MID Term= P(1-77)

Psycholinguistics (ENG511)

VIRTUAL UNIVERSITY OF PAKISTAN

Table of Contents

Lesson-01

INTRODUCTION TO PSYCHOLINGUISTICS

Topic- 001: Introduction to Psycholinguistics

Psycholinguistics is the study of how individuals comprehend, produce, and acquire language. The study of psycholinguistics is part of the field of cognitive science. Cognitive science reflects the insights of psychology, linguistics, and, to a lesser extent, fields such as artificial intelligence, neuroscience, and philosophy. Psycholinguistics stresses the knowledge of language and the cognitive processes involved in ordinary language use. Psycholinguists are also interested in the social rules involved in language use and the brain mechanisms associated with language. Contemporary interest in psycholinguistics began in the 1950s, although important precursors existed earlier in the 20th century.

Topic-002: The Nature of Language: Psycholinguistics

Language in general is important not only because it distinguishes human beings from all other animals on the earth but because, directly or indirectly, it makes possible the elaborate organization of a civilized society and language in general is interesting because although everyone knows and uses a specific language, few people understand what they know. Becoming self-consciously aware of what is known unself-consciously carries a special brand of excitement.

The psychology of language deals with the mental processes that are involved in language use. Three sets of processes are of primary interest: language comprehension (how we perceive and understand speech and written language), language production (how we construct an utterance), and how people use language. A few things play as central a role in our everyday lives as language. It is our most important tool in communicating our thoughts and feelings to each other. Infants cry and laugh and their facial expressions surely give their parents some notion of the kinds of emotions they are experiencing, but it is not until children are able to articulate speech that we gain much understanding of their private thoughts. As we grow, language comes to serve other functions as well. Most young people develop jargon that is more meaningful to those of the same age than to older or younger individuals. The diversity of how we use language is daunting for psychologists who wish to study language. An important consideration is that although language is intrinsically a social phenomenon, psychology is principally the study of individuals.

Topic-003: The Scope of Psycholinguistics

Psycholinguistics is part of the emerging field of study called cognitive science. Cognitive science is an interdisciplinary venture that draws upon the insights of psychologists, linguists, computer scientists, neuroscientists, and philosophers to study the mind and mental processes. Some of the topics that have been studied by cognitive scientists include problem solving, memory, imagery, and language. Anyone who is seriously interested in any of these topics must be prepared to cross disciplinary lines, for the topics do not belong to any one field of study but rather are treated in distinctive and yet complementary ways by various disciplines. As the name implies, psycholinguistics is principally an integration of the fields of psychology and linguistics. Linguistics is the branch of science that studies the origin, structure, and use of language. Like most interdisciplinary fields; however, psycholinguistics has a rich heritage that includes contributions from diverse intellectual traditions.

Topic-004: Language Processes and Linguistic Knowledge

At its heart, psycholinguistic work consists of two questions. One is, what knowledge of language is needed for us to use language? In a sense, we must know a language to use it, but we are not always fully aware of this knowledge. A distinction may be drawn between tacit knowledge and explicit knowledge. Tacit knowledge refers to the knowledge of how to perform various acts, whereas explicit knowledge refers to the knowledge of the processes or mechanisms used in these acts. We sometimes know how to do something without knowing how we do it. For instance, a baseball pitcher might know how to throw a baseball 90 miles an hour but might have little or no explicit knowledge of the muscle groups that are involved in this act. Similarly, we may distinguish between knowing how to speak and knowing what processes are involved in producing speech. Generally speaking, much of our linguistic knowledge is tacit rather than explicit.

Four broad areas of language knowledge may be distinguished. Semantics deals with the meanings of sentences and words. Syntax involves the grammatical arrangement of words within the sentence. Phonology concerns the system of sounds in a language. Pragmatics entails the social rules involved in language use. It is not ordinarily productive to ask people explicitly what they know about these aspects of language. We infer linguistic knowledge from observable behavior. The other primary psycholinguistic question is, what cognitive processes are involved in the ordinary use of language? Ordinary use of language means such things as understanding a lecture, reading a book, writing a letter, and holding conversation. Cognitive processes mean processes such as perception, memory, and thinking. Although we do few things as often or as easily as speaking and listening, we will find that considerable cognitive processing is going on during those activities.

Topic-005: The Historical Context

The history of psycholinguistics can be divided into two periods of interdisciplinary activity separated by several decades of behaviorism. The first period was dominated by Wundt who presented a cognitive view of language. The behaviorist position later held that verbal behavior can be explained in terms of environmental contingencies of reinforcement and punishment. This view was criticized by Chomsky, leading to a second wave of psycholinguistic activity. This period was characterized by an effort to incorporate linguistic theory in psychological research as well as by the view that innate linguistic mechanisms are necessary to explain child language acquisition. Psycholinguistics is presently a more diverse field of study that draws insights and methodologies not only from psychology and linguistics but also from adjacent fields of study.

In this section, some historical developments in the study of psycholinguistics are considered. Blumenthal has observed that the interdisciplinary field of psycholinguistics flourished twice: once around the turn of the last century, principally in Europe, and once in the middle of the 20th century, principally in the United States. In both instances, it was a somewhat asymmetrical marriage of disciplines. In the early decades of the 20th century, linguists turned to psychologists for insights into how human beings use language. In the later period, psychologists turned to linguists for insights into the nature of language. In between these two periods, behaviorism dominated both fields, each of which practiced a form of benign neglect toward one another.

Topic-006: Early Psycholinguistics

When we turn around the time, we find Wilhelm Wundt as a major figure in early scientific psychology. He wrote about different aspects of language with a focus on grammar, phonology, language comprehension, first language acquisition, sign language, reading as well as other topics related to contemporary concern. Out of many other contributions towards language psychology, his major contribution is to develop theory of language production.

In his theory of language production, he has regarded sentence as the core unit of language instead of a word. He considered speech production as the transformation of a complete thought process into sequentially organized speech segments. After his theory, the interest of researchers continued, to investigate the speech production from both perspectives i.e. word by word process and whole sentence process.

The second period of interdisciplinary psycholinguistics really took hold in the late 1950s, beginning with the emergence of the linguist Noam Chomsky. Chomsky has also played a powerful role in how psychologists perceived language because he argued that the behaviorists' accounts of language were inadequate. Major concerns presented in that period consist of associative chain theory, discontinuous constituents, and poverty of stimulus.

Lesson-02

THE CONNECTION BETWEEN PSYCHOLINGUISTICS & NEUROLINGUISTICS

Topic-007: The Information-Processing System

The general strategies by which the human mind encodes, stores, and retrieves information can be described independently of language. Working memory provides a temporary repository of information that is relevant for ongoing cognitive tasks. It is divided into three components: the central executive, the phonological loop, and the visuo spatial sketchpad.

Long-term memory is divided into semantic memory and episodic memory. Semantic memory holds general knowledge, whereas episodic memory stores our experience from our personal perspective. Studies of individuals with various forms of brain damage suggest that these memory systems are controlled by distinct regions in the brain. These concepts provide a framework for understanding how language processing occurs. Although it is generally agreed that we encode, store, and retrieve linguistic information along the general lines sketched here, the specific processes have yet to be addressed. We now turn our attention to these processes in the next section.

Topic-008: Working Memory and Long Term Memory

Working memory: Working memory is only able to hold about seven units of information. This could simply be seven words, but because many sentences are longer than this, we need some way to deal immediately with more than seven words. One way we do this is to chunk the words into grammatical constituents such as noun and verb phrases, thereby reducing the storage burden to perhaps two or three constituents. The processing function of working memory is used to organize the words into the constituents.

Long-term memory: Long term memory is defined as a memory structure that holds permanent knowledge. Tulving suggests that we should distinguish between two aspects of long-term memory, episodic memory and semantic memory. In the original formulation, episodic memory dealt with personally experienced facts and semantic memory dealt with general facts. For example, most people know that John Wilkes Booth killed Abraham Lincoln, and thus this fact is a part of our semantic memory. But if you happen to remember when and where you were when you first learned this information (for example, your fourth-grade class), this personal event is a small part of your episodic memory.

Topic-009: Central Issues in Language Processing

Serial processing: Serial processing is when one process is completed before the next starts.

Parallel processing: Parallel processing is a very different possibility which says that some or all of the processes involved in a cognitive task occur at the same time.

Parallel distributed processing: Parallel distributed processing deals with one problem with parallel processing; these processes operate simultaneously but independently of each other. In parallel

distributed processing (PDP), cognitive processes operate at the same time and connections between them also influence the final outcome. This approach is also referred to as Connectionism.

Bottom-up processing*:* Bottom-up processing proceeds from the lowest level to the highest level of processing.

Lower level processing*:* Lower levels of processing operate without influence from the higher levels.

Top-down processing*:* A top-down processing model, in contrast, states that information at the higher levels may influence processing at the lower levels. For instance, in a sentence context may affect the identification of words within that sentence.

Topic-010: Examples of Language Processing

a) "I was afraid of Ali's powerful *punch*, especially since it had already laid out many tougher men who had bragged they could handle that much alcohol." (from Clark & Clark, 1977, p. 81)
b) The key word here is punch, which can mean either an alcoholic beverage or a boxing punch.
c) The subjective impression for most people at the end of the sentence is having assumed the wrong meaning and then backtracking.
d) One meaning at a time, with top-down processing playing only a limited role (decision is based on the immediate context, not the entire sentence).
e) However, the retrieval of multiple meanings is a fixed property of the lexicon— that it is automatic, modular, and not related at all to the sentence context (that is, it is bottom-up).
f) Two stages of processing may exist: an automatic stage in which all meanings are retrieved and a more controlled stage that is more top-down in nature.

Topic-011: Development of Processing System

Stage 1: Input
The brain is exposed to a stimulus, at which point it analyzes and evaluates the information. For example, the online learner reads a passage and determines whether it's worth remembering.
Stage 2: Storage
Our brains store the information for later use. It also adds it to our mental schema and encodes it. If the information is not reinforced, the brain may simply forget it over time.
Stage 3: Output
The brain decides what it's going to do with the information and how it will react to the stimulus. For example, after reading the passage, the individual uses the information they learned to overcome a challenge.

Topic-012: Developing Working and Long Term Memory

Working memory is only able to hold about seven units of information. This could simply be seven words, but because many sentences are longer than this, we need some way to deal immediately with more than seven words. One way we do this is to chunk the words into grammatical constituents such as noun and verb phrases, thereby reducing the storage burden to perhaps two or three constituents. The processing function of working memory is used to organize the words into the constituents. Long-

term memory plays several roles. Semantic memory contains information on the speech sounds and words that we retrieve during pattern recognition. And while this process is going on, we are also building up an episodic memory representation of the ongoing discourse. That is, once we complete the processing of a given sentence, we might extract the gist of it and store that in episodic memory.

Lesson-03

LANGUAGE COMPREHENSION

Topic-013: Perception of Language

Speech perception is a product of innate preparation (nature) and sensitivity to experience (nurture) as demonstrated in infants' abilities to perceive speech. Research on the acoustics of speech (i.e., how sound is produced by the human vocal tract) demonstrated how certain physiologic gestures used during speech produce specific sounds and which speech features are sufficient for the listener to determine the phonetic identity of these sound units. Studies of infants from birth have shown that they respond to speech signals in a special way suggesting a strong innate component to language. Other research has shown the strong effect of environment on language acquisition by proving that the language an infant listens to during the first year of life enables the child to begin producing a distinct set of sounds (babbling) specific to the language spoken by its parents. "The Native Language Magnet (NLM)" "Bottom-up" and "Top-down" processes are also used to understand speech: in the former, we receive auditory information, convert it into a neural signal. and process the phonetic feature information. In the latter, we use stored information about language and the world to make sense of the speech. Perception occurs when both sources of information interact to make only one alternative plausible to the listener who then perceives a specific message.

Topic-014: The Structure of Speech

The process of speech perception seems simple enough. Listeners must, in effect, categorize the sounds that they hear into one of the many classes of sounds that exist in their language. In fact, the task is an extraordinarily complex one, for two major reasons. First, the environmental context often interferes with the speech signal. Under normal listening conditions, the speech we hear competes with other stimuli for our limited processing capacity. Other auditory signals, such as a conversation across the room or someone's sneezing or burping can interfere with the fidelity of the speech signal.

Topic-015: Perception of Isolated Speech Segments

At the auditory level, the signal is represented in terms of its frequency, intensity, and temporal attributes, as with any auditory stimulus. At the phonetic level, we identify individual phones by a combination of acoustic cues such as formant transitions. At the phonological level, the phonetic segment is converted into a phoneme, and phonological rules are applied to the sound sequence.

Topic-016: The Motor Theory of Speech Perception

Liberman and his colleagues developed a theory of speech perception based on the notion that perception proceeds 'by reference' to production. Listeners use implicit articulatory knowledge—knowledge about how sounds are produced—as an aid in perception.

The main rationale for the motor theory is that it deals effectively with the lack of invariance and it argued that although the relationship between acoustic structure and perception is quite complex, sounds are produced in similar ways but with varying acoustic representations and are perceived in similar ways. Anecdotal evidence suggests that teaching students to produce sounds silently aids them in

the identification of new sounds. The theory makes some testable claims about the brain mechanisms underlying language.

The areas responsible for language perception and production are distinct and separate and the motor theory would expect a closer neurological link between these functions. Ojemann provided some support for the idea that the perception and production areas of the brain are closely related. The theory has some interesting implications regarding language acquisition that infants can hear certain phonetic distinctions well before they are able to produce them. The phonetic module, which links these perceptual and productive skills, may be an important innate mechanism in the acquisition of language; the motor theory has been a useful theory.

Topic-017: Perception of Continuous Speech

The perception of continuous speech clearly indicates that word recognition is influenced by prosodic factors such as stress and intonational patterns. In addition, we learned that there is a continuous interplay of bottom-up and top-down factors at work. We recognize words in part because we identify their constituent phonemes and in part because of the larger word, sentence, or discourse context.

Topic-018: Perception of Written Language

Written language is processed at three levels: feature level, letter level and word level. At the feature level, the stimulus is represented in terms of the physical features that comprise a letter of the alphabet. For instance, the letter K may be represented as a vertical line and two diagonal lines; R may be coded as a vertical line, a diagonal line, and a curved portion; and so on. At the letter level, the visual stimulus is represented more abstractly as an identity separate from its physical manifestation. That is, a stimulus may be represented as an F regardless of whether it is typewritten or handwritten. Finally, there is a word level of processing, in which an array of features and letters is recognized as a familiar word. As the word is recognized, various properties of the word, such as its spelling, pronunciation, meaning, become available to us.

Lesson-04

DIMENSIONS OF WORD KNOWLEDGE

Topic-019: Phonological Knowledge

One part of our word knowledge is the phonological structure or pronunciation of words. For example, we know when two words are homophones, which are words that are spelled differently but sound alike (such as bare and bear). Similarly, we experience the tip-of-the-tongue (TOT) phenomenon when we are not quite successful at retrieving a particular word but can remember something about how it sounds. The phenomenon has been described vividly by William James: suppose we try to recall a forgotten name. The state of our consciousness is peculiar. There is a gap therein, but no mere gap. It is a gap that is intensely active. A sort of wraith of the name is in it, beckoning us in a given direction, making us at moments tingle with the sense of our closeness, and then letting us sink back without the longed for term. If wrong names are proposed to us, this singularly definite gap acts immediately so as to negate them. They do not fit into its mould. And the gap of one word does not feel like the gap of another, all empty of content as both might seem necessarily to be when described as gaps. . The rhythm of a lost word may be there without a sound to clothe it, or the evanescent sense of something which is the initial vowel or consonant may mock us fitfully, without growing more distinct. The TOT phenomenon was systematically studied for the first time by Brown and McNeill, who presented definitions of infrequent words, such as sextant, and asked subjects to produce the defined word. When subjects were in the TOT state, they retrieved but rejected similar-sounding word such as secant. Thus, we sometimes activate words by their sounds. When we make speech errors, we sometimes substitute a similar sounding word for the intended word.

Topic-020: Phonological Knowledge: Conceptual and Empirical Issues

Conceptual and empirical issues address the most central question i.e. 'Is phonological knowledge different from linguistic knowledge in general?' Burton-Roberts, Carr, and Docherty have recently shown that there are at least four main views concerning the goals and methods of phonological theory, and thus of phonological knowledge. Given the generally held assumption that phonological knowledge is intrinsic to linguistic knowledge, there are at least four different ways in which the various issues pertaining to the nature of investigation of phonological knowledge are envisaged and elaborated upon. We can call these views as:

(a) Isolative

(b) Functional

(c) Formal

(d) Integrational or Unified

The Isolative view, held by Bromberger and Halle, and endorsed by Chomsky considers phonology to be different from the rest of the language faculty, in belonging to the Periphery rather than the Core. The Functional View, in contrast to the Isolative view, held by Burton-Roberts, and supported by the work of Ohala, Lindblom, Bybee, and Hayes, among others, considers phonology to be grounded

in the sensorimotor apparatus. The Formal view of phonology, represented by Hale and Reiss, and supported by the research on sign language phonology, considers phonology to be like the rest of language faculty, and to be grounded in the mind. While the extreme view represented by Hale and Reiss excludes phonetic substance entirely from phonology, other versions of this approach debate concerning the inclusion of phonetic substance in phonology. Finally, the Unified view, held by Pierrehumbert, Beckman, and Ladd, considers phonology to be a laboratory science, and argues for the adoption of scientific methodology to test formal claims. This approach seeks a bind between phonology, psycholinguistics, and sociolinguistics.

Topic-021: Syntactic Knowledge

Our knowledge of words is the syntactic category, or part of speech, to which they belong. Two words belong to the same syntactic category when they can substitute for one another in a sentence. E.g.

(1) The aging pianist stunned the audience.

We can replace aging with any number of words, such as wealthy, poor, fat, solemn, and so on. Although the substitutions may change the meaning of a sentence, the sentence remains grammatical. One advantage of using syntactic categories is that we can formulate grammatical rules in terms of categories rather than lexical items. Thus, we have no rule that states that aging may appear before pianist in a sentence. The rule is that adjectives may modify nouns. To use such a rule, we need to include syntactic categories in the lexical entries in our mental lexicon.

- One class word
- Two class word

Traditionally, grammatical theory has recognized the syntactic categories of noun, verb, adjective, adverb, pronoun, preposition, conjunction, and interjection. From a psychological vantage point, these categories may be placed into two groups. Open-class words (sometimes called content words) include nouns, verbs, adjectives, and adverbs, and closed-class words (also called function words) include determiners, pronouns, prepositions, conjunctions, and interjections. We have all learned a large number of open-class words, and that number continues to grow. In contrast, closed-class words are much smaller in number—a few hundred in English—and are used over and over.

Neurologists have found that some patients suffer from a condition called agrammatism. Agrammatic patients frequently omit closed-class words (and inflectional endings; see the later discussion) from their sentences while preserving open-class words somewhat better. In addition, they process closed-class words differently than individuals without neurological damage.

Topic-022: Children's Acquisition of Syntactic Knowledge

Children babble, pass through a single and multiword stage, and then start to produce entire sentences that increase in complexity. Exactly what knowledge base, if any, and what mechanisms drive this progression in the language acquisition process is a matter of controversy. The challenge for language acquisition researchers is to reveal how this process unfolds. Two current approaches to the problem of language acquisition are introduced.

One theory of language acquisition follows the theory of Universal Grammar advanced by Noam Chomsky. This is often called the generative approach to language acquisition. This theory takes as a basic assumption that children are 'hardwired' with linguistic knowledge that gives them access to structural representations in the absence of experience.

The second approach is the usage-based account of language acquisition. This is the constructivist approach promoted by Elena Lieven, Michael Tomasello, and others. Language acquisition researchers working within this framework argue that children learn sentence structure through experience. The usage-based constructivist theory assumes that the child has no specialized knowledge of language or syntax, and must learn this, on the basis of positive input alone. This is a slow process, because children must gradually build up knowledge of the constructions permitted in the language.

Chomsky proposed that in order to establish how language is represented in the mind/brain of speakers, three questions need to be addressed:

1) What constitutes knowledge of language?

2) How knowledge of language is acquired?

3) How knowledge of language is put to use?

As will become clear, generative and usage-based linguistic theories have different ideas about what constitutes the representation of language, and syntax in particular, in the mind. The theories also depart in their perspective on whether acquisition of language is guided partly by innate knowledge or whether all knowledge of language is learned through experience. This is often known as the 'nature' versus 'nurture' controversy. Although it is of interest to record how language is used in context.

A widely shared assumption is that exposure to language and interaction with speakers in a language community is essential for acquisition to proceed. Speakers of the language, that is, caretakers, siblings and so on, provide linguistic input to the child in the form of utterances and their corresponding meanings. This is known as 'positive input.' The fact that positive input is essential for language acquisition to proceed is not disputed. The dispute among language acquisition researchers is whether positive evidence alone is sufficient for children to achieve mastery of the adult grammar.

Topic-023: Morphological Knowledge

Any effort to identify vocabulary size will eventually have to confront the morphology of the language. Morphemes are the smallest unit of meaning in a language. Some words consist of just a single morpheme. Morphemes that are also words are called free morphemes. Bound morphemes are those that are attached to free morphemes to create new words. There are, in fact, two different kinds of bound morphemes to consider. Inflectional morphemes are involved when a bound morpheme is added to a free morpheme to express grammatical contrasts in sentences. Inflectional morphemes in English include the plural morpheme for nouns (cat/cats) and the past tense morpheme for verbs (jump/jumped). In contrast, derivational morphemes are involved when bound morphemes, added to free morphemes, create new words. For example, -ness turns good (an adjective) into goodness (a noun). Other derivational morphemes change not only the syntactic category but also our pronunciation. For example, the

derivational morpheme -ion changes decide (a verb) into decision (a noun). Notice also that –ion changes our pronunciation: The second /d/ in decide becomes the /s¢/ in decision. When a word contains both inflectional and derivational morphemes, the derivational morphemes are applied first. Consider the word neighborhoods. The root word is neighbor, and both the derivational morpheme -hood and the inflectional morpheme -s are applied to the root. The derivational is applied first, so the resulting word is neighborhoods, not neighbors hood.

