives are speakers' descriptions of events and experiences and should be produced in cohesive, logically consistent, temporally sequenced manner ● Narratives are part of pragmatic language skills ● Several strategies may be used to teach pragmatic narrative skills: o let the children act out the stories o use scripts based on such events as grocery shopping, birthday parties, eating in a restaurant, etc. Have the children play out the scripts (actions), including verbal exchanges □ this method is known to be effective o use video modeling in which videotapes interactions between two or more children with normal language skills are shown; have the child who needs to learn those skills watch and then imitate the actions, including verbal interactions; fade the video modeling □ this method is known to be effective o use the peer-training method to teach advanced language skills, including narrative skills; let the child's peer model reinforce language skills in the child; this may be an excellent way of promoting generalized production and maintenance □ this method is known to be effective o get children involved in routinized, daily activities (e.g. discussing the calendar and the weather) o repeatedly tell or read the same stories so that the children memorize the characters, events, words, and temporal sequences

	○ pause before important phrases or descriptions when retelling stories, so that children can supply them ○ ask children to narrate new events or experiences (not rehearsed or scripted) ○ use such effective procedures as instructions, modeling, prompting, positive reinforcement, and corrective feedback; merely organizing situations may not be effective
Story Grammar	● Clinicians can teach and model the following elements of story grammars within the script therapy format known to be effective ○ setting statements (the introduction to the story, the physical setting, the characters, the temporal context) ○ initiating events (episodes that begin the story) ○ internal response (the characters' thoughts, emotions, reactions) ○ theme of the story (main idea) ○ goals of the characters (what the characters are trying to accomplish) ○ attempts (actions the characters take to achieve their objectives) ○ direct consequences (results of actions) ○ conclusion (how everything turns out, lessons or morals learned from the story)
Parallel Talk	● Clinician plays with the child and describes and comments upon what the child is doing and the objects the child is interested in ● Effectiveness of this procedure needs to be established
Recasting	● Recasting the child's limited productions into longer or syntactically different forms can be useful in teaching complex grammatical forms ● Child's own sentence is repeated in modified form, but the clinician changes the modality or voice of the sentence rather than simply adding grammatical or semantic markers ● Example: the child says, "The baby is hungry," and the clinician asks, "Is she hungry?" ● Effectiveness of mere recasting needs to be established; however, if the clinician asks the child to imitate the recast and modeled sentences, reinforces correct imitations, provides corrective feedback for incorrect responses, fades the modeling, and so forth, the clinician will have used techniques known to be effective
Reauditorization	● Clinician repeats what the child says during language-stimulation activities ● Example: child says, "Am swinging;" and the clinician repeats, "Am swinging." ● Effectiveness of this procedure has yet to be established
Self-talk	● Clinician describes her own activity as she plays with the child ● Effectiveness of this procedure has yet to be established
Whole-Language Approach	● This philosophical approach holds that learning written language should be like learning oral language □ children learn literacy by being immersed in a literate environment, communicating through print, and getting supportive feedback ● No controlled evidence to support use of whole-language approach; available evidence is negative
Teaching Literacy Skills	● Integrating literacy instruction with language treatment is efficient for SLPs ● Clinician should collaborate with teachers and family members ● Clinician should use printed words that accompany pictorial and other stimuli used in teaching words, phrases, and sentences; while modeling oral productions, the clinician should point to the corresponding printed words, phrases, or sentences
Basic Principles of AAC	● The current approach is to use the revised participation model, which requires clinicians to: ○ identify communication needs of an individual through a participation inventory ○ assess barriers to communication imposed by others (e.g. unhelpful policies and practices) ○ assess access barriers (current limitations of the client) ○ assess the client's motor, language, literacy, and other capabilities ● AAC devices can be *low-* or *high-tech* ● When AAC users want to communicate messages, they use *displays*, which are systems or devices that show the message to their communication partner ● Symbols used by AAC users may be *iconic* or *non-iconic* ○ *Iconic* symbols look like the object or picture they represent ○ *Non-iconic* symbols do not resemble the objects they represent and must be specifically taught

	● Regardless of the type of AAC device used, users of the device send messages through two means: direct selection and scanning o In *direct selection* the user selects a message by touching a keypad, touching an item or object, depressing an electronic key, pointing, or some other direct means o In *scanning*, the user is offered available messages by a mechanical device or communication partner; the messages are offered sequentially until the AAC user indicates the messages he or she wants to communicate ● Clinicians can help children to learn the AAC device in a variety of settings outside the treatment room ● A team approach is very important
Gestural (Unaided) AAC	● No instruments or external aids are used; the child uses gestures and other patterned movements, which may be accompanied by some speech ● Widely used current gestural (unaided) forms of AAC are described as follows: o *Pantomime* mostly uses gestures and dynamic movements that involve the entire body or parts of the body. The child uses transparent messages, facial expressions, and dramatizations of meanings. ▪ *Transparent* messages are those that are likely to be understood with no additional cues by an observer without special training ▪ *Opaque* messages are not easily decipherable o *Eye-blink encoding* is a simple system in which the child learns to communicate a message by a specific number of blinks (e.g. one blink means NO; two blinks means YES) o *American Indian Hand Talk* (AMER-IND) is a sign-language system developed by North American Indians; it is not phonetic, rather, gestures and movements are used as pictorial representations of concepts and ideas o *American Sign Language* (ASL) consists of manual signs for the 26 letters of the alphabet as well as signs for words and phrases; recognized as a separate language, ASL may be used alone or with oral speech o *Limited manual sign systems* are composed of several different systems with a limited number of gestures and sign; often used by patients in medical settings to communicate self-care and other basic needs, and to say YES and NO o *Left-hand Manual Alphabet* is composed of concrete gestures that approximate printed letters of the alphabet; it is most appropriate for people with right-sided paralysis
Gestural-Assisted (Aided) AAC	● Gestures or movements are combined with an instrument or message-display device ● Gestures are used: o to display messages on a mechanical device such as a computer monitor o to scan or select messages displayed on a non-mechanical device such as a communication board ● Messages on both mechanical and non-mechanical devices take various forms. Seven common types of symbols are used: o *picsyms* are graphic symbols that represent nouns, verbs, and prepositions o *pic symbols* (pictogram ideogram communication) are white drawings on a black background o *blisssymbols* are semi-iconic and abstract symbols hat can be taught to speakers of any linguistic and cultural background o *sig symbols* are ideographic or pictographic symbols based on ASL and often used in conjunction with ASL o *rebuses* are pictures that represent events or objects along with words, grammatical morphemes, or both o *Premack-type symbols,* or *carrier symbols*, are abstract plastic shapes; each shape is associated with a word or phrase, and children may arrange the plastic shapes as one would printed words o *Picture Exchange Communication System* (PECS) is a low-tech-aided method of communication that is known to be effective ▪ the clinician initially teaches the child to exchange specific pictures to communicate with a partner ▪ it is known that PECS eventually promotes spontaneous verbal expressions as well

Neuro-Assisted (Aided) AAC	● Useful for children who have such profound motoric impairments and limited hand mobility that they cannot use a manual switching device ● Uses bio-electrical signals such as muscle-action potentials to activate and display messages on a computer monitor ● The electrical activity of the muscles associated with their contraction is used to activate switching mechanisms; electrodes attached to the child's skin pick up electrical discharges that are then amplified so they can activate special kinds of switches (called *myoswitches*) or specific displays ● User receives feedback when a switch or display is activated user then learns, through biofeedback, to use muscle-action potentials for activating messages