Getting back to vocabulary size, our ability to form various alternative forms of root words effectively means that there is no limit to the number of new words in a language. How, then, do we estimate the size of a person's mental lexicon? For simple cases, such as the plural morphemes, it could be assumed that a person who knows book will also recognize books as a word. So, book and books should count as just one word. Other morphemes, such as -er, cause more problems. In some cases, the morpheme produces a predictable shift in meaning, as in run and runner. But in other cases, the meaning is opaque, as in tell and teller. Using this criterion— whether it would be possible to determine the meaning of a word with a morpheme by knowing its root—it is possible to estimate that the average high school graduate knows about 45,000 words. The number is likely somewhat higher in college graduates and for those who do a lot of reading.

Topic-024: Evaluating the Effectiveness of a Morphological Awareness Intervention

Intervention should begin with an introduction of the concept of morphology and provision of many relevant examples. This introduction should include an emphasis on the importance of morphology, explanation of target patterns (i.e., inflectional or derivational), and provision of multiple examples. Depending on the grade and cognitive level of the student, the jargon terminology may be taught directly (e.g., derivative, suffix), or it may be preferable to teach and use simpler terms (e.g., base word, word ending). The rationale should be provided that students will learn about morphemes to increase their vocabulary skills and/or to become better readers and spellers. For example, if a student is struggling with derivational morphology, we would begin with the explanation that there are base (root) words to which affixes, or word beginnings or endings, can be added to change meaning. A base word can stand all by itself and tells us what the word is about—it is the "power" of the word.

Goodwin and Ahn found morphological awareness instruction to be particularly effective for children with speech, language, and/or literacy deficits. School-age children who received explicit morphological awareness instruction appeared not only to improve significantly in the linguistic areas of phonological awareness, morphological awareness, and vocabulary knowledge, but also in the related literacy areas of reading and spelling.

Given the theoretical and empirical support, along with the possibility that base words and their affixes are not necessarily being systematically taught in the school setting, it appears morphological awareness instruction offers an opportunity to facilitate language and literacy success for elementary school-age children. Several features of morphological awareness instruction have consistently been found to be effective with children with language and literacy deficits. These include the integration of problem solving or a motivating "detective" theme, the explicit focus on morphological meaning units, and the incorporation of morphological awareness in contextual or language-/literacy-related instruction.

Individualized morphological awareness instruction that integrated a problem-solving detective theme and included an explicit focus on morphology in a contextualized manner appeared to improve the language and literacy skills of an eight-year-old boy with speech, language, and literacy deficits. Clinically significant improvements were found in the areas of phonological awareness, vocabulary, and reading comprehension. Reading accuracy improved (evidenced by a miscue analysis) and the specific application of morphological awareness skills in spelling appeared to improve as well.

Instruction in morphological awareness improves phonological awareness and may provide an opportunity to facilitate success in skills such as vocabulary comprehension. Instruction in morphological awareness may improve phonological awareness because morphologically based instruction incorporates the awareness of phonemes or sounds by linking this information to meaning. For example, when speaking of the relationship between the words music and musician, the base word music is used to ascertain the meaning of the derived form musician, despite the shift in phonology or pronunciation of the letter c from /k/ to / ʃ/ in the derived form. Thus, morphological awareness, or a focus on meaning, may help to mediate or scaffold a child's understanding of the phonological relationship between words. Just as morphological awareness may provide a bridge to phonological awareness learning, morphological awareness instruction is thought to mediate and facilitate vocabulary acquisition which, in turn, may facilitate reading comprehension.

Explicit vocabulary instruction based in morphological awareness may be especially important for children with language and literacy deficits. Vocabulary plays a fundamental role in a child's ability to communicate and read, and the vocabulary skills of typically developing students' likely increase when they apply morphological awareness while reading and spelling. A link to reading and spelling provides a functional context for students to apply their newly learned morphological awareness skills.

Intervention should focus on both the recognition of meaning and patterns in words and include production activities such as word building. Moreover, a link to reading and spelling provides a functional context for students to apply their newly learned morphological awareness skills. Based on the research based evidence, it was found that morphological awareness instruction linked to literacy might improve not only school aged children's ability to identify morphological relationships between words but also their vocabulary, phonemic awareness, reading decoding, and potentially reading comprehension skills.

Lesson-05

ORGANIZATION OF THE INTERNAL LEXICON

Topic-025: Semantic Knowledge

What is meaning? What is it that we know when we know the meaning of a word? And how is that meaning represented mentally? Linguists, philosophers, and psychologists have identified several important aspects of word meaning. Let us begin by looking at some of these distinctions.

Sense and Reference

The relationship between words and things in the world is termed as the reference of a word; the things in the world are called the referents of the word. This aspect of meaning is crucial for determining whether or not a given utterance is truthful. For instance, consider sentence (2):

(2) There is a brown cow grazing in the field.

When we understand the meaning of this sentence, then we grasp its truth conditions, the conditions under which the sentence may be said to be true. In this instance, there must be a cow, it must be brown, and it must be grazing in the field. That is, we must assess whether the events in the world correspond to the referents of the words cow, brown, grazing, and field. Reference concerns what the world should be like if a given utterance is true. Not all references are so easy. Some words clearly have meaning, but it is difficult to know what they refer to. This group includes abstract words, such as justice, plausibility, and relativity.

Meaning is developed through following ways:

- Synonymy
- Hyponymy
- Meronymy
- Taxonomic Relation
- Attributive Relations
- Functional Relations
- Denotation
- Connotation

Topic-026: The Concept of a Semantic Network

A semantic network or net is a graphic notation for representing knowledge in patterns of interconnected nodes and arcs. Computer implementations of semantic networks were first developed for artificial intelligence and machine translation, but earlier versions have long been used in philosophy, psychology, and linguistics.

What is common to all semantic networks is a declarative graphic representation that can be used either to represent knowledge or to support automated systems for reasoning about knowledge. Some

versions are highly informal, but other versions are formally defined systems of logic. Following are six of the most common kinds of semantic networks, each of which is discussed in detail in one section of this handout.

A **definitional network** emphasizes the subtype or is-a relation between a concept type and a newly defined subtype. The resulting network, also called a generalization or subsumption hierarchy, supports the rule of inheritance for copying properties defined for a super type to all of its subtypes. Since definitions are true by definition, the information in these networks is often assumed necessarily true.

Assertional networks are designed to assert propositions. Unlike definitional networks, the information in an assertional network is assumed contingently true, unless it is explicitly marked with a modal operator. Some assertional networks have been proposed as models of the conceptual structures underlying natural language semantics.

Implicational networks use implication as the primary relation for connecting nodes. They may be used to represent patterns of beliefs, causality, or inferences.

Executable networks include some mechanism, such as marker passing or attached procedures, which can perform inferences, pass messages, or search for patterns and associations.

Learning networks build or extend their representations by acquiring knowledge from examples. The new knowledge may change the old network by adding and deleting nodes and arcs or by modifying numerical values, called weights, associated with the nodes and arcs.

Hybrid networks combine two or more of the previous techniques, either in a single network or in separate but closely interacting networks.

Some of the networks have been explicitly designed to implement hypotheses about human cognitive mechanisms, while others have been designed primarily for computer efficiency. Sometimes, computational reasons may lead to the same conclusions as psychological evidence. The distinction between definitional and assertional networks, for example, has a close parallel to distinction between semantic memory and episodic memory.

Topic-027: Hierarchical Network Models

A semantic network is an interconnected web of concepts connected by various relations. In the hierarchical network model, we store our knowledge of words in the form of a semantic network with some words represented at higher nodes in the network than others. Although the hierarchical network model can explain some results, it is too rigid to capture all of our tacit knowledge of the lexicon.

Topic-028: Spreading Activation Models

Spreading activation models are network models that are not strictly hierarchical. Activation spreads from one node to neighboring nodes. Spreading activation models of the lexicon that incorporate

conceptual, syntactic, and phonological knowledge appear to offer the most realistic picture currently available of the internal lexicon.

Topic-029: Advantages and Disadvantages of Semantic Differential Scale

Osgood's Semantic Differential was an application of his more general attempt to measure the semantics or meaning of words, particularly adjectives, and their referent concepts. The respondent is asked to choose where his or her position lies on a scale between two polar adjectives (for example: "Adequate-Inadequate", "Good-Evil" or "Valuable-Worthless"). Semantic differentials can be used to measure opinions, attitudes, and values on a psychometrically controlled scale.

Osgood and his colleagues performed a factor analysis of large collections of semantic differential scales and found three recurring attitudes that people use to evaluate words and phrases: evaluation, potency, and activity. Evaluation loads highest on the adjective pair 'good-bad'. The 'strong-weak' adjective pair defines the potency factor. Adjective pair 'active-passive' defines the activity factor. These three dimensions of affective meaning were found to be cross-cultural universals in a study of dozens of cultures.

The Semantic Differential question scale offers a bipolar pair of adjectives between which the respondent must choose along some form of scaling (typically a five-point scale). The pairs of words need not be opposite and may be used to discover fine differences in viewpoint. They are often adjectives.

Topic-030: Semantic Barriers

The meaning of words, signs, and symbols might be different from one person to another and the same word might have hundreds of meanings. So, when a message is sent by a sender to a receiver, it might be interpreted wrongly in a communication process causing misunderstandings between them. This can happen due to different situations that form the semantic (of, relating to, or arising from the different meanings of words or other symbols) of the sender and the receiver, known as the **semantic barrier**. It also arises due to language, education, culture, and place of origin (dialect or accent) or most likely their experiences.

Lesson-06

LEXICAL ACCESS

Topic-031: Models of Lexical Access

Lexical access is an area in psycholinguistics research that studies the activation or retrieval process of the mental lexicon for people who can speak two languages.

Lexical retrieval is the process of getting from an abstract concept to a spoken word. There are two major classes of models that detail how lexical entries are retrieved during reading and listening tasks. The first types of models are known as serial search models, whereas the second type of models are parallel access models.

Serial search models believe that when we encounter a word, we look through all lexical entries to determine whether the item is a word or not and then retrieve the necessary information about a word (i.e., its semantics or orthography). Serial search models propose that lexical access occurs by sequentially scanning one lexical entry at a time.

Search Models: One of the earliest and most influential models is the autonomous search model of Forster. In this model, the word recognition system is divided into several different components. One is devoted to the orthographic (spelling) properties of a word and another to the phonetic properties. Each of these is organized in descending order of frequency. Thus, more frequent words are searched before lower-frequency words. When the input is matched to one of the items in one of the two bins, a pointer to an entry in the master lexicon is retrieved. When this entry is retrieved, other properties of the word such as its syntactic function are retrieved. Forster's model assumes that the lexicon is autonomous or independent of other systems involved in language processing. Thus, according to this model, activation of words from the lexicon is not directly influenced by syntactic or semantic factors. Such factors affect the general cognitive system. Information from the lexicon is fed into this more general system, and in this way, syntactic/semantic information may influence word activation. Originally, the model assumed a single comparator that matched the incoming signal to the lexical representation in the phonetic or orthographic files. This led to a problem in terms of the number of files that needed to be searched versus the observed speed of word recognition. Thus, the revised model has separate comparators for each file bin.

In contrast, the parallel access models propose that perceptual input about a word activate lexical items directly, and that multiple entries can be activated at once. That is, a number of potential candidates are activated simultaneously and the lexical item which shares the most features with the targeted stimulus is the one that is chosen. Examples of the parallel search model are Marslen-Wilson's cohort model, McClelland & Seidenberg's connectionist model, and Morton's logogen model. The factors that influence word access and lexical organization are addressed in both the serial and parallel processing models. At the present time, there is a greater acceptance toward the parallel access models than the serial search models when explaining lexical access specific concept.

Topic-032: Difference Between Logogen and Cohort Model

An important aspect of Morton's Logogen Model is that both sensory and contextual information interact in such a way that there is a trade-off relationship between them; the more contextual information input to a Logogen from top-down sources, the less sensory information is needed to bring the Logogen above threshold for activation. This feature of the Logogen model enables it to account for the observed facilitation effects of syntactic and semantic constraints on speed of lexical access as well as the word frequency and word apprehension effects reported in the literature. In the presence of constraining prior contexts, the time needed to activate a logogen from the onset of the relevant sensory information will be less than when such constraints are not available because less sensory information will be necessary to bring the logogen above its threshold value.

In contrast to Logogen Theory which assumes activation of only a single lexical item after its threshold value is reached, Cohort Theory views word recognition as a process of eliminating possible candidates by deactivation. A set of potential word-candidates is activated during the earliest phases of the word recognition process solely on the basis of bottom-up sensory information. According to Marslen-Wilson and Welsh, the set of word-initial cohorts consists of the entire set of words in the language that begins with a particular initial sound sequence. The length of the initial sequence defining the initial cohort is not very large. According to the Cohort Theory, a word is recognized at the point that a particular word can be uniquely distinguished from any of the other words in the word-initial cohort set that was defined exclusively by the bottom-up information in the signal. This is known as the "critical recognition point" of a word. Upon first hearing a word, all words sharing the same initial sound characteristics become activated in the system. As the system detects mismatches between the initial bottom-up sensory information and the top-down information about the expected sound representation of words generated by context, inappropriate candidates within the initial cohort are deactivated.

In Cohort Theory, as in the earlier Logogen Theory, word recognition and subsequent lexical access are viewed as a result of a balance between the available sensory and contextual information about a word at any given time. In particular, when deactivation occurs on the basis of contextual mismatches, less sensory information is therefore needed for a single word candidate to emerge. According to the Cohort Theory, once word recognition has occurred, the perceptual system carries out a much less detailed analysis of the sound structure of the remaining input. As Marslen-Wilson and Welsh have put it, "No more and no less bottom-up information needs to be extracted than is necessary in a given context".

Morton proposed one of the earliest activation models. In Morton's model, each word (or morpheme) in the lexicon is represented as a logogen, which specifies the word's various attributes (semantic, orthographic, phonological, and so on). The logogen is activated in either of two ways: by sensory input or by contextual information. Consider first the sensory route. As orthographic or phonological features of the input stimulus are detected, they are matched to the logogen. The logogen functions as a scoreboard or counter; when the counter rises above a predesignated threshold, the item is recognized. With regard to the contextual information, the semantic and syntactic structure of a sentence may influence the activation of the logogen for a given word. Consider the following sentence:

(13) Her closest relative was appointed as her legal guardian.

(13) "Her closest relative was appointed as her legal guardian."

We can anticipate the word guardian due to the expectations created by earlier words in the sentence. The activation of the earlier words influences the logogen for the final word, temporarily lowering its threshold. Thus, it is easier to recognize guardian in this context than if presented in isolation. In the original version of the logogen model, the information about the associations between different words is not contained in the logogen system itself but rather in a separate cognitive system that feeds back to the logogens. In the Logogen model, these two routes are assumed to work in parallel; sensory and contextual matches increase the same counter. Thus, when many sensory features are detected (as when the word is presented loudly), the corresponding word will be activated even if it is somewhat unexpected. Similarly, an expected word will be activated even if presented in dim light. Of course, if both sensory and contextual features are detected, then the word is easily detected.

Topic-033: Variables That Influence Lexicon Access

The following variables affect the lexicon access:

- Word Frequency
- Phonological Variables
- Syntactic Category
- Morphological Complexity
- Semantic Priming

Topic-034: Lexical Ambiguity

The form of ambiguity in which a single word may be interpreted to have more than one meaning is referred to as lexical ambiguity. Foss was the first to apply the phoneme-monitoring technique to the study of lexical ambiguity. He presented listeners with sentences containing ambiguous words, such as those in sentence:

The man started to drill before the truck arrived.

Topic-035: Appraising Models of Lexical Access

Lexical access is influenced by a variety of factors, including the frequency of a word, its phonological structure, its syntactic category, its morphological structure, the presence of semantically related words, and the existence of alternative meanings of the word. Common words and meanings appear to be in a state of greater readiness than less-often-used words and meanings. We rely on morphological structure when encountering unfamiliar words. Considerable research has investigated how we access lexically ambiguous words. Some research suggests that we briefly consider all meanings of an ambiguous word. However, when a preceding context primes the most dominant meaning of a word, lexical access may be selective.

Topic-036: Stages of Lexis in Speech Production

Stage 1 – Conceptualization

The first one is called the Conceptualization Stage. This is when a speaker spontaneously thinks of what he or she is going to say. It is an immediate reaction to external stimuli and is often based on prior knowledge of the particular subject. No premeditation goes into these words and they are all formulated

based upon the speaker's knowledge and experience at hand. It is spontaneous speech. Examples of this can range from answering questions to the immediate verbiage produced as a result of stubbing your toe.

Stage 2 – Formulation

The second stage is called the Formulation Stage. This is when the speaker thinks of the particular words that are going to express their thoughts. It occurs almost simultaneously with the conceptualization stage. However, this time the speaker thinks about the response before responding. The speaker is formulating his or her words and deciding how to reply to the external stimuli in the best manner. Where conceptualization is more of an instant and immediate response, formulation is a little delayed.

Stage 3 – Articulation

The third stage is the Articulation Stage. This is when the speaker physically says what he or she has thought of saying. This is a prepared speech or planned wordage. In addition, the words may have been rehearsed such as when someone practices a presentation or rehearses a lie. It involves the training of physical actions of several motor speech organs such as the lungs, larynx, tongue, lips, and other vocal apparatuses. Of course, the first two stages also involve these organs; however, the articulation stage uses these organs multiple times for the same word patterns.

Stage 4 – Self-Monitoring

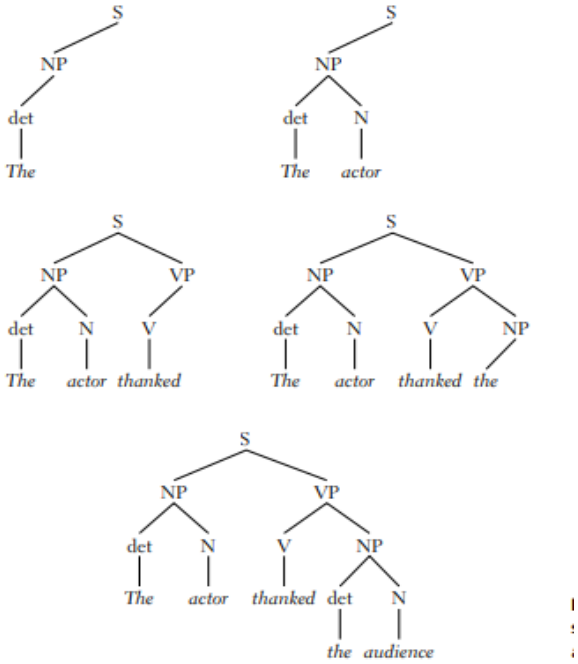
The fourth stage is called the Self-Monitoring Stage. This is when the speaker reflects on what he or she has said and makes an effort to correct any errors in his or her speech. Often times this is done in a rebuttal or last words argument. In addition, it could also be done during a conversation when the speaker realizes that he or she slipped up. This is the action of reflecting on what you said and making sure that what you said is what you meant.

Lesson-07

IMMEDIATE PROCESSING OF SENTENCE

Topic-037: Parsing

Following are the five stages in the parsing of a sentence:



We may think of parsing as a form of problem solving or decision making in the sense that we are making decisions (although not necessarily in a conscious manner) about where to place incoming words into the phrase marker we are building. We make these decisions immediately as we encounter a word, a principle they call the immediacy principle. According to this view, when we first see or hear a word, we access its meaning from permanent memory, identify its likely referent, and fit it into the syntactic structure of the sentence. The alternative to immediate processing is to take a ‘‘wait-and-see’’ approach: to postpone interpreting a word or phrase until it is clearer where a sentence is going. However, considerable evidence for the immediacy principle is available. Although we sometimes postpone decisions, more often than not we interpret the words as we hear or see them. The primary reason that we use immediate processing is that the number of decisions involved in understanding even a single sentence can be quite large and thus can overload our cognitive resources. Suppose we heard sentence (1):

(1) John bought the flower for Susan.

This sentence is syntactically ambiguous. It might mean that John bought the flower to give to Susan or that John bought a flower as a favor for Susan, who intended to give it to another person. This ambiguity is encountered when we hear the word for. Suppose further that we kept in mind both meanings of the sentence. But then flower has more than one interpretation also. It could mean flower or flour

(remember, the sentence was heard). Suppose we take a wait-and-see approach and wait for further information before deciding which interpretation to use. Such an approach has a major disadvantage, however, if we retained two or more interpretations of each of the several choice points, we would rapidly overwhelm our working memory. Although immediacy of processing reduces memory load, it may lead to errors in parsing. For example, consider sentence fragment (2):

(2) The florist sent the flowers...

Where might this sentence be going? At this point it looks like a simple declarative sentence in which the florist is the subject and sent the flowers is the main verb phrase. But suppose it continues as indicated in (3):

(3) ... was very pleased.

Although it at first appears to be ungrammatical, in fact this is a grammatical sentence with an embedded relative clause (a clause that modifies a noun). One of the reasons that the sentence is difficult to comprehend is that the embedded clause is a reduced relative clause; it is not signaled with a relative pronoun, as in sentence (4):

(4) The florist who was sent the flowers was very pleased.

Another reason is that declarative sentences are more familiar than relative clauses, so we are more likely to ‘‘place our bets’’ on that outcome. If we took a wait-and see approach, we would not be surprised by the continuation in (3). But we are surprised, so it appears that we immediately interpret the fragment in (2).

Topic-038: Parsing Strategies

Late Closure Strategy: One parsing strategy is called the late closure strategy. This strategy states that, wherever possible, we prefer to attach new items to the current constituent. A primary motivation for this strategy is that it reduces the burden on working memory during parsing. One example of late closure is sentence (5):

(5) Tom said that Bill had taken the cleaning out yesterday.

Here the adverb yesterday may be attached to the main clause (Tom said ...) or the subsequent subordinate clause (Bill had taken ...). Frazier and Fodor argue that we tend to prefer the latter interpretation. Another example is (6), in which the prepositional phrase in the library could modify either the verb put or the verb reading. We tend to prefer attaching the prepositional phrase to the latter verb.

(6) Jessie put the book Kathy was reading in the library.

Further evidence for the late closure strategy comes from Frazier and Rayner, who examined eye fixations of subjects reading structurally ambiguous sentences, such as this one:

(7) Since Jay always jogs a mile seems like a very short distance to him.

The ambiguity in this sentence is a little artificial because it lacks a comma after jogs. Nonetheless, the participants' eye fixations were interesting. Frazier and Rayner found that fixation times on the last few words were longer than on the earlier ones, implying that readers had misinterpreted the term a mile and had to make some later adjustments. Sentences such as (7) are garden path sentences. As we saw in Chapter 1, in a garden path sentence, we interpret a sentence in a particular way only to find out near the end that we misinterpreted it. The subjective impression is that of being led down a garden path until discovering at the end that we took the wrong way and have to retrace our steps. The garden path experience lends further support to the immediacy principle, for if we did not commit ourselves to an immediate interpretation, we would not have found ourselves in this predicament.

Minimal Attachment Strategy: A second strategy is referred to as the minimal attachment strategy, which states that we prefer attaching new items into the phrase marker being constructed using the fewest syntactic nodes consistent with the rules of the language.

Topic-039: Modular Versus Interactive Models

The modular approach suggests that the words of sentence activate syntactic processing strategies that are used to organize the words into a phrase marker. These strategies indicate that we prefer to attach incoming words to the most recent constituent as opposed to attaching them to earlier constituents or developing new ones. Although the strategies are generally useful, they sometimes lead to errors and subsequent re-analyses of syntactic structure.

The interactive approach emphasizes that we use all available information, including lexical, discourse, and contextual factors. Whereas the modular approach insists that syntactically based strategies are used first, with lexical and discourse factors coming in later, the interactive model asserts that we simultaneously use all available information to parse sentences. Current research supports the role of lexical and contextual factors in parsing, but the role of discourse factors is less evident.

Topic-040: Constraint Based Model

Theories into sentence processing can be viewed from two main accounts: a modular account or an interactive account. Garden path model proposed by Fraizer and Rayner supports the modular account, arguing sentence processing involves the analysis of each individual unit or module of a sentence, with little or no feedback, thus inhibiting correction. Whereas an interactive account supported by the constraint based theory, argues sentence processing involves immediate incorporation of all available information in creation of the final output. The Garden path model proposed by Frazier and Rayner, argues readers only consider initially one syntactic structure for any given sentence and meaning is not involved in the selection of preliminary syntactical meaning. Thus, readers and listeners can be misled by ambiguous sentences (i.e. garden path sentences). Whereas Constraint based theory proposed by MacDonald, argues all relevant information is available immediately to the parser during reading and listening. The incoming information is analysed and all possible constraints or outputs are activated and ranked according to the strength of the subsequent activation. The syntactic structure receiving the most support from the constraints will be highly activated and thus chosen. In essence, activated constraints are in competition with one another and when two constraints are equally activated, ambiguity arises. These two theories propose conflicting basic ideologies; Garden Path model argues only one syntactic structure is initially considered and meaning is not involved in selection of syntactic meaning, whereas, constraint

based theory argues all relevant information is used and several syntactical meanings are initially considered before the most appropriate is selected.

Topic-041: Working Memory and Comprehension

Given the complexity of comprehension, we would expect that working memory capacity is also related to individual differences in comprehension performance. Gernsbacher and Faust provide evidence for this claim. They found that less skilled comprehenders were less efficient in rejecting the inappropriate meanings of ambiguous words. For example, when presented with sentences such as He dug with the spade, less skilled comprehenders were slower to reject the meaning of spade that pertains to playing cards in favor of the meaning that pertains to gardening.

Topic-042: Incomplete or Inaccurate Representations

The observation that comprehenders may develop incomplete or inaccurate representations of sentences is not new. In one classic example, participants were asked, 'How many animals of each sort did Moses put on the ark?' Most people respond by saying 'two,' instead of noticing that it was Noah, not Moses, who gathered the animals. The significance of incomplete or inaccurate representations is twofold. First, in naturalistic situations people frequently misinterpret what others are saying, for a host of reasons (they are distracted by others' comments, noise in the environment, and so on). Psycholinguists have focused on people's ability to comprehend sentences in controlled laboratory environments, and in that context, errors are relatively infrequent. Although they are infrequent, these errors perhaps tell us more about comprehension in the natural environment than correct performance. Second, studies of incomplete representations emphasize the influence of expectations in sentence comprehension. As the 'Moses illusion' illustrates, we come to the process of sentence comprehension with some preexisting ideas or preferences. When sentences that do not match our expectations are presented, we sometimes misinterpret them initially and ultimately correct ourselves, as the original garden path studies suggested. But other times, the expectations win out and the meaning that we carry from the sentence is fundamentally flawed.

Lesson-08

COMPREHENDING FIGURATIVE LANGUAGE

Topic-043: Comprehending Figurative Language

Figurative language is language that means one thing literally but is taken to mean something different. It is a ubiquitous aspect of language. Honeck has noted the prevalence of figurative language in advertising. Studies of language use in television news programs have found that speakers use one unique metaphor for every 25 words.

Generally, in figurative language, the intended meanings of the words, sentences, and expressions used do not coincide with their literal meanings. When speaking figuratively, speakers mean something other than what they literally say. Therefore, to understand figurative language, an individual must be able to grasp the speaker's intention in a given context. The most common examples of figurative language include metaphors (e.g. 'Love is a journey'), which involve 'understanding and experiencing one kind of thing in terms of another.'

Topic-044: Types of Figurative Language

Two of these types have been examined most intensively in psycholinguistic research: indirect speech acts and metaphor.

Indirect speech acts: To understand indirect speech acts, we need to first understand the concept of speech act. And to do, this we need to define some terms. A good deal of research has been done into the various ways a speech utterance might function. Research was especially interested in certain utterances that do not seem to communicate much information but, instead, serve as an action. When we use phrases such as I promise ..., I apologize ..., and I congratulate ..., the very act of uttering the sentence is a kind of action. These are quite different than utterances in which assertions are made. For example, it makes no sense at all to respond No, that's not true to the following sentence:

It's going to be cold today.

Metaphor: When someone says that Jim's head is full of rocks, we instantly recognize it as a metaphoric statement. The comprehension of metaphoric language poses some very interesting problems for a general theory of language comprehension. For one thing, metaphors and other forms of figurative language are ubiquitous features of language and thus cannot be dismissed as a peripheral concern. Moreover, the apparent ease of comprehension of most metaphors suggests a link with the processes of language comprehension we have discussed throughout this chapter. Yet, the manner in which word meanings are combined to form novel metaphors seems to extend our understanding of comprehension, for metaphors are invariably literally false. Thus, the question to be pursued here is in what way we comprehend a meaning that is literally anomalous but metaphorically not just meaningful but often amusing, thought provoking, or poignant. Metaphors consist of three main parts. Consider, for example,

Billboards are warts on the landscape.

Topic-045: Studies of Figurative Language Comprehension

The different types of figurative language enable us to communicate a wider range of meanings than would be possible if we were limited to literal language. Metaphors are primarily used to convey ideas and feelings that are difficult to express, and indirect speech acts are often employed to state a request in a polite way. The evidence to date does not support the pragmatic theory that we comprehend figurative language by first considering and then rejecting the literal meaning. Proponents of the conceptual and class inclusion theories have responded, in different ways, to the limitations of the pragmatic theory, and both models have some appeal. The conceptual theory appears best equipped to explain instances in which we automatically access figurative meaning. The class inclusion model is most helpful in connecting the study of figurative language with the field of language comprehension in general and lexical comprehension in particular.

Topic-046: Comparison and Contrast Pragmatic Theory and Conceptual Metaphor Theory

Although figurative language is an important aspect of everyday language usage, it has only been in recent years that psycholinguists have studied this aspect of language in any detail. In this section of the chapter, we will examine research in figurative language comprehension. The research has been conducted in the context of three main theories of comprehension: the pragmatic, conceptual metaphor, and class inclusion theories.

Pragmatic Theory: It is generally held that linguistic communication takes place within a context of shared assumptions about communication. These implicit assumptions are referred to as conventions. Grice has identified four conventions (which he calls ‘‘maxims’’) governing conversation. According to Grice, we strive to be informative, clear, relevant, and truthful. Of course, these conventions provide no more than ground rules for successful conversations; all of us, from time to time, are uninformative, unclear, irrelevant, and deceitful. Grice’s point is that these conventions provide a basis for interpreting what others mean because we generally assume, unless we have information to the contrary, that such conventions will be observed.

Topic-047: Class Inclusion Theory

Glucksberg and his colleagues have advanced a model that states that metaphors are class inclusion statements. That is, when we see a metaphor, we understand it as analogous to the kinds of class inclusion statements. To determine whether either of these is true, we must retrieve the lexical representations of the appropriate nouns and assess whether the class inclusion relation is applied appropriately.

Topic-048: Comparative Figurative Languages

Metaphor: When you use a metaphor, you make a statement that doesn’t literally make sense. For example, “Time is a thief.” Time is not actually stealing from you but this conveys the idea that hours or days sometimes seem to slip by without you noticing.

Metaphors only makes sense when the similarities between the two things being compared are apparent or readers understand the connection between the two words. Examples include:

- The world is my oyster.

- You're a couch potato.
- Time is money.
- He has a heart of stone.
- America is a melting pot.
- You are my sunshine.

Simile: A simile also compares two things. However, similes use the words "like" or "as."

Examples include:

- Busy as a bee.
- Clean as a whistle.
- Brave as a lion.
- The tall girl stood out like a sore thumb.
- It was as easy as shooting fish in a barrel.
- My mouth was as dry as a bone.
- They fought like cats and dogs.
- Watching that movie was like watching grass grow.

Personification: Personification gives human characteristics to inanimate objects, animals, or ideas. This can really affect the way the reader imagines things. Personification is often used in poetry, fiction, and children's rhymes.

Examples include:

- Opportunity knocked at his door.
- The sun greeted me this morning.
- The sky was full of dancing stars.
- The vines wove their delicate fingers together.
- The radio suddenly stopped singing and stared at me.
- The sun played hide and seek with the clouds.

Hyperbole: Hyperbole is an outrageous exaggeration that emphasizes a point. It tends toward the ridiculous or the funny. Hyperbole adds color and depth to a character.

Examples include:

- You snore louder than a freight train!
- It's a slow burg. I spent a couple of weeks there one day.
- She's so dumb; she thinks Taco Bell is a Mexican phone company.
- I had to walk 15 miles to school in the snow, uphill, in bare feet.
- You could've knocked me over with a feather.

Symbolism: Symbolism occurs when a word has its own meaning but is used to represent something entirely different.

Examples in everyday life include:

- Using the image of the American flag to represent patriotism and a love for one's country.
- Incorporating a red rose in your writing to symbolize love.
- Using an apple pie to represent a traditional American lifestyle.
- Using a chalkboard to represent education.
- Incorporating the color black in your writing as a symbol for evil or death.
- Using an owl to represent wisdom.

Lesson-09

MEMORY FOR SENTENCES

Topic-049: Memory for Meaning Versus Surface Form

A basic idea in studies of sentence memory concerns whether we retain the exact or verbatim wording of a sentence or simply its meaning. Most of the early research on this issue suggested that only meaning was retained. Fillenbaum presented people with a long list of unrelated sentences and later gave them a multiple-choice test of each of the sentences.

Topic-050: Time Course of Retention and Pragmatic Factor

Time course of retention: Studies like those we have been discussing have been used to support the idea that we ordinarily use the syntactic structure of a sentence to extract the underlying meaning. A classic study by Sachs examined the time parameters within which these processes might operate. The tendency to store only the meaning of a sentence in permanent memory is not limited to spoken languages.

Pragmatic factors: In some situations, however, we seem to remember the exact form of what was said to us. Perhaps it was puzzling or confusing or irritating, and we found cause to mull it over a bit. A few studies have examined the way pragmatic factors interact with semantic and syntactic considerations in sentence memory.

Topic-051: Inferences and Sentence Memory

The notion that greater elaboration of processing leads to better retention has received a substantial amount of support in psychological studies of words, sentences, and discourse. Elaboration is thought of as a process by which incoming information is related to information already stored in permanent memory, thereby enriching the memory representation of the new material. We have just seen how information processing pertaining to the pragmatic functions of everyday speech may serve as the basis for elaboration. We now turn to elaborations based on our general knowledge of the world, information that is not specifically linguistic in nature. A particular form of elaborative processing is the drawing of inferences.

Inferences and false recognition errors: The general experimental procedure used by Bransford has been to present people with long lists of sentences and later to probe their tendency to make false recognition errors: errors that people make by believing that they saw or heard something that was actually not presented. A long list is necessary to encourage participants to attend to the meaning, not just the form, of the sentences. In one study, Johnson, Bransford, and Solomon examined people's comprehension and retention.

Topic-052: False Recognition Errors

The Deese–Roediger–McDermott (DRM) paradigm is a procedure in cognitive psychology used to study false memory in humans. The procedure was pioneered by James Deese in 1959, but it was not until Henry L. Roediger III and Kathleen McDermott extended the line of research in 1995 that the paradigm became popular. The procedure typically involves the oral presentation of a list of related words (e.g. bed, rest, awake, tired, dream, wake, snooze, blanket, doze, slumber, snore, nap, peace, yawn,

drowsy) and then requires the subject to remember as many words from the list as possible. Typical results show that subjects recall a related but non presented word (e.g. sleep) known as 'lure' with the same frequency as other presented words. When subjects are asked about their experience after the test, about half of all participants report that they are sure that they remember hearing the nonpresented word, indicating a false memory – memory for an event that never occurred.

Topic-053: Propositions and Sentence Memory

It appears that we generally store the gist of what another person has said rather than the exact form of the sentence. An exception is statements that are pragmatically striking, such as those that require a response from us or flout the normal conventions of everyday discourse. In these cases, we often draw some inference based on what a person has said and store this enriched meaning along with the surface form of the utterance. Moreover, other forms of inference that we draw are based not on purely linguistic knowledge but rather on general world knowledge. These inferences are drawn in the process of comprehension and are, after a period of time, increasingly indistinguishable from the exact sentences to which we were exposed. All of these considerations suggest that a linguistically based representational system (such as deep structure in transformational grammar) is a poor candidate for a model of sentence memory. It appears that the exact linguistic form is not well retained and, moreover, additional nonlinguistic information may play a major role in the retention process.

Topic-054: Analysis of Propositions, Sentences and Clause Type

A proposition is an idea unit; it is a statement that expresses a factual claim; it is the basic unit involved in the understanding and retention of text. Propositions correspond roughly to verbs, adjectives, adverbs, prepositions, and subordinating conjunctions (not nouns or pronouns). Proposition density is an important factor in reading comprehension because of a proposition's role in text comprehension and retention. In addition, sentences in print often have a complex, embedded syntax that places demands on the reader's working memory. The combination of text comprehension and retention, and demands on the reader's working memory suggest that proposition density might be useful in the selection of college textbooks. The widely adopted readability formulas utilized in reading comprehension research do not estimate proposition density. Those readability formulas include Flesch-Kincaid Grade Level or Reading Ease, Degrees of Reading Power, Lexiles, and Coh-Metrix. These single metrics are based on length of words and sentences (Flesch Kincaid), readers' performance on a cloze procedure (Degrees of Reading Power and Lexiles), and on various language-discourse levels (Coh-Metrix). Sentence and clause types and nonfinite verbals are important in this research because they are directly related to complex, embedded syntax.

Lesson-10

COMPREHENSION OF DISCOURSE

Topic-055: Local and Global Discourse Structure

Comprehension of connected discourse depends less on the meanings of the individual sentences than on their arrangement. Indeed, it is entirely possible for a group of meaningful sentences to be thrown together in a way that makes no sense at all.

Topic-056: Discourse Structure: Theory, Practice, and Use

The claim that a theory of discourse involves the search for the rules or conventions which govern it has dominated both structural and functional approaches to discourse. In structural approaches, the aim is to discover the rules which, if followed, result in an acceptable or well-formed text. In approaches which view discourse in terms of communicative behavior, the aim is to discover the social conventions which determine which utterances may occur and what they may be combined with. In other words, the main concern is with the acceptability of discourse.

Topic-057: Cohesion

A central concept is the notion of cohesion. Halliday and Hasan (1976) define cohesion as referring to ‘‘the range of possibilities that exist for linking something with what has gone before.’’

Categories of cohesion: One type of cohesion is called reference. Reference deals with the links between words and objects or events in the world. In discourse, reference deals with the links between words (or phrases) and other words (or phrases) in discourse. More precisely, reference is a semantic relation whereby information needed for the interpretation of one item is found elsewhere in the text. We often use pronouns such as she, he, it, his, her, and their to refer to earlier items.

Topic-058: Strategies Used to Establish Coherence

Given information refers to information that an author or speaker assumes the reader or listener already knows, whereas **new information** is the information that the comprehender is assumed to not know. Most sentences contain both given and new information. For example, sentences (1) and (2) are similar in their grammatical structure but convey different expectations, with (1) assuming that readers already know that the bank was robbed (the given information) but do not know who did it (the new information), and (2) assuming that readers know that Steve robbed something but not what it was he robbed.

(1) It was Steve who robbed the bank.

(2) It was the bank that Steve robbed.

Direct matching: The simplest case is surely that in which the given information in the target sentence directly matches an antecedent in the context sentence:

(3) We got some beer out of the trunk.

(4) The beer was warm.

In comprehending the target sentence, we first divide it into given and new information. The definite article the marks beer as given and was warm as new. We then search our memory for a previous reference to beer and find it in the context sentence. Finally, we attach the information that the beer was warm to the previously stored information.

Bridging: In some cases, we do not have a direct antecedent for the given information but can still tie the sentences together:

(5) Last Christmas, Eugene went to a lot of parties.
(6) This Christmas he got very drunk again.

Here, we must make a bridging inference, such as that Eugene got very drunk at last year's parties, to make sense of the word again. In contrast, a direct antecedent pair such as

(7) Last Christmas, Eugene got absolutely smashed.

(8) This Christmas he got very drunk again.

requires no such bridge for comprehension. Haviland and Clark (1974) have shown that target sentences that require bridges take longer to comprehend than those for which there is a direct match of antecedents.

Reinstating old information: The best way to understand this strategy is to compare the following two passages: (i)I am trying to find a black dog. He is short and has a dog tag on his neck that says Fred. Yesterday that dog bit a little girl. She was scared, but she wasn't really hurt. (ii) Yesterday a black dog bit a little girl. It got away, and we are still trying to find it. He is short and has a dog tag on his neck that says Fred. She was scared, but she wasn't really hurt. You probably found that the target (last) sentence in the first passage was easier to comprehend than in the second passage. Because a direct antecedent for she is presented, we do not need to resort to bridging. The problem in the second passage is simply that the antecedent is too far removed from the target. Using Chafe's terms, the dog is in the foreground and the girl is in the background by the time we see the target, whereas the girl is in the foreground in the first passage. When a sentence refers to something or someone already introduced but no longer in the foreground, the comprehender must reinstate the information that is to be matched with the target information. Several studies have shown that reinstatements increase comprehension time.

Topic-059: Identifying New Topics of Discourse

Identifying new topics of discourse: We have discussed three cases so far. When there is a direct match between given information in the target and an antecedent immediately preceding it, the given/new strategy is performed without any problem. If we cannot find an antecedent readily, we might form a bridge between the antecedent and target, or we might search information recently entered in permanent memory for antecedents that could be reinstated. In general, we form bridges when we believe the author intends for us to find a relationship between the context and the target but has not spelled it out explicitly. Reinstatements are more likely to be used when we think our failure to find a unique antecedent has been caused by the carelessness of the author.

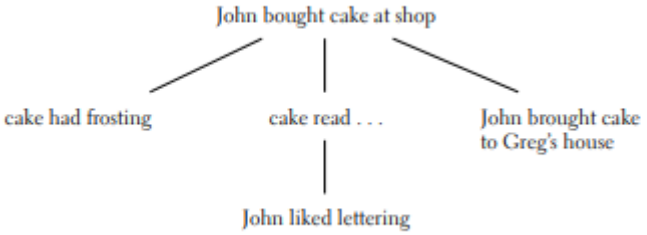


FIGURE 7.1 A memory representation.

Topic-060: Role of Working Memory

As with other aspects of language, individual experiences and abilities vary. Because the process we have been describing in this section deals with the operation of working memory, it would be reasonable to expect that individual differences in working memory might influence how we comprehend discourse.

Daneman and Carpenter developed a complex reading span task to examine this trade-off. The researchers had participants read aloud a series of sentences (processing function) and then recall the final word in each sentence (storage function). The task began with only two sentences in a series and progressed until a person could not recall the final words in each sentence. For their participants, the reading spans (the number of final words recalled) varied from two to five. The researchers then administered a reading comprehension task: each participant read a passage and answered a few questions about it. Daneman and Carpenter found a significant correlation between reading span and reading comprehension.

Working memory capacity, of course, is not the only individual characteristic that influences discourse comprehension. Another is the background knowledge that the individual may have of the subject matter in the passage. When we encounter unfamiliar passages, it is more difficult to draw appropriate inferences. In contrast, when we have information in permanent memory that helps us interpret the information, it is easier to draw inferences.

Lesson-11

MEMORY FOR DISCOURSE

Topic-061: Memory for Discourse

Preserved working memory is pivotal for language processing effectiveness, being an essential tool for resolving structural and lexical ambiguity during the discourse processing and comprehension. Based on this premise, several investigators have suggested that changes in the capacity of working memory will have an impact on the linguistic processing, leading to problems in comprehension of larger units like discourse.

Topic-062: Surface Representations

One early study that suggested that surface representations of discourse are very short-lived presented individuals with a long oral passage that was interrupted at irregular intervals. Individuals were asked at each interruption to write down in verbatim form as much of the preceding discourse as they could. Two versions of the passage were created. Consider sentences (1) and (2):

(1) The confidence of Kofach was not unfounded.

To stack the meeting for McDonald, the union had even brought in outsiders.

(2) Kofach had been persuaded by the international to stack the meeting for McDonald.

The union had even brought in outsiders. Although the final clauses in (1) and (2) were identical, the material immediately preceding either came from the same sentence (1) or the earlier sentence (2). It was found that the percentage of correct recall of the next-to-last clause was far better when it was part of the current sentence than when it was part of an earlier sentence. These and similar results have been taken as evidence that the surface or verbatim form of a sentence is stored in working memory only until its meaning is understood, then purged to make room for the next sentence. There is an exception to this rule, however. Subsequent results indicate that we sometimes remember the exact wording over a long time period.

Topic-063: Propositional Representations

Evidence for the psychological reality of propositions comes from Kintsch and Keenan, who showed that the number of propositions influences the time required to read a passage when preparing to recall it. For example, the following two sentences have about the same number of words:

(3) Cleopatra's downfall lay in her foolish trust in the fickle political figures of the Roman world.

(4) Romulus, the legendary founder of Rome, took the women of the Sabine by force.

However, sentence (3) is more complex propositionally than (4), which contains four propositions. Kintsch and Keenan found that a proposition added about 1.5 seconds to the reading time. Later studies provide somewhat lower estimates of the time needed to encode a single proposition but support the general conclusion that the number of propositions is related to reading time. Further work explored the notion that discourse is stored as a network of propositions.

Topic-064: Inferences and Propositional Representations

From a communication standpoint, an inference is a proposition in the underlying discourse structure that is intended but not explicitly expressed by the author and thus must be drawn by the reader. Furthermore, evidence indicates that when we draw inferences from a text, we store the implicit propositions right alongside the explicit propositions we have derived from the text itself.

Topic-065: Situational Models

Situational models represent the state of affairs that a text refers to. That is, the assumption is that as we comprehend the propositions of a text, we construct a mental or situational model of the world as described by the text. One possibility is a spatial layout, other is situational models.

Kinds of situational models: All of the preceding examples of situational models are spatial models, but there are other kinds of situational models. Zwann and Radvansky identified a number of different types of models other than spatial models.

One is a causal model, in which the parts of a text are connected by causal relations. The highest level of representation is the situation model which represents ideas of the text in an abstract format (e.g., the people, the actions, the setting, the events, and the inferences). Information in the situation model interacts with preexisting knowledge (i.e., episodic and semantic memory) of the reader, so that situation models can be updated online as one continues reading/listening to the text.

Topic-066: Simultaneous Investigations of All Three Levels

As we have seen, we form surface, propositional, and situational representations during the course of comprehending discourse. Most of the studies we have discussed to this point have attempted to isolate one of these levels or to distinguish between different levels. It is also helpful, however, to set up a study that attempts to investigate how each of the levels operates in the same experiment. Fletcher and Chrysler have reported such a study.

Lesson-12

SCHEMATA AND DISCOURSE PROCESSING

Topic-067: Schemata

A schema (plural: schemata) is a structure in semantic memory that specifies the general or expected arrangement of a body of information. The notion of a schema is not new in psychology. It is generally associated with the early work on story recall by Bartlett. In some imaginative studies that are still cited very frequently, Bartlett attempted to show that remembering is not a rote or reproductive process but rather a process in which we retain the overall gist of an event and then reconstruct the details from this overall impression. He conducted experiments that were conducive to memory errors—unusual, bizarre stories that were repeatedly recalled over long time intervals—so that he could examine the guiding function of schemata in the reconstruction process. He found that when college students were given stories that were inconsistent with their schemata, recall was usually distorted in the direction of the schemata. Bartlett suggested that when we encounter an event that is discrepant from our usual understanding, we have difficulty fitting it into our existing schemata and subsequently tend either not to remember it or to 'normalize' it, altering its details until it is congruent with existing schemata. Bartlett's ideas were relatively unappreciated at the time but have taken on new significance recently as psychologists have developed new techniques to explore the way people comprehend and remember stories. Bartlett's notion of a schema, although appealing, was rather vague, and modern extensions of his work have focused primarily on two issues: characterizing schematic knowledge more precisely and determining how this knowledge is used during discourse comprehension.

Topic-068: Genres

The schemata considered up to this point have been based on content, such as the behavior of a burglar. We can also talk about schemata regarding certain forms of discourse. It is helpful here to introduce the concept of genre, which is a type of discourse that has a characteristic structure. We have genres for, among other things, lectures, sermons, opinion articles, presidential inauguration speeches, and comedy monologues. Genres are important because they provide us with general expectations regarding the way information in a discourse will be arranged. Let us consider a few examples. The organization of a news article in a newspaper can be thought of as an inverted pyramid. The most important points are introduced in the headline and at the beginning of the article. As the article progresses, less important details are brought in. This structure is directly related to the way news stories are edited. If space is not available for the entire article as written, the editor typically deletes paragraphs near the end of the story. Consequently, journalists arrange their stories so that the more important pieces of information are higher in the story.

Psychology students are familiar with another genre, the format that the American Psychological Association uses in its journal articles. The article begins with an abstract, followed by an introduction, the method, the results, and the discussion. Students encountering a journal article for the first time frequently report that it can be very difficult to understand. Gradually, as students become aware of where to find various pieces of information in the article, comprehension improves. One genre that has been studied a great deal in discourse research has been narrative discourse. Typically, stories begin with the introduction of characters and setting. The main character sets out with some sort of goal, runs into some

obstacles, and ultimately resolves the dilemma. There are many different genres for stories; in fact, there are different ones for detective stories, fairy tales, and romances. Detective or suspense stories, for instance, create interest in a crime and supply possible motives for usually several suspects along the way. A skilled writer will drop enough clues for readers to anticipate some but not all of the details of the ending. In a well-constructed story, readers can imagine many different outcomes at the beginning, but these become fewer in number as we go along and, ultimately, at least part of the ending can be predicted. It has been said that in the beginning of a story everything is possible; in the middle, some things become probable; but in the end, one result is necessary.

Narrative discourse can be contrasted with expository discourse in which the goal of the writer is not to tell a story but rather to convey information about the subject matter. This is the form of discourse that we encounter when reading a textbook or, for the most part, listening to a lecture. The emphasis is on presenting the information in an organized, logical manner. In the remainder of this section, we will explore how we comprehend and experience narrative discourse.

Topic-069: Narrative Discourse Processing

Story Grammars: Some of Bartlett's ideas have been formalized by contemporary researchers into the concept of a story grammar. A story grammar is a schema in semantic memory that identifies the typical or expected arrangement of events in a story. In general, story grammars view narratives as consisting of a setting, one or more episodes, and then an ending. In turn, episodes have a characteristic structure: some initiating event occurs, leading to some internal response on the part of the protagonist. The response leads to a goal, an attempt to reach the goal, and an outcome.

Psychological validity of story grammars: A fair amount of evidence indicates that story grammars (or something like them) correspond to several aspects of how comprehenders process simple stories. For example, the story grammar approach places emphasis on the concept of an episode. Several sources of evidence indicate that episodes are an important unit in our memory for stories. One is that episodes tend to be recalled in an all-or-none fashion as if they are stored in separate chunks in working memory. Black and Bower showed that the length of one episode does not influence the recall of another. Similarly, Glenn reported that the episodic structure of recall is unaffected by the length of the episodes.

Cross-cultural investigations: Mandler, Scribner, Cole, and DeForest examined whether these patterns of story recall are similar or different in different cultures. There is relatively little evidence on this issue. As we saw earlier, Bartlett presented Eskimo folktales to British college students and found that their recall was very poor. Presumably, this was because their story schemata did not match the schemata implicit in the folktales.

Topic-070: Inaccessibility of Knowledge

We have been discussing how we activate appropriate knowledge bases during the course of comprehending narratives. We may now round out our discussion of narrative by considering cases in which we fail to activate the appropriate knowledge. We have already considered one case of inaccessibility of knowledge. The Columbus passage was written so obscurely that we were initially unable to bring our knowledge of the subject matter to the task of comprehension. Here, when knowledge was not activated, comprehension was severely impaired. Yet, it is also possible to comprehend a passage and still not activate the relevant body of knowledge. Consider, for example, the following passage from

Garrison Keillor: In Uncle Lew's story, a house burned down on a cold winter night and the little children inside ran barefoot into the snow of 1906—some were pitched out the bedroom window by their father—and all were safe. But although I heard the story dozens of times, whenever he told it again I was never sure they'd all get out.

Topic-071: Identifying the Main Points

Careful attention to the local structure of discourse helps, but it can still be difficult to figure out what an instructor or author regards as the main points. This may be particularly true for individuals with learning disabilities. Several studies indicate that the difficulty in determining main points may be traced to the presence of distracting and often confusing details. Meyer, Brandt, and Bluth (1980) found that when the key points of a passage are signaled explicitly, performance improves.

These researchers found that the signals improved the immediate retention performance of readers whose comprehension was otherwise poor (those who did not share the schema of the author) but did not affect the retention of good comprehenders. Strategy training led to increased recall performance relative to groups that were given training in assessing their interest in the subject matter or given no training. In addition, as in earlier studies, signals led to improved recall performance. However, strategy training was more effective in improving performance than signaling. Reder and Anderson (1980) tried a different approach. Instead of highlighting the main points, they eliminated many of the details from the passage. This is the idea behind publications such as Cliff Notes, which present condensed versions of plays and novels. Reder and Anderson found that retention was better when the material was presented in a condensed version rather than in a standard textbook version. In a similar vein, Giora (1993) found that analogies in text did not facilitate comprehension and may actually impair recall. It appears that we comprehend best when extraneous material is omitted from text.

Topic-072: Building Global Structures

Devices that highlight the main points of a passage are certainly helpful in the short run, but ultimately we need to identify important points even when they are not so explicitly marked. As we become more familiar with the content and structure of an author's prose, we can gradually deduce the author's schema. One good test of whether we have successfully done this is to write a summary for a portion of the text. This requires us to select specific propositions as the most important ones and to generalize some of the individual propositions into broader thematic statements (see Fletcher, 1994). By comparing our summary with the author's, we can see how close we have come to extracting the gist of the text. As we become more proficient, we can shift to a greater reliance on global processing strategies.

Lesson-13

THE PSYCHOLOGY OF LEARNING

Topic-073: Sign language: A True Language Without Speech

The production of signs is important theoretically because it gives us an opportunity to disentangle the cognitive processes involved in translating thought into language from the physical characteristics of our speech apparatus. Speech shares the vocal channel with respiration; in contrast, sign production can occur entirely in parallel with, and unimpeded by, respiratory activity. Thus, consideration of sign production in comparison with speech production can yield insights into some of the biological limits on linguistic form (Bellugi & Studdert-Kennedy, 1980). We will examine both similarities and differences between the two modes. One striking similarity is that errors occur in signing that strongly resemble those found with. Studies of sign language production are valuable because they enable us to distinguish between those aspects of production that are constrained by broad biological forces and those that are specific to speech. Sign language, because it exists in an entirely different mode from speech, might well differ substantially from speech in terms of grammatical organization. In contrast, basic similarities have been found in the two modes' organization of basic units into words or signs and in the syntactic rules by which words and signs are combined to form sentences. These similarities are illustrated by slips of the hand, which, like those of speech, typically involve a systematic error in a single linguistic unit. These results provide evidence that the parameters underlying signs are planned independently of one another.

Topic-074: Speech-Based Sign Languages

Principally, there are two types of sign language: one that relates to ordinary speech-based language and one that is independent of ordinary language. Speech-based sign languages represent spoken words (or their spelling) and the order of these words or morphemes as they appear in ordinary spoken languages, such as Swedish, English, and French. This contrasts greatly with such sign languages as American Sign Language and British Sign Language, which are not speech based and not mutually intelligible. These sign languages are independent of the ordinary spoken language, having developed their own words and grammatical systems for the production and understanding of sentences. We shall call these Independent Sign Languages (ISLs). Sign language based on the speech of ordinary language can be of two different kinds: one that represents the morphemes of speech and one that represents spelling (orthography). Let us begin with the latter, which is easier to explain and which, by the way, every signer of whatever system must learn so as to be able to express proper nouns such as the names of people or places.

Topic-075: Basic Grammatical Concepts

Four basic grammatical concepts are duality of patterning, morphology, phrase structure, and linguistic productivity. Words are composed of phonemes, which, in turn, have distinctive features. In each instance, the smaller units are combined in a rule-governed manner to produce the larger units. Words consist of one or more units of meaning or morphemes. The system of grammatical morphemes in a language provides speakers with a way of signaling subtle differences in meaning. Phrase-structure rules codify our intuitions about the groupings of words in a sentence. Some sentences are ambiguous and

may be grouped in more than one way. Linguistic productivity refers to the fact that there is no limit to the number of sentences in a language. One type of phrase-structure rule, that of recursion, is responsible for some of this productivity.

Topic-076: Insights from Sign Language

We now consider some of the linguistic properties of **American Sign Language (ASL)**. Unlike speech, signs are expressed in visual or spatial form. This enables us to examine the extent to which the grammatical concepts we have just considered generalize to language in a visual modality. American Sign Language is sharply distinguished from manual forms of English that translate English sounds into signs. The best known is fingerspelling, which, as the name implies, translates English words letter by letter into manual form. It is a secondary gestural system, derived from the English language. In contrast, ASL is independent of English and derived from French Sign Language. Although in the past ASL was regarded as mere pantomime or grammatically deficient in various ways, several decades of scholarly research on ASL have put these ideas to rest. Even if we accept the notion that ASL is an autonomous language, we must ask what its relation to spoken languages is. We will begin to answer this question by considering some of the differences between signed (especially ASL) and spoken languages and then some of the similarities.

Topic-077: Transformational Grammar

Evaluation of Grammars: If grammar is a theory of language, how do we evaluate how good a theory it is? Chomsky has suggested three criteria.

Observational adequacy: First, the grammar must specify what is and what not an acceptable sequence in the language is. This criterion, referred to as observational adequacy, applies at several levels of language. We know at the phonological level that pbort is not an acceptable sequence. Similarly, at the syntactic level we want the grammar to have rules that generate grammatical sentences without also generating strings of words we would regard as ungrammatical. A grammar is observationally adequate if it generates all of the acceptable sequences in a language and none of the unacceptable sequences.

Descriptive adequacy: The second criterion is that the grammar must specify the relationships between various sequences in the language, a criterion known as descriptive adequacy. It is not enough for the grammar to mark a sequence as permissible; it must also explain how it relates to other sentences that are similar in meaning, opposite in meaning, and so on. If, for example, two sentences are similar in meaning but differ in syntax, the grammar should be able to explain this fact.

Explanatory adequacy: The third criterion is called explanatory adequacy. Chomsky points out that it is theoretically possible for a number of grammars, all based on different principles, to attain these two forms of adequacy. How, then, does the linguist determine which of the descriptively adequate grammars is the best? Chomsky's answer pertains to language acquisition in children. He suggests that the child learning a language is presented with samples of the language and must determine the grammar from these samples. Chomsky notes, however, that even though the incoming data may be consistent with any number of grammars, children choose one particular grammar. This implies that certain innate language constraints enable the child to deduce the correct grammar. These innate language mechanisms would presumably be related to linguistic universals common to all languages. Thus, the final level of adequacy

goes beyond the ability to describe patterns in a particular language; instead, it involves the ability to explain the role of linguistic universals in language acquisition.

Topic-078: Issues in Grammatical Theory

Psychological reality of grammar: As indicated earlier, much psycholinguistic research in the early and mid-1960s was based on transformational grammar. This research was guided by the belief that the structures and rules of transformational grammar were psychologically real; that is, they were a part of how people comprehend and produce language. One assumption that was made was that the surface structure was the starting point for comprehension and that the deep structure was the end point; the roles were assumed to be reversed for production. If so, then it would be reasonable to assume that the distance between surface and deep structure (as measured by the number of transformations in a sentence's derivation) would be an accurate index of the psychological complexity of the sentence. This view was called the **derivational theory of complexity** or DTC. Early studies were encouraging. A variety of studies showed that negative sentences such as

(1) The sun is not shining.

were more difficult to comprehend than the corresponding affirmative form such as

(2) The sun is shining.

But these sentences differ in meaning as well as transformational complexity, so this point is hardly conclusive. Later studies directly contradicted DTC. Sentence (3) is, for example, transformationally more complex than (4):

(3) The boy was bitten.

(4) The boy was bitten by the wolf.

In transformational theory, (3) requires a transformation that deletes the phrase by the wolf, so DTC would predict it would be more difficult to comprehend than (4). However, neither intuition nor experiment has revealed any relationship to processing difficulty. Similarly, there is no psychological difference between sentences that have undergone particle-movement transformation and those that have not. These studies have been reviewed extensively elsewhere. As Berwick and Weinberg (1983) pointed out, however, these results do not necessarily mean that the linguistic theory of transformational grammar is faulty. It could be that the linguistic theory is correct but that some of the psychological assumptions guiding DTC are faulty. More recent work has been more favorable to the hypothesis that linguistic theory has psychological reality. Consider this sentence:

(5) The dentist from the new medical center in town was invited by the actress to go to the party.

The use of the passive voice results in the movement of the NP that is the object of the verb (dentist) from the object position to the subject position. However, according to recent grammatical theory, it is assumed that the moved constituent leaves a trace at its earlier location. Thus, the presumed linguistic representation of (5) would be more like (6):

(6) The dentist from the new medical center in town was invited [trace] by the actress to go to the party.

If this proposal has psychological reality, then the hypothesis would be that comprehenders would be likely to reactivate the moved noun (dentist) when its trace was encountered. Osterhout and Swinney (1993) have provided evidence that comprehenders do this. Participants responded rapidly when words semantically related to the moved noun were presented in the trace position. It is as if they were thinking about dentist which made it easier to respond to a semantically related word, such as tooth. Responses were slower either before or after the trace position.

The centrality of syntax: There have long been controversies within linguistics regarding the proper way to characterize linguistic knowledge. As we have seen, phrase-structure rules are insufficient in themselves to account for our linguistic capacities, and these insufficiencies led Chomsky to propose transformational grammar. In the years since transformational grammar was formulated, it has gone through a number of changes. In the most recent version, Chomsky (1995) has eliminated many of the transformational rules in previous versions of grammar and replaced them with broader rules, such as a rule that moves one constituent from one location to another. It was just this kind of rule on which the trace studies were based. Although newer versions of the theory differ in several respects from the original, at a deeper level they share the idea that syntactic structure is at the heart of our linguistic knowledge. However, this view has been controversial within linguistics. We will discuss two alternative linguistic theories. One alternative approach is supplied by lexical theories of grammar. In lexical theories (for example, Bresnan, 1978), greater emphasis is placed on individual lexical items (words) than is given in more structural theories, such as transformational grammar. This view has been influential in recent years in diverse areas of psycholinguistics, including language comprehension, language production, and language development. Let us go through an example to contrast structural and lexical views. In most grammars, the lexical entry for a word includes its meaning, its spelling, its pronunciation, and syntactic characteristics such as part of speech. Bresnan's lexical-functional grammar, lexical entries also include the various forms of the word (for example, kiss, kissed, kissing) and the different kinds of sentences into which each form would fit. For verbs, this includes the arguments or semantic roles, such as the agent (the person doing the action) and the patient (the one to whom the action is done) that are associated with the verb, as well as the surface structure designation, such as subject or object, that goes with it. Consider sentences (7) and (8):

(7) Mother kissed her baby.

(8) Baby was kissed by her mother.

The lexical entry for kiss would indicate its underlying semantic structure as kiss: (agent, patient) That is, the verb requires both an agent and a patient (Mother kissed is not a grammatical sentence). In addition, the entry includes various forms of the word, including kiss: agent = subject, patient = object and (be) kiss: agent = object; patient = subject. The first verb form, used in sentences in the active voice, assigns the agent role to the surface-structure subject and the patient to the surface object. The second form, used in passive sentences, assigns the patient to the subject and the agent to the object of the preposition by.

Lesson-14

PRODUCTION OF SPEECH AND LANGUAGE

Topic-079: Introduction of Production of Speech Language

Stages of Production

1. Planning / preparation: Language production consists of several interdependent processes which transform a nonlinguistic message into a spoken, signed, or written linguistic signal. Though the following steps proceed in this approximate order, there is plenty of interaction and communication between them. The process of message planning is an active area of psycholinguistic research, but researchers have found that it is an ongoing process throughout language production. Research suggests that messages are planned in roughly the same order that they are in an utterance. After identifying a message, or part of a message, to be linguistically encoded, a speaker must select the individual words—also known as lexical items—to represent that message. This process is called lexical selection. The words are selected based on their meaning which in linguistics is called semantic information. Lexical selection activates the word's lemma which contains both semantic and grammatical information about the word.

The first important goal of conceptual preparation is to establish which parts of the conceptually available information are going to be encoded and in what order. The second goal is to convert the conceptual information into a format that is a suitable for the linguistic formulation processes. One important open issue concerning conceptual preparation is how to characterize the mapping between conceptual and grammatical encoding. First is the question of whether conceptual preparation takes language specific properties into account. Languages differ in which conceptual or formal properties need to be realized as a detail of the sentential form. For example, in English the word 'friend' does not carry information concerning the sex of the friend. In Spanish, the corresponding word is differentially inflected for a man ('amigo') or a woman ('amiga'). In English, adjectives used as predicates (e.g., 'tall' in 'The friend of Luis is tall') do not agree in gender with the noun; in Spanish they do (e.g., 'El amigo de Luis es alto' or 'La amiga de Luis es alta'). Thus, in these two languages, conceptual information concerning natural gender must (Spanish) or need not (English) be conveyed by a sentence. Second is the question of whether conceptual information permeates the processes occurring during grammatical encoding beyond providing its input.

2. Grammatical information: Critical grammatical information includes characteristics such as the word's syntactic category (noun, verb, etc.), what objects it takes, and grammatical gender if it is present in the language. Using some of these characteristics as well as information about the thematic roles of each word in the intended message, each word is then assigned the grammatical and thematic role it will have in the sentence. Function morphemes, like the plural /s/ or the past tense /ɪd/, are added in this stage as well.

Grammatical encoding refers to the processes involved in developing a syntactically well-formed sentence. It comprises first those processes that map the relationships among the participants in a conceptual representation (e.g., agent, patient, etc.) onto functional syntactic relations between the words of a sentence (e.g., subject, direct object, etc.). Next, on the basis of the resulting hierarchically organized

syntactic frame for the sentence, the words in the sentence are linearized in a manner allowed by the language being spoken. The first step is also referred to as functional level processing, the second as positional level processing. Distinguishing between building hierarchical and linear frames provides a solution to an important problem that the language production system faces. Speech production has to be incremental to allow for fluent utterances, but at the same time, the resulting utterance has to obey language specific constraints that force the use of only certain word orders. Assuming incremental conceptualization, however, the order in which parts of a conceptual message are processed do not necessarily correspond to a word order allowed in the speaker's language. This problem can be solved by separating the construction of hierarchical structures from the serial ordering of the words. In this way, hierarchical structures can be built in an incremental manner as soon as lexical elements are available; these can then be mapped to permissible linearly ordered positions. Evidence compatible with such a separation comes from studies showing that the linear position of words can be primed by the previous presentation of the same linear order, even if the hierarchical structure differs.

3. Phonological encoding: After an utterance, or part of one, has been formed, it then goes through phonological encoding. In this stage of language production, the mental representation of the words to be spoken is transformed into a sequence of speech sounds to be pronounced. The speech sounds are assembled in the order they are to be produced.

Phonological encoding refers to the processes that are responsible for determining the phonological word forms and prosodic content of the sentence. First, the phonemes of words are retrieved from the mental lexicon, together with a metrical frame which specifies stress pattern and number of syllables in the word. Following this retrieval process, the resulting sequence of phonemes is syllabified according to a language specific set of syllabification rules. The domain of syllabification is assumed to be the phonological word which can but need not coincide with a lexical word. It should be noted that in this view, the syllabic structure of an utterance is computed on-line. The reason for this assumption is that the actual syllabification of a word in running speech depends on the context in which it appears. For example, the word 'deceive' in isolation is syllabified as 'de-ceive,' but in the context of the utterance 'deceive us,' the syllable structure becomes 'de-cei-veus.' This observation also provides a functional reason as to why the phonological form of a word is not stored and retrieved as one entity: such a representation would have to be broken up into its constituent parts whenever the stored syllabification of a word does not agree with its syllabification in the context of running speech. The representation formed by phonological encoding, a syllabified phonological code, forms the input for the articulatory processes which realize this code as overt speech. It is an open issue whether the transition from phonological encoding to articulation involves accessing a 'syllabary,' i.e., memory representations specifying the motor tasks that have to be performed to generate each syllable.

Topic-080: Slips of Tongue

Slips-of-the-tongue are speech errors in which intended utterances are rearranged between other words or sounds. According to psychologist Gary Dell, slips-of-the tongue are significant because they show a person's widespread knowledge about language, including its sounds, structures, and meanings. There are three types of slip-of-the-tongue errors. These types include sound errors, morpheme errors, and word errors. A sound error occurs when the sounds in words close by are exchanged. For example, instead of saying "flower pot," one says "power flot." A morpheme error occurs when morphemes, which

are the smallest meaningful units in language, are switched in words close by. For example, instead of saying "self-destruct instruction," one says, "self-instruct destruction." Word errors occur when actual words are rearranged. For example instead of saying, "reading a book to my dog," one says, "reading a dog to my book." Errors in speech production and perception are also called performance errors.

According to Sigmund Freud, slips-of-the-tongue reveal the thoughts and desires of the unconscious mind. These slips-of-the-tongue are called Freudian slips or parapraxes. Speech errors are made on an occasional basis by all speakers. They occur more often when speakers are nervous, tired, anxious, or intoxicated.

During live broadcasts on TV or on the radio, for example, nonprofessional speakers and even hosts often make speech errors because they are under stress. Some speakers seem to be more prone to speech errors than others. For example, there is a certain connection between stuttering and speech errors. Charles F. Hockett explained that "whenever a speaker feels some anxiety about possible lapse, he will be led to focus attention more than normally on what he has just said and on what he is just about to say. These are ideal breeding grounds for stuttering. Slips of the tongue are a normal and common occurrence.

One study shows that most people can make up to as much as 22 slips of the tongue per day. Speech errors are common among children, who have yet to refine their speech, and can frequently continue into adulthood. When errors continue past the age of 9, they are referred to as "residual speech errors" or RSEs. They sometimes lead to embarrassment and betrayal of the speaker's regional or ethnic origins. However, it is also common for them to enter the popular culture as a kind of linguistic "flavoring." Speech errors may be used intentionally for humorous effect, as with Spoonerisms.

Topic-081: Types of Speech Error

Although speech errors cover a wide range of semantic content, there appear to be only a small number of basic types. Examples of the eight types are given in Table 8.1, with the words that were apparently intended in parentheses.

TABLE 8.1 Major Types of Slips of the Tongue

Type	Example
Shift	That's so she'll be ready in case she decide to hits it (decides to hit it).
Exchange	Fancy getting your model renosed (getting your nose remodeled).
Anticipation	Bake my bike (take my bike).
Perseveration	He pulled a pantrum (tantrum).
Addition	I didn't explain this clarefully enough (carefully enough).
Deletion	I'll just get up and mutter intelligibly (unintelligibly).
Substitution	At low speeds it's too light (heavy).
Blend	That child is looking to be spaddled (spanked/paddled).

Topic-082: Common Properties of Speech Error

Other patterns in these speech errors deserve a closer look. Garrett has identified four generalizations about speech errors that reappear with striking regularity. First, elements that interact with one another tend to come from similar linguistic environments, as indicated by examples (2) through (4):

(2) The little burst of beaden (beast of burden).

(3) You're not a poojin pitter-downer, are you? (pigeon putterdowner)

(4) Children interfere with your nife lite (night life).

Notice that the phonetic segments in the beginning of a word tend to be exchanged with other initial segments; the same is true for middle and final segments. Moreover, exchanges of segments are more common when the segments that precede them are similar. The exchange of /f/ and /t/ in sentence (4) follows this principle. Second, elements that interact with one another tend to be similar to one another. In particular, consonants are invariably exchanged or shifted with other consonants but not with vowels. Errors involving similar sounds, such as in sentence (5), often have little relation to meaning but are based, instead, on phonetic similarity:

(5) Sesame Street crackers (sesame seed crackers).

Topic-083: Explanations of Speech Errors

Speech errors, the bane of performers on live television and radio, are systematic and typically fall into one of eight categories: exchanges, substitutions, additions, deletions, anticipations, perseverations, blends, and shifts. Various hypotheses concerning the basis for such errors have been advanced. One of the more prominent has been Freud's view that errors occur because we have more than a single plan for production and that one such plan competes with and dominates the other. Although a Freudian type of explanation may apply to some speech errors, more recent thinking has focused on the psycholinguistic processes underlying speech errors. The most common interpretation is that we produce speech through a series of separate stages, each devoted to a single level of linguistic analysis. Errors typically occur at one level, but not others, during the production process. In the following section, we will examine this notion of stages of production more closely.

Topic-084: Differences in Freudian and Psycholinguistics Explanation

The Freudian explanation: One intriguing idea is that speakers have more than one idea in mind at a time. During the 1992 campaign, President George Bush began his remarks for one speech by saying (6):

(6) I don't want to run the risk of ruining what is a lovely recession (reception).

This, of course, could be construed as simply a sound error, as the two words are similar phonologically. But it could also be evidence that the president was pre-occupied with the recession (and its effect on his campaign). Or consider a student who explains that he wants to postpone an exam with statement (7):

(7) Last night my grandmother lied (died).

This could be an innocent phonological error, but then again, the slip could reveal the student's thinking more than he wishes.

Freud emphasized the role of psychodynamic factors in making certain types of content more available than others. He argued that these errors 'arise from the concurrent action—or perhaps rather, the mutual opposing action—of two different intentions' (Freud, 1916–1917/1963, p. 44). One of these actions was thought to constitute the conscious intention of the speaker, whereas the other pertained to a more disturbing thought or intention that interfered with the former. Sometimes, the disturbing comment would be censored; but, on other occasions, the outcome of this hypothetical intrapsychic conflict would be a slip of the tongue that expressed some aspects of the less conscious intention. Examples consistent with Freud's position include a general who referred to a group of injured soldiers as battled scared (scarred) and a speaker extolling the achievements of a fellow worker who had just expired (retired).

Freud's position was that virtually all speech errors were caused by the intrusion of repressed ideas from the unconscious into one's conscious speech output. Although the Freudian interpretation may be appealing in cases in which the slip of the tongue results in a word with emotional significance, many slips seem to reflect simpler processes, such as anticipation (a meal mystery instead of a real mystery) and perseveration (he pulled a pantrum in place of he pulled a tantrum) of phonetic segments. In these latter cases, it seems to be unnecessarily complicated and unconvincing to claim that the error originated from intrapsychic conflicts. Still, these more common speech errors demand an explanation.

A Psycholinguistic explanation: Most recent psycholinguistic and linguistic thinking has focused on the insights gained in understanding language mechanisms (not unconscious motivations) from the study of speech errors. In this respect, errors of linguistic performance occupy a role in psycholinguistic theories similar to that played by aphasic disorders. The types of language breakdowns that occur in each case provide important insights for normal language functioning. For example, a study has shown that many of the segments that change and move in speech errors are precisely those postulated by linguistic theories, lending support to the notion that linguistic units such as phonetic features, phonemes, and morphemes constitute planning units during the production of an utterance.

One view of language production is that we produce utterances by a series of stages, each devoted to a different level of linguistic analysis. If so, speech errors can tell us a good deal about what these specific stages might look like. In the next few sections, we will examine some of the psychological and physiological processes that take place when we go from idea to articulation.

Lesson-15

FORMULATING LINGUISTIC PLANNING

Topic-085: Serial Models of Linguistic Planning

The pioneering studies of Fromkin suggested that the process of planning speech can be viewed as a series of stages, each devoted to one level of linguistic planning.

TABLE 8.2 Fromkin's Model of Speech Production

Stage	Process
1	Identification of meaning—a meaning to be conveyed is generated.
2	Selection of a syntactic structure—a syntactic outline of the sentence is constructed, with word slots specified.
3	Generation of intonation contour—the stress values of different word slots are assigned.
4	Insertion of content words—appropriate nouns, verbs, and adjectives are retrieved from the lexicon and placed into word slots.
5	Formation of affixes and function words—function words (articles, conjunctions, prepositions), prefixes, and suffixes are added.
6	Specification of phonetic segments—the sentence is expressed in terms of phonetic segments, according to phonological rules.

SOURCE: Based on "The Non-Anomalous Nature of Anomalous Utterances," by V. A. Fromkin, 1971, *Language, 47,* pp. 27–52, Linguistic Society of America.

Topic-086: Independence of Planning Unit

What evidence can be given that the stages hypothesized in Table 8.2 are actually independent of one another? Probably the clearest evidence is that the vast majority of speech errors contain mistakes at only one level of planning. One of Fromkin's examples is sentence (1), which was pronounced so-er:

(1) singing sewer machine (Singer sewing machine)

Here the error is at stage 5, as the suffixes are exchanged for one another. Yet the rest of the utterance—the content words, stress values, and syntactic structure— remained unaltered. An even more striking example of the point is Garrett's sentence (2):

(2) Stop beating your brick against a head wall. (Stop beating your head against a brick wall.)

Topic-087: Editing Processes

In addition to the stages of planning, some intriguing evidence indicates that editing processes intervene between the planning of an utterance and its articulation. These editing operations might provide a last check to determine whether the planned utterance is linguistically and socially acceptable. It is clear that some monitoring and editing processes occur after a speech segment is uttered; after all, we

often spontaneously correct ourselves. The question we want to consider now is whether we also have editing processes prior to articulation.

Topic-088: Freud's View of Slips of Tongue

One intriguing idea is that speakers have more than one idea in mind at a time. During the 1992 campaign, President George Bush began his remarks for one speech by saying (3):

(3) I don't want to run the risk of ruining what is a lovely recession (reception).

This, of course, could be construed as simply a sound error, as the two words are similar phonologically. But it could also be evidence that the president was preoccupied with the recession (and its effect on his campaign). Or consider a student who explains that he wants to postpone an exam with statement (4):

(4) Last night my grandmother lied (died).

This could be an innocent phonological error, but then again, the slip could reveal the student's thinking more than he wishes. Freud emphasized the role of psychodynamic factors in making certain types of content more available than others. He argued that these errors 'arise from the concurrent action—or perhaps rather, the mutual opposing action—of two different intentions' (Freud, 1916–1917/1963, p. 44). One of these actions was thought to constitute the conscious intention of the speaker, whereas the other pertained to a more disturbing thought or intention that interfered with the former. Sometimes, the disturbing comment would be censored; but, on other occasions, the outcome of this hypothetical intrapsychic conflict would be a slip of the tongue that expressed some aspects of the less conscious intention. Examples consistent with Freud's position include a general who referred to a group of injured soldiers as battled scared (scarred) and a speaker extolling the achievements of a fellow worker who had just expired (retired) (Ellis, 1980). Freud's position was that virtually all speech errors were caused by the intrusion of repressed ideas from the unconscious into one's conscious speech output. Although the Freudian interpretation may be appealing in cases in which the slip of the tongue results in a word with emotional significance, many slips seem to reflect simpler processes, such as anticipation (a meal mystery instead of a real mystery) and perseveration (he pulled a pantrum in place of he pulled a tantrum) of phonetic segments. In these latter cases, it seems to be unnecessarily complicated and unconvincing to claim that the error originated from intrapsychic conflicts. Still, these more common speech errors demand an explanation.

Topic-089: Parallel Models of Linguistic Planning

Speech errors from both spontaneous speech as well as laboratory studies have provided researchers with a body of data about the production of language. Theories of how we proceed from message to linguistic structure come in two types. Serial models assume that we begin with the overall idea of an utterance, followed by syntactic organization, content words, morphemes, and phonology. Slips of the tongue typically involve just one level of planning, with other levels unaffected. There may be a final stage, after the planning of an utterance but before its articulation, that edits the utterance-to-be in a manner not inconsistent with Freud's ideas. Recent alternatives to the stage models are parallel models of production. These models assume that the linguistic message is organized at semantic, syntactic, morphological, and phonological levels. Activation of a node at one level may trigger activation of nodes

at other levels, and feedback may occur from morphological and phonological levels back to higher levels of processing. Models organized along these lines have been shown to account for several important research findings.

Topic-090: The Role of Agreement

A line of research that may be helpful in evaluating serial and parallel models concerns number agreement. In English, in order for a sentence to be grammatical there needs to be number agreement between subjects and either verbs or pronouns. Thus, we say The concerts this Summer have been wonderful, not The concerts this Summer has been wonderful, and The pitcher's fastball is his best pitch, not The pitcher's fastball is their best pitch. We sometimes make agreement errors that are instructive. For example, in sentence (5), the head noun (time) controls the correct form of the subsequent verb (is), but we sometimes err by using a form of the verb (are) that matches the immediately preceding word (games).

(5) For example, the time for fun and games is over.

Lesson-16

IMPLEMENTING LINGUISTIC PLANS

Topic-091: Articulating Planning and Production Cycles

Once we have organized our thoughts into a linguistic plan, this information must be sent from the brain to the muscles in the speech system so that they can then execute the required movements and produce the desired sounds. However, it is useful to understand certain basic aspects of articulation, in anticipation of our later comparison of the production of signed versus spoken language. Three Systems of Muscles Fluent articulation of speech requires the coordinated use of a large number of muscles. These muscles are distributed over three systems: the respiratory, the laryngeal, and the supralaryngeal or vocal tract.

Topic-092: Planning and Production Articulating Cycle

Several studies have converged on the conclusion that we alternate between planning speech and implementing our plans. Consider first a study performed by Henderson, Goldman-Eisler, and Skarbek (1966), who analyzed the hesitations and fluent speech of individuals being interviewed. Note that there appears to be an alternation of steep parts (primarily pausing) and flat parts (mainly speech). Henderson and his colleagues found that all of the participants showed this cycle of hesitation and fluency, although the ratio of speech to silence varied among speakers.

Topic-093: Self-Monitoring

Speakers routinely monitor their utterances to ensure that they are saying what they wanted to and in the way they wanted to. When errors are detected, speakers interrupt their speech nearly immediately and begin editing their utterance. Both the use of editing expressions and the linguistic structure of the repair itself appear to facilitate listener comprehension.

Topic-094: Editing Expressions

It appears that the editing expression conveys to the listener the kind of trouble that the speaker is correcting. James (1972) analyzed utterances containing expressions such as uh and oh, suggesting that these convey different meanings. For instance, in sentence (1), the uh suggests that the speaker paused to try to remember the exact number of people. In contrast, sentence (2) would be used when the speaker did not know the precise number but was trying to choose a number that was approximately correct.

(1) I saw ... uh ... 12 people at the party.

(2) I saw ... oh ... 12 people at the party.

Topic-095: Insights from Sign Language

We now consider some of the linguistic properties of American Sign Language (ASL). Unlike speech, signs are expressed in visual or spatial form. This enables us to examine the extent to which the grammatical concepts we have just considered generalize to language in a visual modality. American Sign Language is sharply distinguished from manual forms of English that translate English sounds into signs. The best known is fingerspelling, which, as the name implies, translates English words letter by letter into

manual form. It is a secondary gestural system, derived from the English language. In contrast, ASL is independent of English and derived from French Sign Language. Although in the past ASL was regarded as mere pantomime or grammatically deficient in various ways, several decades of scholarly research on ASL have put these ideas to rest. Even if we accept the notion that ASL is an autonomous language, we must ask what its relation to spoken languages is. We will begin to answer this question by considering some of the differences between signed (especially ASL) and spoken languages and then some of the similarities.

American Sign Language has its own set of grammatical rules and is a language that is independent of English. Our preliminary look at ASL indicates some striking similarities in its grammatical organization, suggesting that some of the basic concepts we have been discussing might be universal. At the same time, there are significant differences between ASL and English, and we will examine these further. Because the similarities and differences between ASL and spoken languages are so intriguing, we will return periodically to the study of ASL throughout this book.

Topic-096: Production Rate

Studies of production rate reveal differences between the two modes. Speakers achieve differences in speech rate primarily by varying the number of pauses, whereas signers vary the duration of signed segments and both the duration and number of pauses. These dissimilarities reflect the effects of respiratory functioning on speech but not on signs.

Lesson-17

THE STRUCTURE OF CONVERSATION

Topic-097: The Structure of Conversation

The linguist Charles Fillmore has stated that the language of face-to-face conversation is the basic and primary use of language, all others being best described in terms of their deviation from that base, and this appears to be a reasonable starting point. Let us begin, then, by comparing conversation with other types of discourse. Debates, for example, typically have topics specified in advance, and rules specifying who can speak at a given time and for how long are also usually agreed on ahead of time. The turns of each speaker are identified clearly. Speakers typically speak for an extended period of time. Ceremonies, such as an awards dinner, are also formalized. The topic is specified in advance but not the length of time any given speaker may take. Turns are identified rather clearly, with formal introductions given for each speaker. Again, the length of a given speaker's monologue can be rather long. Meetings are typically less formal than either ceremonies or debates. While it is not uncommon for specific rules, such as Robert's Rules of Order, to be used to organize discussions, the discussions themselves vary, as a general rule, more than those of more formal types of discourse. Also, the number of participants is much larger than for debates, and the contributions of different members vary a great deal. It is not uncommon for one member of a committee to dominate the proceedings. Finally, conversations are the least formal of these four types of oral discourse. The number of participants, the topic, the length of a given speaker's contribution, and many other factors are left undecided or decided on the spot. The relaxation of formal rules is, of course, one of the prime enjoyments of a good, rich conversation. Yet, in the absence of formal rules, we have implicit communicative conventions that help organize everyday conversations.

Topic-098: Opening Conversations

Theoretically the number of possibilities for opening conversations is infinite; in practice we do so in a limited number of ways. Most commonly, we address another person (Hey, Carl), request information (Do you know what time it is?), offer information (Are you looking for someone?), or use some form of stereotyped expression (Hello) or topic (Strange weather lately, eh?). These serve to get the listener's attention and often lead to stock replies. This quickly establishes the alternation of turns that is central to conversation: A asks a question, B replies, followed by a sequence of the form ABABAB.

Topic-099: Closing Conversations

Conventions are also at work when we close conversations. Schegloff and Sacks (1973) suggest that one way to end a conversation is to present a preclosing statement like we-ell, so-o-o, or OK, which signals a readiness to end the conversation. The listener then may accept the statement with an utterance such as yeah or OK. Alternatively, the listener might bring up another topic and the conversation would continue. Here is an example of the latter (from Clark, 1994, p. 1004):

June: yes

Daphie: thanks very much

June: OK?

Daphie: right, I'll see you this

June: because there how did you beat him?

Daphie: no, he beat me, four one (laughs)

June: four one

Daphie: yes, I was doing quite well in one game, and then then I—I lost

June: oh, how disgusting

Daphie: yes

June: OK. Right

Daphie: right

June: see you tonight

Daphie: right, bye

June: bye love

Notice that June, in the third line, signals a potential end to the conversation (OK?) and Daphie seems to reciprocate (right, I'll see you this), but then June brings up another topic. The topic continues for some time until the end of that topic leads to the end of the conversation as a whole. Albert and Kessler (1978) list several ways in which we end conversations, including summarizing the content of the conversation, justifying ending contact at this time (I have another meeting), expressing pleasure about each other, making reference to the ongoing relationship and planning for future contact (see you later), and wishing each other well (take care, have a good trip). Albert and Kessler propose that these closing moves form a sequence, with the items occurring in the order indicated earlier. Their evidence supports such a sequence; for example, speakers were more likely to use summary statements at the beginning of the ending sequence and well-wishes at the end. In addition, use of closing sequences was reciprocal: Listeners tend to respond to summaries with agreement, to positive statements with similar statements, and to well-wishes with good-bye. By presenting one of these closing statements and having one's conversational partner reciprocate, the conversationalists are implicitly negotiating an end to the conversation. It is different with young children, of course. When they are done with a particular conversation, they simply walk away.

Topic-100: Taking Turns

Conversations become more complicated when more than two people are present. Nevertheless, the single-most outstanding fact about conversations is that they run so smoothly in the absence of formal rules. How do speakers avoid ''bumping into'' one another in the course of conversations? According to Sacks and colleagues (1974), turn taking during conversations operates by three implicit rules. The first rule states that the current speaker is allowed to select the next speaker. This is often done by directing a question to another person. The second rule is that of self-selection: If the first rule is not used, another

person may speak up. The third rule states that the current speaker can continue, although she or he is not obligated to do so. These rules are ordered: The first one takes priority over the second, which takes priority over the third. If speaker A addresses a comment specifically to B while C starts to talk, B has the floor.

Topic-101: Negotiating Topics of Conversations

It is not enough, however, merely to take turns with others in conversation. As Grice has noted, there is a strong social convention to ‘‘be relevant.’’ In conversations, this means sticking to the topic and tying one’s comments to those of the previous speaker. Schank argued that there are, indeed, rules of this kind, although it is probably more accurate to say that they govern rather than severely restrict our responses. This is reflected in the observation that while some responses are clearly odd, a wide range of ‘‘acceptable’’ responses to any statement is possible.

Topic-102: Identifying Participants and Nonparticipants

Clark has pointed out that conversations often take place in a context in which various types of nonparticipants are also present. Consider Figure 9.1. Suppose Alan asks Barbara a question. Alan and Barbara then are participants in the conversation. Suppose Connie has been present during the conversation but is not directly involved in the question. She is a side participant in the conversation. Others within earshot are overhearers, who come in two varieties. Bystanders are those who are openly present but do not participate in the conversation. Eavesdroppers are those who listen in without the speaker’s awareness. Many conversational situations bring these roles into play. For example, if I am having lunch with Hal and Greg stops by, I may, after introducing the two, chat briefly with Greg in such a way as to define Hal as a side participant. I might, for example, ask Greg how his family is, knowing that a family member had been seriously ill some time back. My question and Greg’s answer can be phrased in such a way that Hal is completely unaware that anything significant has been discussed. Later, if Greg asks him a question, Hal is once again a full participant in the conversation. We resort to a variety of strategies when dealing with over hearers, including disclosure, concealment, and indifference (Clark & Schaefer, 1992). Consider a situation in which a man and a woman were served by an inept waitress in a restaurant. The waitress dropped the man’s forks on the floor but did not replace

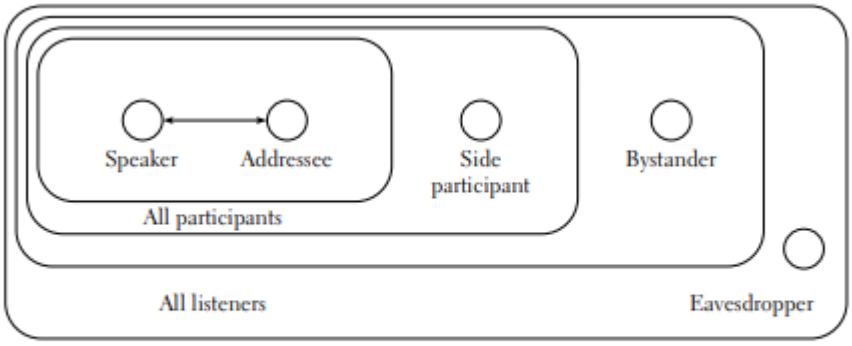


FIGURE 9.1 Different roles in conversations. (From *Using Psychology,* by H. H. Clark. Copyright © 1996 Cambridge University Press. Reprinted by permission.)

them. After the waitress brought the food but was still within earshot, the man asked his companion, Could I use one of your forks? In this instance, the speaker's apparent intent was to allow the bystander to hear him without having to confront her about her lapse. Thus, although the waitress is a bystander, the intent is to disclose the information that is communicated to the dinner companion. As another example, when we are at an airport, trying to say good-bye to a loved one, all sorts of strangers are nearby. Although we may wish to engage in some private conversation, there are many potential eavesdroppers. We resort to a variety of strategies in these kinds of situations to conceal our meaning from eavesdroppers, including referring to personal events (for example, the event we talked about yesterday) and using private codes such as in-group jargon or even foreign languages. These points merely scratch the surface of what is a complex but poorly understood process. The main point is that when speakers address their listeners, they must also take over hearers into account. I have to this point sketched out a series of general principles about how conversations take place—taking turns, distinguishing participants from nonparticipants, and so on. But this characterization raises the question ‘‘How general are these principles?’’ In the following sections, we explore two ways of answering this question. First, we look at whether these principles apply equally to various types of participants, such as friends and acquaintances or males and females. Then, we examine whether these principles apply equally well to different conversational settings, with particular emphasis on psychotherapy as a form of conversation.

Lesson-18

CONVERSATIONAL PARTICIPANTS

Topic-103: Friends and Acquaintance

Common ground: One concept that is helpful here is what Clark calls common ground, which refers to the shared understanding of those involved in the conversation. For knowledge to qualify as common ground, person A must know a given information X, and person B must know X, and A must know that B knows, and B knows that A knows, and so on; that is, both parties are aware that they share the information. Some of this common ground is culturally based, such as cultural values, commonly held beliefs, or culturally prescribed roles. For example, when you have a conversation with your academic adviser, your discussion is linked to these roles. Other types of common ground are more personal, in which shared experiences influence the nature of the conversation. It is this personal common ground that is our concern at this point.

Topic-104: Gender Differences in Conversation

Early studies of gender differences found that men interrupt women more than vice versa, a result that has not been found as often recently. Studies of conversational participants flesh out an outline of conversational processes sketched earlier in the chapter while, at the same time, suggesting new avenues for research and theory.

Topic-105: More Recent Work on Interpreting the Conversational Strategies

In recent years, some scholars within linguistics, sociology, and psychology have examined the strategies of interpreting conversations among different participants. The studies of Simkins Bullock and Wildman (1991) and McMullen, Vernon, and Murton (1995) contributed in the most recent work in this area. The primary findings include that there was no evidence that women necessarily worked harder in their conversations with men. One reason that the linguistic differences—tag questions, minimal responses, and so on—do not always differentiate women and men is that couples differ in the ways that they share power. In turn taking, Edelsky recorded the verbal behavior of women and men only to find that there were different kinds of turns; some turns had a clear speaker while others listened or responded; other turns were more collaborative in nature, with several people sharing the turn. Men took longer turns during the former type, but there were fewer differences between genders in the collaborative turns.

Topic-106: Conversational Settings

Conversational settings shape conversational processes. Friends tend to converse in different ways than do acquaintances and strangers. Some studies of gender differences reveal that males speak more and interrupt more than females.

Topic-107: Therapeutic Discourse

For the most part, psychotherapists and related professionals (counselors and so on) attempt to help clients by listening to their concerns and talking to them. When the primary means of achieving therapeutic results is through language, we would expect that therapists are especially skilled at conversational processes. What kinds of special characteristics, then, comprise therapeutic discourse? Or,

to put it slightly differently, what are the special institutional rules of psychotherapy? It might be helpful to begin with an admittedly simplistic model of what therapists do and then examine each of these tasks in terms of conversational processes. We may distinguish three main tasks during therapy. First, the therapist listens carefully as the client reports experiences, issues, and concerns. Second, the therapist interprets the client's experiences and symptoms. Third, the therapist collaborates with the client regarding potential courses of action. These tasks are not necessarily organized sequentially; therapeutic sessions interweave data, interpretation, and suggestion in a complex pattern.

Consider first the process by which the client presents experiences to the therapist. Just as the therapist is the authority on the process of interpreting emotional experiences, it is the client who is the authority on the experiences themselves. Thus, sessions usually begin with statements of experience from the client, often in narrative form. The therapist does not challenge the client's reporting of experiences, for these statements provide the ''raw data'' for the therapeutic session. In contrast, it is acceptable and sometimes useful for the therapist to challenge the client's interpretation of another person's experiences, because the therapist is the expert on the interpretation of emotions. Consider the example of a client (C) reporting a given event and simultaneously interpreting it and the response of the therapist (T).

Topic-108: Other Forms of Institutional Discourse

Relatively little work has been done on conversations in other institutional settings, but at least a preliminary comparison with therapeutic discourse may be attempted. As we have already seen, most institutional settings identify a particular individual (therapist, judge, academic adviser, physician, and so on) as the authority figure. In addition, we have seen that although psychotherapists are authority figures, they are careful in the ways that they exercise their authority. Judges, by contrast, are not as timid. In a court of law, there are more clearly prescribed patterns of allowable questions and answers, and most judges do not hesitate to control their courtrooms when matters tend to get out of hand. It is not uncommon to hear judges, for example, tell attorneys who have strayed too far on a given topic to shut up (Jones & Beach, 1995). Physicians probably occupy an intermediate position on a continuum of how strictly or loosely institutional authority is wielded. Like therapists, physicians require data from the patient to be of much help, and good physicians listen carefully to their patients' symptoms and concerns. Also like therapists, physicians reserve the role of interpreting these symptoms, often with the aid of various diagnostic tests. Once the test results are in, the physician interprets their significance to the patient and either recommends a particular course of action or outlines the alternative possible actions (Parsons, 1975). Particular interest has centered on the diagnostic part of the office visit: how and in what way the physician communicates the diagnosis of the condition to the patient. Diagnoses may vary from a single word (for example, bronchitis) to a detailed description of a condition. As Heath (1992) has observed, the diagnosis is a pivotal point in the consultation between patient and physician. It marks the end of the ''data-gathering'' phase and begins (and in fact is the basis for) the discussion of possible treatments. And it is the province of the physician to form this medical judgment. If the patient offers candidate diagnoses, the physician is likely to defer consideration of them until the examination or diagnostic tests are complete.

Lesson-19

EARLY LANGUAGE ACQUISITIONS

Topic-109: Prelinguistic Communication

Until the early part of their second year, infants communicate with their world primarily in nonverbal ways: they tug at people's clothes, point at desired objects, and wave bye-bye. These gestures, though basic, reveal a good deal about the infant's understanding of how communication works. It appears that the emergence of these communication skills is made possible by advances in the child's understanding of how actions can be used as means for achieving desired goals. These advances take place in the first year of life, suggesting that infants' understanding of communication precedes and facilitates much of the child's acquisition of phonology, syntax, and semantics.

Topic-110: Prelinguistic Gestures

Despite the richness of the language infants receive in the first year of life, it is some time before they are able to speak themselves. Before they use language to communicate, they communicate with gestures. Well before 10 months of age, children engage in a lot of vocal behavior that appears to have some communicative value. Children's smiles and (most definitely) cries elicit parental behavior. Moreover, different cries are discriminated by parents, and these yield responses that differ in urgency as well as type. Still, these sounds are not true forms of intentional communication because infants do not display flexible, goal-directed behavior. For example, if a cry is ineffective in obtaining adult attention, young infants do not turn to another behavior, such as banging an object against the side of the crib. Thus, although infants' cries generally elicit parental responses, the infant is not using the cry for that purpose. Rather, it is simply a built-in response with predictable consequences.

Topic-111: Early Phonology

Children's acquisition of the sound system of their language does not occur in isolation of the communicative processes we have just discussed. Rather, children come to the task of learning phonology with some knowledge of how to communicate in nonverbal ways. The prelinguistic infant knows how to use gestures to make assertions and requests and, once early speech sounds are mastered, they are quickly used for these same communicative functions. The child's first attempts at producing sounds, however, have more to do with practicing with the sound system than with communicating with others. Eventually, the abilities to communicate without words and vocalize without meaning merge into a productive and communicative speech. The task of identifying what the child knows about phonology is difficult, for the ways in which phonological knowledge is expressed can often be rather indirect. Consider again the example presented at the beginning of the chapter, in which a child named Lisa pronounces her own name as Litha but objects when an adult does the same. Apparently a child can perceive a distinction that she cannot produce, an occurrence that has been christened the fis phenomenon after a child who called fish fis (Berko & Brown, 1960). Thus, we cannot simply look at children's production to assess their perception of the phonology of their native language. Our survey of phonological development begins with the child's perception of speech, and then turns to the production of speech.

Topic-112: Early Words on Lexical Development

Children begin by focusing on words related to the here and now, an observation that fits well with Piaget's description of the sensorimotor period of cognitive development. Many of their early words consist of nominals that refer to concrete aspects of their environment. They learn the names of the toys they play with, the clothes they wear, and the food they eat. Children have a bias toward objects that change or move in response to their actions; they are more likely to learn the word ball than the word chair. Their early vocabulary, however, is not limited to nominals. As Nelson has shown, children use words from various grammatical classes early on. Nelson found that general nominals such as ball and car were most prevalent, followed by specific nominals (Mommy), action words (up, go), modifiers (dirty, pretty), personal and social words (please, want), and function words (what, for).

Topic-113: Early Grammar

Children begin to speak in word combinations by about 2 years of age, and over the course of the next few years, they make impressive advances in grasping the grammar of their native language. These aspects of grammar, of course, differ from language to language. Children learning English must pay close attention to word order, which is the primary way in which meaning is signaled. Those acquiring a more inflected language, such as Turkish, must spend a relatively greater amount of time learning the different forms or conjugations of verbs. These language differences surely play an important role in language acquisition. There are, however, important similarities in children's early grammatical efforts. Slobin has suggested that at least the early stages of grammatical development are similar in all of the world's languages. Studies have now been conducted on dozens of different types of languages, and these have found that what Slobin calls basic child grammar is a universal construction of children learning their native language. In this section, we will consider the structure of basic child grammar and some ideas researchers into child language have developed as to what rules comprise this grammar as well as review evidence that indicates individual differences in early language acquisition.

Topic-114: Emergence of Grammatical Categories

The structure of early utterances: It may seem odd to talk of two-word utterances as sentences having a grammatical structure. After all, early utterances such as all gone baby and more crayon are hardly grammatical by adult standards and may appear to be little more than random combinations of previously acquired words. Most investigators of child language, however, agree with Sachs that ''the two-word utterances he [the child] says are neither simple imitations of adult utterances nor random combinations of the words he knows. Rather, they follow from the system that the child is using to express meanings at that time.'' Several lines of evidence support this view. First, when children first put words together, they tend to combine content words and leave out function words, thus producing utterances such as more milk, push truck, and so on. This is similar to the way adults phrase utterances when sending a telegram, where there is a premium on word cost: lost money, send cash, and so on. This suggests that the child has an understanding of this grammatical distinction as well as an intuitive appreciation that content words may be more informative than function words. Second, as children put words together, particular words are put in particular positions in the sentence. A child, for example, is much more likely to say all gone sock than sock all gone. Thus, the child is not merely stringing together separate words that she knows but is putting them together in a systematic way.

Interpretations of early multiword utterances: What, then, is the child's system? Several different possibilities have been explored. Consider a simple utterance such as baby cry. We can describe this in syntactic terms as a subject followed by a predicate. Alternatively, we can describe it in semantic terms as an agent (an animate being who is the instigator of an action) and an action. Or we can describe it in positional terms, with baby being a word typically in the initial position and cry as typically in the latter position. These characterizations differ in degree of abstractness, with the syntactic description as most abstract and the positional description as least abstract. The syntactic description does not appear to fit children's utterances, at least not in the earliest stages. The subject of a sentence may be an agent, but it could also be an object (The book is on the table), an instrument (The nail pierced the wood), or a location (Dallas is dull).

Acquiring grammatical categories: Ultimately children must grasp categories that are defined in syntactic terms, and there has been much debate concerning how they do this. One suggestion is that they use their knowledge of semantic relations to learn syntactic relations. This process is known as semantic bootstrapping. As Bowerman puts it: children launch their syntactic careers by learning simple order rules for combining words which in their understanding perform semantic functions such as agent, action, and object acted upon, or perhaps other even less abstract semantic functions. Through additional linguistic experience, a child may begin to recognize similarities in the way different semantic concepts are formally dealt with and to gradually reorganize his knowledge according to the more abstract grammatical relationships which are functional in the particular language he is learning. For instance, children ordinarily use sentences in which the grammatical subject is the semantic agent. Then they use this correspondence to begin learning the grammatical category of subject. As children become more linguistically experienced, they induce grammatical concepts from the semantic-positional configurations already acquired. Exactly how this is done is still very much up in the air, but Maratsos has provided evidence that children acquire some of the concepts during the preschool years. Maratsos suggests that children do this by paying attention to the grammatical operations that given linguistic forms take. For example, although like and fond are similar semantically, like takes the grammatical morpheme -ed, whereas the past tense of fond is formed with the auxiliary be (was fond).

Lesson-20

LATER LANGUAGE ACQUISITIONS

Topic-115: Later Grammar

Children make impressive strides in their acquisition of grammar in their first 2 to 3 years. They develop the ability to form simple, functional utterances such as Daddy chair that express their meaning relatively directly. Later grammatical acquisitions are built on earlier accomplishments. In this section, we look at two such acquisitions: grammatical morphemes and more complex sentence constructions.

Topic-116: Cross-linguistic Differences in Later Grammar

Children acquire grammatical morphemes gradually throughout the preschool years. As children acquire morphemes, they use them in productive ways, sometimes producing errors such as over-regularizations. Complex syntactic constructions such as negatives, questions, and relative clauses are also developed during the preschool years. Ease of acquisition appears to be related to the formal and conceptual complexity of the construction, along with certain processing limitations in the child.

Topic-117: Metalinguistic and Discourse

While a good deal of our linguistic knowledge is tacit, explicit awareness of linguistic units and processes is essential for writing, reading, and other aspects of language. The emergence of linguistic awareness takes place after the child's basic grammatical system is organized, in the late preschool and early school years.

Topic-118: Discourse Processes in Children

Children as young as 2 or 3 years old are able to tell stories and participate in conversations, albeit in limited ways. During the subsequent preschool years, they become more flexible and skilled conversationalists and storytellers. They use a greater variety of cohesive devices, learn new genres, adapt their speech to different listeners, and formulate and justify requests of others. As children enter school, they have an impressive repertoire of communication skills.

Topic-119: Language in School

The language skills that children bring to the school setting are important because language is the predominant means of instruction in a wide variety of subject matters. But the language of the school is different from the language of home and of the playground, and children must adapt to these differences as they enter formal schooling. The main focus in school is on oral communication in the classroom, and then discusses the relationships between reading and language development.

Topic-120: Reading and Language Development

There is, of course, another major difference between language in the school and language before school. Schooled language is increasingly written language, and the demands of written language pose a considerable challenge for most children entering formal schooling. The beginning reader is already a fluent language user. Many of the comprehension skills that have been acquired to deal with oral language are also applicable to reading. These include the ability to extract the meaning of a sentence,

interpret that sentence in a given communicative context, draw inferences from individual statements, and monitor one's own comprehension. These may be referred to as general comprehension skills. In addition, learning to read involves mastering other skills specific to the written language. These include using eye movements to scan sentences in a text, extracting the visual features of letters and words, reading from left to right on a page (in most languages), and relating printed language to spoken language in some way. It is likely that some of these skills may be acquired rather easily, but others may take substantial time and effort. What this suggests is that reading involves a variety of skills that are well coordinated only in the mature reader. That is, the early reader is consumed with the task of identifying even familiar words in a new and unfamiliar mode. Early readers thus are less able to attend to the overall meaning of a text and to apply those comprehension strategies acquired in the acquisition of oral language. As children master reading-specific skills, they are increasingly able to bring their substantial repertoire of linguistic skills to bear on the task of reading.

Lesson-21

BILINGUALISM AND SECOND LANGUAGE ACQUISITIONS

Topic-121: Contexts of Childhood & Bilingualism

The meaning and definition of bilingualism varies tremendously from situation to situation. Some individuals are bilingual because they live in bilingual regions; some become bilingual because their home language is not the same as their school or business language; some become bilingual because colonization has imposed another language. Others become bilingual because they have studied a language in school or because they grew up in homes with two languages. A distinction has been drawn between simultaneous bilingualism and sequential bilingualism. When children acquire two languages at the same time, their bilingualism is referred to as simultaneous bilingualism. Sequential bilingualism occurs when an individual (child or adult) acquires a second language after already acquiring a native language. This type of bilingualism is also referred to as second-language acquisition. Most commonly, children learn two languages simultaneously when they are born into a community that is bilingual. In some communities, bilingualism is simply expected.

Topic-122: Bilingual First-Language Acquisitions

Popular ideas about bilingual language development are curiously mixed. Because bilingualism is the norm in many parts of the world and younger children are often regarded as superior language learners than older children or adults, some believe that young children can effortlessly acquire two or more languages simultaneously. At the same time, some parents and educators fear that bilingual language exposure may slow children's language development and even cause them to mix or confuse their languages. We will examine some of these ideas. Do bilingual children learn each language in a similar way and in a way that is also similar to how monolingual children acquire their language? And are bilingual children able to learn two languages at the same rate as monolingual children learn one, or does the presence of a second language slow their development? And is language mixing or interference between languages inevitable? Much of what we know about bilingual language acquisition comes from early case studies based on diaries kept by parents.

Several concerns arise regarding the use of case studies. One is that it is impossible in the context of a case study to know precisely what circumstances may have caused a particular developmental outcome. If, for example, a family moved when the child was 2 and the child's language changes at that point, it is not possible to know whether it would have changed anyway. Another concern is that parents may have difficulty being fully objective when recording their children's language development. Outstanding utterances may be preserved better than errors. Nonetheless, a good deal can be gleaned from these studies, particularly when the data are recorded carefully. In many instances, case studies have provided detailed data that inspired subsequent studies of bilingual language acquisition.

Topic-123: Second Language Acquisitions

Many children learn a second language after attaining considerable proficiency in their native language. For ease of exposition, the first language is referred to as L1 and the second language as L2. As Gass and Selinker (2001) point out, the boundaries of child second-language acquisition are somewhat arbitrary. At one end, the term excludes those children we have just considered who are acquiring two or

more languages simultaneously. At the other end, child second-language acquisition generally excludes individuals who are acquiring L2 beyond about 12 years. The reason for this exclusion is that it is commonly thought that there is a critical period for L2 acquisition and that acquiring a second language after puberty is much more difficult. For our purposes, it is generally agreed that child second-language acquisition extends from about 5 to 9 years, or after the primary language is essentially acquired but before any possible effects related to a critical period.

Topic-124: Metalinguistic Awareness

If children learn two languages, they learn two ways of referring to objects in their environment. Does the bilingual child who has learned that the cat and el gato refer to the same animal better understand that language is arbitrary, the principle that there is (in general) no relation between a word and its referent? Leopold thought so, stating that ‘‘the most striking effect of bilingualism was a noticeable looseness of the link between the phonetic word and its meaning.’’ This phenomenon may be broader than word meaning. It may be that bilingual children are in general more attentive to language than monolingual children. As Vygotsky (1934/1986) has suggested, a bilingual child would ‘‘see [one’s] language as one particular system among many, to view its phenomena under more general categories, and this leads to an awareness of [one’s] linguistic operations.’’

Topic-125: Cognitive Control

Another cognitive consequence of bilingualism may be cognitive control, the ability to selectively attend to some stimuli and ignore others. A fascinating recent report by Bialystok, Craik, Klein, and Viswanathan (2004) suggests that bilingualism may help to offset age-related losses in cognitive or executive control. Bialystok et al. (2004) used a task known as the Simon task (Lu & Proctor, 1995). The task is based on stimulus–response compatibility and assesses the extent to which a person can ignore irrelevant spatial information. In the Bialystok et al. study, investigators presented colored stimuli to the left or right side of a computer screen. Each of the two colors was associated with a response key that was also on one of the sides of the keyboard. On congruent trials, the stimulus and the key were both on the same side, whereas on incongruent trials, they were on the opposite side. In general, individuals are faster to respond to congruent trials than to incongruent trials. Moreover, the difference in reaction time—referred to as the Simon effect—is greater for older adults than younger adults. Apparently, the ability to selectively attend to the most relevant stimuli is an ability that declines somewhat with age. Interestingly, Bialystok et al. (2004) found that bilingualism was associated with smaller Simon effects in both middle-aged and older adults. The bilingual advantage was greater for the older adults. The authors suggest that the use of two languages encourages development of cognitive control mechanisms, such as when one has to suppress a word in one language in favor of another language.

Topic-126: Problem Solving and Creativity

It was once commonly accepted by scholars that bilingualism led to cognitive impairment. For example, the prominent linguist Otto Jesperson stated that ‘‘the brain effort required to master the two languages instead of one certainly diminishes the child’s power of learning other things which might and ought to be learnt’’ (p. 148). Many early psychologists also concluded that bilingualism had a detrimental effect on children’s intellectual development and academic performance. As Hakuta has pointed out, however, many of these studies had serious methodological flaws. Many studies failed to control for

group differences in socioeconomic status between monolingual and bilingual samples. Thus, the apparent problems associated with bilingualism may have instead been due to low socioeconomic status; the bilingual children usually came from poor backgrounds. In addition, these studies did not always ensure that the bilinguals were truly fluent in both languages. Some of the early investigators ‘‘assessed’’ bilingualism through family names. Obviously, this procedure leaves considerable doubt whether the ‘‘bilingual’’ children were really bilingual.

Lesson-22

THE LINGUISTIC ENVIRONMENT

Topic-127: Introduction of Process of Language Acquisition

One way to think about the factors that play a role in language acquisition is to identify necessary and sufficient conditions. A necessary condition is one that must be present in order for language to occur in a normal way. A sufficient condition is one that, if present, ensures that language will develop normally. It is rare for a complex behavior to have a single sufficient condition. On the contrary, it may have several necessary conditions, none of which is sufficient by itself to ensure a positive outcome. Think, for example, of the conditions that must be present to ensure a child with a healthy self-concept or a marriage that is stable over time. Most behaviors have multiple causes. Three classes of variables have been proposed as necessary or sufficient conditions for language acquisition. These are environmental, cognitive, and innate factors. Although each of these is sometimes discussed to the exclusion of the other two, it is likely that all three classes of variables are needed for a complete account of language acquisition. If so, a successful theory of acquisition will be one that explains the interactions among these factors.

Topic-128: Feral and Isolated Children

The first question has been addressed through studies of feral and isolated children. Feral children are those who have grown up in the wild. Lane presented a detailed description and analysis of a boy named Victor, who was found in the woods of France in 1797. Peasants spotted the boy running naked through the woods, searching for potatoes and nuts, and he was subsequently captured by some hunters and brought to civilization. They called him the Wild Boy of Aveyron, after the province in which he was found. The Wild Boy came to the attention of Jean-Marc-Gaspard Itard, a young physician. At the time of his capture, Victor was thought to be about 12 or 13 years old. He had no speech, although his hearing was normal and he uttered some sounds. Other physicians thought that Victor was deaf and retarded, but Itard was optimistic that he could be trained to be socialized and to use language. Itard worked intensively with Victor for 5 years, using techniques of language training and behavior modification similar to those used by modern researchers. For example, he taught Victor to name objects such as milk by presenting the object and then the French word for it. Victor would name objects that were presented but would not request them by using their names. Victor had other problems with language. One was that he developed a gestural communication system that interfered with the language training. Lane suggests that the signs might have supplanted his need to acquire spoken language. Another problem was Victor's understanding of words. Victor associated a particular name with a particular object, rather than with a class of objects. For instance, when taught the word for book, he initially applied it to only one book. Only with considerable effort could Itard teach Victor to generalize names for classes of objects.

Topic-129: The Critical Period Hypothesis

There is a period early in life in which we are especially prepared to acquire a language is referred to as the critical period hypothesis. Many investigators who favor the critical period hypothesis suggest that there are neurological changes in the brain that leave a learner less able to acquire a language, although the nature of these supposed changes is not well understood. Most commonly, these changes are

assumed to occur near puberty. Surprisingly, although the critical period hypothesis has evoked much discussion, there have been few empirical studies that have tested the hypothesis. A landmark study was reported by Johnson and Newport (1989) who examined native speakers of Korean and Chinese who had immigrated to the United States at various ages between 3 and 39 years of age. On the average, the participants who arrived earlier (that is, before puberty) had been in the United States about the same amount of time as those who had arrived later. They also included a group of native speakers for comparison purposes.

Topic-130: Critical Period Effects in Second Language Learning

The evidence from second-language acquisition research has not provided unequivocal evidence for the critical period hypothesis. The best we can say is that young children generally learn L2 better than older children and adults, at least in the long run. Moreover, the advantage that younger learners display in some studies may be due to biological changes (as assumed in the critical period hypothesis), environmental factors, cognitive changes, or some combination of factors. Clearly, we have much more to learn about how the capacity for language acquisition changes over the life span.

Topic-131: Motherese

Language development deals with the ways adults speak to young children. Adult-to-child language, which has been called motherese, differs in a number of ways from adult-to-adult language.

Topic-132: Some Characteristics of Adult Speech to Children

In general, speech to children learning language is shorter, more concrete, more directive, and more intonationally exaggerated than adult-directed speech. Of course, just because we speak in these ways to children does not necessarily mean that this speech will assist them in acquiring language. As a matter of fact, some of the properties of adult-to-child language are also seen when adults speak to dogs and even to plants. The effect of this form of speech on dogs and plants is not known. Although it would appear that such properties would assist children in their language development, data on this basic question are relatively scarce, and widely different opinions exist on the matter (DePaulo & Bonvillian, 1978; HoffGinsburg & Shatz, 1982; Marshall, 1980; Snow, 1979).

Lesson-23

COGNITIVE PROCESSES

Topic-133: Cognitive Processes

We saw that parents provide a structured environment for children who are acquiring language. Although some of these speech adaptations facilitate development, they are not sufficient to explain language acquisition. To benefit from these language lessons, children must have certain cognitive prerequisites. These include procedures for registering, storing, and analyzing linguistic information. A simple analogy may be helpful here. Suppose you are taking a course in philosophy. The instructor is well prepared, lectures well, and is available when students have problems. Although all of these characteristics are beneficial, they do not guarantee the desired learning outcome. A course in philosophy typically requires students to think abstractly and write analytical essays. Students who lack these skills may have considerable difficulty even if the course material is presented in an organized fashion. The same is true for the child learning language. A structured environment is helpful only if the child has the ability to take advantage of the structure that is provided.

Topic-134: Operating Principles

One of the most productive approaches to the question has been Slobin's work on operating principles. We may think of operating principles as children's preferred ways of taking in (or operating on) information. These principles have proven useful in explaining certain patterns in early child grammar. For instance, children in virtually all languages use fixed word order to create meanings, even though some languages have much freer word order than others.

One problem with the notion of operating principles is that it is open to the charge of circularity. The evidence for operating principles is found in children's language patterns, and then the principles are assumed to account for the patterns. Independent evidence of these operating principles would be helpful. It might be possible to see evidence of these principles in cognitive domains other than language, but, as written, they tend to be fairly specific to language. Slobin is noncommittal on the question of whether these processes are specific to language (modular) or whether they can be understood in terms of general cognitive processes. We turn now to cognitive processes that are more clearly independent of language.

Topic-135: Sensorimotor Schemata

Another way of characterizing the child's cognitive system comes from the work of Piaget who expresses the belief that children undergo several qualitative shifts in their thinking throughout development. Piaget refers to the first 2 years as the sensorimotor period of development because the schemata the child uses to organize experience are directly related to taking in sensory information and acting on it. Sensorimotor schemata include banging, sucking, and throwing. The major development that culminates near the end of the sensorimotor period is the acquisition of object permanence, the notion that objects continue to exist even when they cannot be perceived. Once object permanence is acquired, the child is no longer at the mercy of immediate stimuli but can respond on the basis of stimuli no longer present. We would certainly anticipate that developments of this magnitude would be related to the child's language development. More specifically, we can make two predictions about child language. One is that the very young infant, who has not yet acquired object permanence, should use words that refer to

concrete objects in the immediate environment, especially those that the child easily manipulates. This appears to be the case because early child language consists of a large number of ‘‘here and now’’ words.

Topic-136: Whole Object Bias and Taxonomic Bias

Clearly adults present children with a simplified and orderly pattern of data that would seem to facilitate vocabulary development. The question to be pursued here is not whether such adaptations are necessary for normal language acquisition but whether they are sufficient. As children are exposed to adult words for objects, many referents are possible for these words. It seems unlikely that children explore every possible meaning of a given word, given what we have learned about the speed of lexical acquisition. Adult naming practices help the child, but some theorists believe that the child must have certain expectations about word learning to benefit maximally from these lessons. The notion of a cognitive constraint is that children are constrained to consider only some of these possibilities or at least to give priority to them over others. A subsequent study presented children with novel labels for objects for which they already had labels, such as claw for hammer. In this instance, the children interpreted the novel term as applying to only one part of the object.

Research on cognitive prerequisites for language development has proceeded on the assumption that certain cognitive processes must be in place for the child to benefit from structured language lessons. We have considered two types of cognitive processes that may assist or guide language development. Operating principles are preferred ways of taking in linguistic information. Sensorimotor schemata are ways of organizing the world that emerge in the first two years of life. The general prediction that the cognitive position makes is that children with a given cognitive prerequisite should acquire corresponding aspects of language more rapidly than those without the prerequisite. Studies of sensorimotor schemata, however, suggest that cognitive processes do not emerge prior to language but rather simultaneously with language. In addition, we have discussed the role of cognitive constraints in children’s vocabulary acquisition. Considerable evidence suggests that constraints guide children’s acquisition of lexical items. There is continued debate regarding the best way to characterize these constraints. Finally, we saw that in certain individuals there are dissociations between language and cognition: relatively strong cognitive skills with weak linguistic skills or relatively strong linguistic skills with weak cognitive skills. These observations suggest that cognitive development, although it is generally associated with language development, may not be either necessary or sufficient for it.

When children encounter a new label, they prefer to attach the label to the entire object rather than to part of the object. To return to the earlier example, when someone points to an object and says dog, the child assumes that the word is a label for the entire object rather than the dog’s tail.

Whole object bias in developmental psychology: For example, if a child is shown and given the label "truck", the child will assume truck refers to the whole object instead of the tires, doors, colors or other parts. If a researcher points to an object while simultaneously saying a new name, children will assume that the new label refers to the whole object. Ellen Markman pioneered work in this field. Her studies suggest that even in cases where color or dynamic activities are made salient to children, they will still interpret the new word as a label for whole objects. Furthermore, infants hold a primitive theory of the physical world that is guided by three constraints on the behavior of physical bodies: objects must move as wholes, objects move independently of each other, and objects move on connected paths. It is

suggested that these three constraints help guide children's interpretations of scenes, and, in turn, explain how the whole object bias reflects the nonlinguistic status of objects.

In addition, children seem to use a taxonomic bias: they will assume that the object label is a taxonomic category rather than a name for an individual dog. For example, they will assume that dog is a label for a group of animals, not just Fido. Ordinarily, children focus on thematic relations between objects when categorizing. If given milk, a spoon, or a car, children will group each item with a cow, soup, or a stop sign, respectively. However, when children hear a new label they shift their attention to taxonomic relationships, even though they consider thematic relations to be a good way of organizing the objects themselves. Instead of cow being linked to milk, it would be linked to pig or horse. The new word is assumed to refer to other objects within the same taxonomic category. Ellen Markman's early work showed this constraint at work. When two- and three-year-olds were presented with two basic-level objects, two different kinds of dogs, and a third thematically related object, dog food, they showed a tendency to select a dog and dog food; however, if one of the dogs was labeled with an unfamiliar word, the children were more likely to select the two dogs.

Topic-137: Mutual Exclusivity Bias

It refers to the fact that a child who knows the name of a particular object will then generally reject applying a second name to that object. Several experimental studies by Markman and Wachtel have supported the notion that children use mutual exclusivity in acquiring new words. In one, 3-year-old children were presented with pairs of objects. One member of each pair was an object for which the child already had a label (such as a banana, toy cow, or spoon), and the other was an object for which the child did not have a label (such as a lemon wedge press or a pair of tongs). The children were then asked by a puppet to show me the x (x was a nonsense syllable). The children were much more likely to select the novel object. A subsequent study presented children with novel labels for objects for which they already had labels, such as claw for hammer. In this instance, the children interpreted the novel term as applying to only one part of the object.

Topic-138: Impairments of Language and Cognition

Our knowledge of the relationships between language and cognition has also been advanced by studies of children and adolescents with cognitive or linguistic impairments. The notion that a close relationship exists between language and cognition has generally been supported by studies of individuals with Down syndrome (reviewed by Rosenberg, 1982; but see Rondal, 1993). These individuals tend to have language delays that are proportionate to the severity of their cognitive disability. However, in certain individuals, there can be significant discrepancies between the level of cognitive functioning and the level of linguistic functioning.

Lesson-24

INNATE MECHANISM

Topic-139: The Language Bioprogram Hypothesis

One version of how innate processes operate in child language has been called the language bio program hypothesis by Bickerton (1981, 1983, 1984, 1999). Bickerton's claim, is that we, as children, have an innate grammar that is available biologically if our language input is insufficient to acquire the language of our community. It is something like a linguistic backup system.

Pidgins and Creoles: To understand this idea more fully, we have to make a few distinctions. A pidgin is 'an auxiliary language that arises when speakers of several mutually unintelligible languages are in close contact' (Bickerton, 1984, p. 173). Typically this occurs when workers from diverse countries are brought in as cheap labor in an agricultural community. Immigrant workers come to speak a simpler form of the dominant language of the area—just enough to get by. A creole occurs when the children of these immigrants acquire a pidgin as their native language. Because access to native speakers of the dominant language is usually limited, these children receive the impoverished pidgin version as their primary linguistic input. Bickerton (1983) observes that the conditions necessary to produce creoles have existed numerous times between 1500 and 1900 when various European nations developed labor-intensive agricultural economies on isolated, under populated tropical islands throughout the world. Bickerton's studies have focused on creoles in Hawaii. Although Hawaiian contact with Europeans goes back to the 18th century, it was not until 1876 that a revision of the U.S. tariff laws led to a large influx of indentured workers to harvest Hawaiian sugar. Because Hawaiian creole developed between 1900 and 1920, it was possible for Bickerton to study the development of the creole by studying the speech of people who are still living. In particular, he examined the language of immigrants who moved to Hawaii and that of their children who were born in the first two decades of the 20th century. The speech of pidgin speakers was rudimentary. In many cases, there was no recognizable syntax, and the language resembled a linguistic free-for-all. Some speakers used one word order and others another; the word orders were often related to the speaker's own native language. Moreover, complex sentences were absent in pidgin: pidgin sentences had no subordinate clauses, and even single-clause utterances often lacked verbs. In addition, there was no consistent system of anaphora.

Topic-140: The Language Bioprogram

Despite this impoverished linguistic input, the children of immigrants developed a creole that was relatively sophisticated (Roberts, 1998). It included consistent word order, the use of complex sentences with relative clauses, and the distinction between definite and indefinite articles. Unlike pidgins, the creoles resembled the structural rules of other languages. From these observations, Bickerton concludes that children have an innate grammar that, in the absence of proper environmental input, serves as the child's language system. He calls this system the language bio program. Bickerton (1984) has responded to other possible interpretations of his research. One is that the sophistication found in the children's creoles was based on their access to English, the language of the plantation owners. Bickerton points out, however, that contact between immigrant families and owners was limited and that the Hawaiian creole differed in several respects from English. Another possibility is that linguistic features not attributable to English could be derived from the original native languages of the parents. For example, children whose

parents were Portuguese might incorporate some Portuguese elements into their creoles. Again, the evidence provided by Bickerton suggests otherwise; he found that Hawaiian creole was strikingly similar to creoles created by children in very different parts of the world. The language bio program hypothesis has been further buttressed by studies of language development in congenitally deaf children by Goldin-Meadow and her colleagues. Task specificity refers to the notion that the cognitive processes associated with language use are not general-purpose problem-solving processes but are instead restricted to language. Bickerton goes a step further: Not only is the language bio program specific to language, but it is itself highly specific—a prepackaged, ready-to-go linguistic system.

Topic-141: Parameter Setting

Parameters is a framework within generative linguistics in which the syntax of a natural language is described in accordance with general principles (i.e. abstract rules or grammars) and specific parameters (i.e. markers, switches) that for particular languages are either turned on or off. For example, the position of heads in phrases is determined by a parameter.

Bickerton's language bio program may be thought of as a specific instance of a general innate mechanism called parameter setting. The notion of parameters plays a key role in the concept of universal grammar (Chomsky, 1981). In this view, grammar can be defined in terms of a set of parameters corresponding to each of the subsystems of the language, with each parameter having a finite (usually small) number of possible settings. Various combinations of these parameter settings then yield all of the languages of the world. According to Chomsky (1981), children are born with the knowledge of the parameters and their possible settings. The task of acquiring a language is therefore reduced to identifying which parameter settings apply to one's native language. One parameter is called the head parameter and has been discussed by Cook (1988). Each phrase in the language has one element that is most essential, which is called the head. It is the noun in noun phrases and the verb in verb phrases. The head parameter specifies the position of the head within the phrase.

Topic-142: The Subset Principle

Another way to think about how these parameter settings may be made is through what Berwick and Weinberg (1984) call the subset principle. First, think about languages as subsets of one another. Consider word order. English is a very strict word-order language; Russian allows a small set of admissible orders, and the aborigine language Warlpiri allows an almost total scrambling of word order within a clause. The idea of a subset is that Russian could be considered a subset of Warlpiri with somewhat more restricted word order. In the same way, with respect to word order, English may be considered a subset of Russian.

Topic-143: The Issues of Negative Evidence

One important feature of the way in which the subset principle was formulated deals with the distinction between positive and negative evidence. At the grammatical level, positive evidence is evidence that a particular utterance is grammatical in the language that the child is learning; negative evidence is evidence that a particular utterance is ungrammatical. Children receive positive evidence when they are exposed to an utterance that is not corrected or otherwise indicated as inappropriate.

Children receive negative evidence when someone indicates that a particular utterance is ungrammatical or inappropriate. Pinker (1990) argues that it would be very difficult to acquire a language from positive evidence alone. This notion is based, in part, on some computer simulation studies of language learning done some time ago. This work assumed that children use linguistic evidence to construct hypotheses about the language they are learning, much as a linguist would use such evidence to learn about a language in a foreign land. Gold found that when he wrote a program in which the computer received only positive evidence, it failed to acquire the language adequately. This was presumably because positive evidence is consistent with a great number of different grammars. Without knowing what is ungrammatical in a language, it is impossible to rule out some of the various competing grammars. Pinker (1990) has claimed that, on the whole, parents do not provide sufficient negative evidence to enable a child to learn a language. He argues that although negative evidence is sometimes present, it is not systematically and consistently available to all children acquiring a language, and yet all normal children do acquire a language. Therefore, innate linguistic mechanisms, such as the subset principle, are needed to constrain the child's search processes. Pinker's argument is as follows: A: Positive evidence alone is consistent with too many competing grammars. B: Negative evidence, which could constrain the problem space, is not generally available. C: Therefore, some constraints must be innate. We know that children are not always receptive to the adults' observations about their grammar.

Topic-144: Objections to Innate Mechanisms

To sum up this section so far, studies of pidgins and creoles suggest the presence of an innate backup grammar, the language bio program. Researchers studying parameters have attempted to specify what kinds of linguistic information must be innately present before children can take advantage of the language they receive from their environment. Studies of negative evidence suggest that such evidence is not pervasive enough to present a full account of language acquisition. All of these studies converge on the conclusion that some innate linguistic mechanisms—in conjunction with environmental and cognitive factors—must be present in order for children to acquire language as successfully as most children do. This conclusion has been challenged by Elman, Bates, Johnson, KarmiloffSmith, Parisi, and Plunkett (1996), who raise a number of objections to innate language mechanisms. Let us consider some of these objections and what we can say about them. Discussing the studies of Nicaraguan Sign Language presented earlier in the chapter, Elman and colleagues make the following point:

> We would agree that these phenomena are extremely interesting, and that they attest to a robust drive among human beings to communicate their thoughts as rapidly and efficiently as possible. However, these phenomena do not require a preformationist scenario (i.e., a situation in which the grammar emerges because it was innately specified). If children develop a robust drive to solve this problem, and are born with processing tools to solve it, then the rest may simply follow because it is the natural solution. (p. 390)

Jackendoff has responded that adults also have a 'robust drive' to acquire language, but they acquire pidgins rather than creoles. Thus, something beyond a 'robust drive' seems to be necessary. According to Jackendoff and others that something is an innate mechanism for acquiring language.

Lesson-25

BRIAN MECHANISM AND LANGUAGE

Topic-145: Broca's Aphasia

A person with expressive aphasia will exhibit effortful speech. Speech generally includes important content words, but leaves out function words that have only grammatical significance and not real-world meaning, such as prepositions and articles. This is known as "telegraphic speech." The person's intended message may still be understood but his or her sentence will not be grammatically correct. In very severe forms of expressive aphasia, a person may only speak using single word utterances. Typically, comprehension is mildly to moderately impaired in expressive aphasia due to difficulty in understanding complex grammar.

The speech of a person with expressive aphasia contains mostly content words such as nouns, verbs, and some adjectives. However, function words like conjunctions, articles, and prepositions are rarely used except for "and" which is prevalent in the speech of most patients with aphasia. The omission of function words makes the person's speech agrammatic. A communication partner of a person with aphasia may say that the person's speech sounds telegraphic due to poor sentence construction and disjointed words. For example, a person with expressive aphasia might say "Smart... university... smart... good... good..."

Topic-146: Wernicke's and Conduction Aphasia

The following are common symptoms seen in patients with Wernicke's aphasia:

Impaired comprehension: It deficits in understanding (receptive) written and spoken language.

This is because Wernicke's area is responsible for assigning meaning to the language that is heard, so if it is damaged, the brain cannot comprehend the information that is being received.

Poor word retrieval: The ability to retrieve target words is impaired. This is also referred to as Anomia.

Fluent speech: Individuals with Wernicke's aphasia do not have difficulty with producing connected speech that flows. Although the connection of the words may be appropriate, the words they are using may not belong together or make sense (see Production of Jargon below).

Production of jargon: Speech that lacks content, consists of typical intonation, and is structurally intact. Jargon can consist of a string of neologisms, as well as a combination of real words that do not make sense together in context. It may include word salads.

Awareness: Individuals with Wernicke's aphasia are often not aware of their incorrect productions which would further explain why they do not correct themselves when they produce jargon, paraphasias, or neologisms.

Conduction aphasics will show relatively well-preserved auditory comprehension, which may even be completely functional. Spontaneous speech production will be fluent and generally grammatically and syntactically correct. Intonation and articulation will also be preserved. Speech will often contain paraphasic errors: phonemes and syllables will be dropped or transposed (e.g., "snowball" → "snowall",

"television" → "vellitision", "ninety-five percent" → "ninety-twenty percent"). The hallmark deficit of this disorder, however, is in repetition. Patients will show a marked inability to repeat words or sentences when prompted by an examiner.

After saying a sentence to a person with conduction aphasia, he or she will be able to paraphrase the sentence accurately but will not be able to repeat it, possibly because their "motor speech error processing is disrupted by inaccurate forward predictions, or because detected errors are not translated into corrective commands due to damage to the auditory-motor interface."

Topic-147: Other Aphasias

One rare form of aphasia is called pure word deafness. Behaviorally, such individuals are unable to comprehend language in the auditory modality, although they are still capable of comprehending visual language and producing language in either modality. Anatomically, there is damage to the auditory nerve, which sends messages to the auditory centers in the left hemisphere. In addition, there is a loss of those portions of the corpus callosum (the thick band of fibers that connect the two hemispheres) that send messages from the auditory region in the right hemisphere to the language areas, particularly Wernicke's area, in the left hemisphere. The result is that neither the left nor the right auditory center can transmit information to the language regions, so even though patients can hear some words, they cannot comprehend them. Another interesting form of aphasia is called alexia, which is the dissociation (disconnection) of the visual regions from the language areas. In its most severe form, alexia prevents even the recognition of individual letters or matching of script and print (Goodglass & Geschwind, 1976). Damage to the angular gyrus leads to both alexia and agraphia, the inability to write. It is thought that the angular gyrus serves as an association area in the brain that connects one region with another. In particular, it is important for the association of visual stimuli with linguistic symbols, which influences both reading and writing. Alexia also sometimes occurs without agraphia; in one case (Dejerine, 1892, cited in Geschwind, 1965), damage to the visual cortex on the left side was coupled with an injury to the portion of the corpus callosum that connected an intact right visual area with the language areas on the left.

Topic-148: Geschwind's Models of Language Processing

1. For listening to and understanding spoken words, the sounds of the words are sent through the auditory pathways to the primary auditory cortex (Heschl's gyrus). From there, they continue to Wernicke's area, where the meaning of the words is extracted.
2. In order to speak, the meanings of words are sent from Wernicke's area via the arcuate fasciculus to Broca's area, where morphemes are assembled. The model proposes that Broca's area holds a representation for articulating words. Instructions for speech are sent from Broca's area to the facial area of the motor cortex, and from there instructions are sent to facial motor neurons in the brainstem, which relay movement orders to facial muscles.
3. In order to read, information concerning the written text is sent from visual areas to the angular gyrus and from there to Wernicke's area, for silent reading or, together with Broca's area, for reading out loud.

Topic-149: Experimental Studies of Aphasia

Let us now look at psycholinguistic research that has clarified the role of syntactic and semantic processes in various aphasias. The traditional view has been that Broca's or agrammatic aphasia is a production deficit and Wernicke's a comprehension deficit. The implicit assumption is that the underlying language representation is intact with Broca's patients but that they have difficulty putting appropriately formulated linguistic messages into words.

Conceptualize sentences normally but have difficulty translating them into productive speech. Clearly, data regarding the comprehension abilities of Broca's aphasics would be extremely useful here. Broca's aphasics have often been viewed as having normal comprehension, but we have good reasons for questioning this assumption. For one, many of the tests of comprehension have been extremely global in nature and do not clarify the respective roles of syntactic and semantic processes in comprehension. For another, it is possible to disguise deficits in comprehension somewhat more easily than deficits in production. The latter point was brought out in a study by Caramazza and Zurif (1976) who examined comprehension capacities in Broca's, Wernicke's, and conduction aphasics. Patients heard a sentence and then had to choose which of two pictures corresponded to the sentence.

Topic-150: Implications for Understanding Normal Language Processing

A major distinction in the study of normal language processing is between comprehending language and producing it. If this is not merely a conceptual distinction but also biologically based, then we would expect to see some aphasic cases in which comprehension is impaired but production is spared, and vice versa. The initial descriptions of Broca's and Wernicke's aphasias support this distinction. Although there are more subtle differences between these two cases, the comprehension–production distinction appears beyond dispute. Thus, in this instance the studies of aphasia support our distinction. Another intriguing aspect of aphasic language is the sparing of comprehension of axial commands in individuals with Wernicke's aphasia. Although Wernicke's aphasics show many problems in language comprehension, they respond correctly to commands involving midline or axial structures, such as stand up, turn around, take a bow, and look up (Geschwind, 1965). For example, patients perform accurately when asked to stand like a boxer or even take two steps backward, turn around, and sit down again. What is especially striking is that axial commands sometimes involve specific nouns or verbs that these patients ordinarily fail to comprehend.

Lesson-26

LATERALIZATION OF LANGUAGE PROCESSES

Topic-151: Split-Brain Research

A consistent finding in the research on aphasia is that language deficits are associated with damage to the left hemisphere of the brain more often than to the right hemisphere. Moreover, we have known for some time, from studies of animals, that communication between the hemispheres may be disrupted by severing the corpus callosum. In the animal studies, one hemisphere could be taught a specific task, and then the other hemisphere could be tested. Typically, little or no learning was found in the other hemisphere, indicating little or no transfer of information between the hemispheres following severing of the corpus callosum. The goal of these studies is to determine what skills are lateralized to one or the other side of the brain.

Topic-152: Lateralization in Normal Brains

Research on the representation of language and nonverbal functions in the intact brain has increased dramatically in the last few decades as techniques for studying the normal brain have been developed and refined. The visual field task used with split-brain patients has also been used frequently with normal individuals. Another commonly used technique, referred to as a dichotic listening task, involves the simultaneous presentation of different stimuli to the two ears. Initially developed by Broadbent (1954) to study attention, the technique was first used by Kimura (1961) to examine ear and hemisphere differences. Kimura (1964) found that recall of verbally presented materials such as digits was superior in the right ear and that recognition of nonverbal stimuli such as melodies was better in the left ear.

Topic-153: Contributions of the Right Hemisphere

So far we have emphasized the talents of the left hemisphere and the ineptness of the right hemisphere. However, the right hemisphere also has some talents in the linguistic realm. Normal individuals use the skills of both hemispheres to comprehend and produce language, so we need to examine some of the ways that the two hemispheres interact during language use. It appears that the right hemisphere is better prepared than the left to appreciate some of the pragmatic aspects of language. Kaplan, Brownell, Jacobs, and Gardner (1990) examined the ability of individuals with right-hemisphere brain damage to interpret conversational remarks. The subjects heard short vignettes that described the performance of one character and the relationship between two characters and then interpreted an utterance from one of the characters. Some of the utterances were literally true, and some were literally false. For instance, in one vignette, Mark was playing golf poorly, and Hal said, you sure are a good golfer, which was literally false. The interpretation of this utterance is in part based on the relationship between the two men. When it was friendly, the comment might be taken as a white lie intended to encourage a friend, but when the relationship was hostile, it could be taken as a sarcastic statement. Kaplan and colleagues found that individuals with right-hemisphere damage were as adept as control subjects in interpreting the literally true sentences but were poorer at identifying the pragmatic intent of literally false utterances. In particular, they had difficulty integrating information about the performance with information about the characters' relationship.

Topic-154: Aphasia in Children and Hemispherectomy Studies

Lenneberg based his hypothesis primarily on studies of children recovering from brain damage. He cites the work of Basser (1962), who found that if brain damage occurred prior to the onset of speech, speech is often delayed in rate but normal in pattern; children go through the normal stages of language development but proceed more slowly. Basser also reports that damage to the right hemisphere in the first two years of life produces as much disruption in speech development as damage to the left hemisphere. Basser (1962) reported that brain damage that is sustained after the onset of speech produces different results. Speech disturbances were considerably more common when the damage occurred in the left hemisphere than in the right hemisphere in a group of children who sustained injuries between 2 and 10 years of age. Injury to the left side resulted in language disturbances nearly twice as often as injury to the right side.

We learn more about the development of lateralization from examining the results of a surgical operation known as a hemispherectomy. This operation is normally used to treat incurable and potentially fatal tumors and involves the removal of either the left or the right cerebral hemisphere. Removal of the right hemisphere in adults leads to little or no language impairment, whereas removal of the left hemisphere leads to significant language problems (Springer & Deutsch, 1998).

Topic-155: Behavioral and Psychological Studies

Some studies have applied behavioral techniques such as dichotic listening to children with normal development. These studies have provided the clearest picture of the development of lateralization to date. Kimura was one of the first to report that children as young as 4 to 6 years could produce adult like right-ear advantages on the dichotic task (Kimura, 1963). Subsequent studies have found that children as young as 2 years of age show the typical right-ear advantage for speech (Springer & Deutsch, 1998). In addition, studies of very young infants have found right-ear advantages for speech as well (Bertoncini, Morais, Bijeljac-Babic, McAdams, Peretz, & Mehler, 1989). The investigators studied infant perception using the high-amplitude sucking procedure. When infants habituated to a particular sound (that is, when their sucking rate decreased), a different sound was substituted. The researchers found that the right ear was better at responding to changes in speech, whereas the left ear was better with changes in musical stimuli.

Topic-156: Development of Lateralization & Lateralization in Other Species

It was once thought that laterality was exclusively human, but we now have several documented cases of the lateralization of species-specific vocalizations. One study (Petersen, Beecher, Zoloth, Moody, & Stebbins, 1978) investigated the perception of vocalizations in Japanese macaque monkeys. The researchers presented the vocalizations to either the left or the right ear. All five macaques showed better performance when the vocalizations were given to the right ear. Only one of five monkeys from other species showed a right-ear advantage for macaque sounds. These results suggest the exciting possibility that human lateralization of speech is part of a larger pattern in which a number of species show lateralization on the left half of the brain for important, species-specific sounds. This view is reinforced by some impressive work on birdsong. Nottebohm (1970) has pointed out that three basic developmental sequences may be observed with young birds. In the first type, the bird develops a normal song even if it is completely isolated at birth and deafened at hatching. Examples of this type are chickens and ring

doves. In a second type, the bird will develop the normal song if isolated but not if deafened. Song sparrows are an example. Finally, in the third variety, either isolation or deafening at an early age produces an abnormal song; chaffinches and white-crowned sparrows fit this pattern. Nottebohm (1970) has found a number of analogs to human speech in this third type of songbird. First, these birds go through a period of ‘‘subsong,’’similar to human babbling, in which the song is distinct from the adult version in a number of ways. Second, birds in different areas learn different dialects of the same song. Third, the consequences of deafening the bird are different at different ages. If the bird is deafened before it has begun to sing, it develops a highly abnormal song. If, however, the deafening is delayed until after the song has developed, it has no effect on the motor output. Finally, Nottebohm (1970) has found that the left half of the brain is more intimately involved than the right half in the songs of chaffinches. The major structure of the vocal system of the chaffinch is called the syrinx, and each side of it is connected by the hypoglossus nerve to the corresponding side of the brain. (Here, the connection is ipsalateral, with the left hypoglossus connected to the left half of the brain.) Nottebohm found that when the left hypoglossus was severed, the nature of the song was seriously disrupted, with some parts missing and replaced by unstructured bursts of noise. The same operation on the right side leaves the song intact.

Lesson-27

EVOLUTION OF LANGUAGE

Topic-157: Evolution of Language

Continuity theories: Continuity theories are built on the idea that language exhibits so much complexity that one cannot imagine it simply appearing from nothing in its final form; therefore it must have evolved from earlier pre-linguistic systems among our primate ancestors.**Discontinuity theories:** Discontinuity theories take the opposite approach—that language, as a unique trait which cannot be compared to anything found among non-humans, must have appeared fairly suddenly during the course of human evolution.

Some theories see language mostly as an innate faculty—largely genetically encoded. Other theories regard language as a mainly cultural system—learned through social interaction.

Topic-158: Communication in Present Day Primates

Noam Chomsky, a prominent proponent of discontinuity theory, argues that a single chance mutation occurred in one individual in the order of 100,000 years ago, installing the language faculty (a component of the mid-brain) in "perfect" or "near-perfect" form. A majority of linguistic scholars as of 2018 hold continuity-based theories, but they vary in how they envision language development. Among those who see language as mostly innate, some—notably Steven Pinker—avoid speculating about specific precursors in nonhuman primates stressing simply that the language faculty must have evolved in the usual gradual way. Others in this intellectual camp—notably Ib Ulbæk—hold that language evolved not from primate communication but from primate cognition, which is significantly more complex.

Topic-159: Teaching Language to Nonhuman Primates

Attempts to teach language (or a language like system of communication) to other primates may be divided into three groups. In the first group, attempts were made to teach speech to chimpanzees (Hayes & Hayes, 1952; Kellogg & Kellogg, 1933). The vocal apparatus of chimpanzees is not suited to produce speech sounds (more on this later); consequently, these studies proved very little. In the Hayes's study, the chimpanzee was able to learn only two words in two years of training. A second group involved programs in which the communication system was not clearly defined in linguistic terms. Premack (1971) used tokens with symbols on them to teach a chimpanzee named Sarah some logical concepts. Although Sarah was able to demonstrate a number of aspects of complex cognition, the results are of uncertain importance to the issue of whether apes can acquire a language because it has not been demonstrated that these symbols have the power or flexibility of human language.

Topic-160: The Continuity Debate

Let us take stock of where we are. It appears that the communication skills of nonhuman primates, studied either in the wild or in the laboratory, fall well short of the full range of human language. In the wild, nonhuman primates display signals that have meaning, but the signals fail to achieve some of the defining characteristics of language. The signals tend to be iconic rather than arbitrary. Moreover, the system of communication is very limited. In human language, we have a duality of patterning that permits us to construct an infinite set of messages from a small set of meaningless

elements. In contrast, the alarm calls of vervet monkeys are global signals that do not consist of elements that can be combined and recombined in different ways. The linguistic skills of chimpanzees and bonobos taught ASL or other language like systems are more impressive at the level of semantics. However, these laboratory animals do not seem to easily grasp the nuances of syntax, something that all normal children attain without specific instruction in their first few years of life. Thus, we are compelled to conclude that human language is qualitatively different than the communication systems of nonhuman primates and, by extension, the common species from which humans, chimpanzees, and bonobos evolved. But this observation creates a dilemma: Darwinian Theory is based on the concept of continuity, the notion that evolutionary changes are quantitative rather than qualitative. As Darwin (1871) commented: ‘‘There can be no doubt that the difference between the mind of the lowest man and that of the highest animal is immense....Nevertheless, the difference, great as it is, certainly is one of degree and not of kind’’ (pp. 127–128). Darwin (1871) also emphasized that the presence of this conclusion is not changed by considering language: ‘Nor ...does the faculty of articulate speech in itself offer any insuperable objection to the belief that man has been developed from some lower form’ (p. 93).

Topic-161: Gesture and Speech as Possible Evolutionary Sequences

One thing seems clear: that spoken language developed quite recently in our evolutionary history. As we saw in chapter 4, when we produce sounds, air is expelled from the lungs and sent through the structures of the vocal tract (see Figure 4.1). We can change the shape of the vocal tract by altering the position of our lips, jaw, tongue, and larynx. The shape and flexibility of our vocal tract are required for the range of sounds found in contemporary languages. A crucial evolutionary development is the enlargement of the pharyngeal area that lies above the larynx and just below the mouth. In newborn humans and adult chimpanzees, the larynx exits directly into the mouth, whereas in adult humans, it exits into the pharynx. This anatomical difference greatly influences the number of sounds that can be produced. For example, newborns and chimpanzees are physically incapable of producing the vowels [a], [i], and [u], sounds that are found in a wide variety of languages. It has often been said that evolution is miserly. The human mouth, throat, and larynx were ‘‘designed’’ for swallowing and breathing, not for speech. In evolutionary terms, speech may be an example of exaptation (Gould, 1980; Gould & Vrba, 1982): It utilizes preexisting physical structures for new functions. In this context, the enlargement of the pharyngeal area has a highly significant consequence. Because in adult humans the passageways are shared among speech, eating, and breathing, the potential for choking on food is much greater than for infants or chimpanzees, which have a smaller pharyngeal area (Lieberman, 1991). Why would such an arrangement have evolved? It is one indication that language is so vital that we have evolved a speech apparatus that increases our capacity to choke in order to use productive speech.

Topic-162: Brain Size and Social Behaviour as Possible Evolutionary Sequences

The finding that brain size increased prior to vocal tract changes helps us pin down the sequence of evolutionary events but also raises an issue. Why did brain size increase? That is, what selective pressures led to this development? As Dunbar (1993, 1998) has pointed out, brain size has costs as well as benefits. It is, for one thing, harder to escape from predators when carrying around such a large brain. Dunbar (1998) asserts that ‘‘in the absence of any selection pressure, larger brains will not evolve’’ (p. 93). Dunbar (1998) suggests that brain size may have increased in relation to group size. As our

evolutionary ancestors began to congregate in larger groups, the mechanisms of group cohesion and regulation began to change. That is, we need a mechanism to hold the larger social group together. With smaller groups, grooming served this essential function, and grooming is a pervasive feature of several nonhuman primates, including chimpanzees. With larger groups, some form of communication may have evolved to play this role. Dunbar claims that language evolved to meet this need by enabling one member of the species to communicate with many members of the group simultaneously.

With regard to our evolutionary ancestors, the social cognition hypothesis is that language evolved as a bonding device. Larger group sizes led to larger brains, including brains more capable of inferring the intentions of others, and larger brains ultimately led to language (Dunbar, 1998). As with all of these views, issues remain to be discussed, but Dunbar's view provides an interesting and plausible explanation of why language evolved. If this view is correct, then social pressure is the driving force behind the evolution of language.

Lesson-28

LANGUAGE, CULTURE AND COGNITION

Topic-163: The Whorf Hypothesis

The view that language shapes thought is most often associated with the work of Benjamin Lee Whorf. Whorf received his degree in chemical engineering from the Massachusetts Institute of Technology and worked throughout his life for an insurance company as a fire prevention engineer. He had a number of avocations, however. He had a strong interest in the relationship between science and religion, and ultimately religion led him to language. He was initially self-taught in linguistics but eventually studied American Indian linguistics with the prominent anthropologist Edward Sapir at Yale University. Sapir (1921) had earlier suggested that languages are diverse in the way that they structure reality, but he had not fully developed the thesis that these linguistic differences might facilitate certain modes of thought. This was a position that Whorf developed in a series of articles from 1925 to 1941, many of which are included in Carroll (1956). The notion that language shapes thought patterns is commonly referred to as the Whorf hypothesis, although it is also called the Sapir–Whorf hypothesis, to acknowledge the role of Whorf's mentor.

Topic-164: Linguistic Determination and Relativity

The Whorf hypothesis consists of two parts: linguistic determinism and linguistic relativity. Linguistic determinism refers to the notion that a language determines certain nonlinguistic cognitive processes. That is, learning a language changes the way a person thinks. Linguistic relativity refers to the claim that the cognitive processes that are determined are different for different languages. Thus, speakers of different languages are said to think in different ways.

We dissect nature along lines laid down by our native languages. The categories and types that we isolate from the world of phenomena we do not find there because they stare every observer in the face; on the contrary, the world is presented in a kaleidoscopic flux of impressions which has to be organized by our minds—and this means largely by the linguistic systems in our minds. We cut nature up, organize it into concepts, and ascribe significances as we do, largely because we are parties to an agreement to organize it in this way—an agreement that holds throughout our speech community and is codified in the patterns of our language. The agreement is, of course, an implicit and unstated one, but its terms are absolutely obligatory; we cannot talk at all except by subscribing to the organization and classification of data which the agreement decrees.

There are several notions here. One is that languages ''carve up'' reality in different ways. Another is that these language differences are covert or unconscious; that is, we are not consciously aware of the way in which we classify objects. Third, these language differences influence our worldview. These are profound ideas but not ones easily amenable to experimental test. Let us begin by looking, as Whorf did, at linguistic examples from various languages that seem to bear on his thesis.

Topic-165: Some Whorfian Examples: Lexical Examples, Grammatical Examples

Whorf provided a number of examples designed to show that linguistic determinism and relativity were valid concepts. They can be broadly organized into lexical and grammatical examples.

Lexical examples: We may begin by considering the concept of differentiation. Differentiation refers to the number of words in a given domain (for example, colors, birds, fruits, and so on) in a lexicon. A more highly differentiated domain has more words, some of which express finer distinctions, such as subtle shades of color. Whorf argued that languages differ in the domains that are most differentiated. That is, all languages show high degrees of differentiation in some domains and low degrees in others. The implication is that greater degrees of differentiation are related to culturally significant concepts. For example, Whorf noted that in the American Indian language of Hopi, just one word covers everything that flies except birds (for example, the same word for insects, airplanes, aviators, and so on). The Hopi speaker calls all of these disparate objects by the same name without any apparent difficulty. Whorf argued that although this class might seem very broad to us, so would our word snow to an Eskimo:

We have the same word for falling snow, snow on the ground, snow packed hard like ice, slushy snow, wind-driven flying snow—whatever the situation may be. To an Eskimo, this all-inclusive word would be almost unthinkable; he would say that falling snow, slushy snow, and so on, are sensuously and operationally different, different things to contend with; he uses different words for them and for other kinds of snow. (Carroll, 1956, p. 216)

Whorf offered this as evidence of linguistic determinism, of the power of words to influence thought processes. We are careless because of the word empty. Note also that Whorf emphasized ‘‘regular’’ analogy: we come to this (precarious) interpretation of experience based on habitual experience with words. It is something that occurs slowly, over time, seeping into our mental framework. Whorf did not say that we could not avoid this pattern of thought and treat the empty drums with proper respect (obviously he did); but this is a different, more active, pattern of thought.

Topic-166: Grammatical Examples

Although some of Whorf’s lexical examples, such as his comments on Eskimo, have generated a considerable amount of discussion, it appears that he was more interested in the grammatical differences among languages. In English, we come to respect the difference between nouns and verbs as a fundamental distinction. Nouns refer to long-lasting and stable events, such as horse and man, whereas verbs refer to short-lived actions, such as hit and run. Yet, Whorf asked, why then do we classify temporary events such as lightning and spark as nouns? And why are dwell, persist, and continue verbs? In Hopi, lightning is a verb because events of brief duration must be verbs. Whorf also mentioned Nootka, a language used on Vancouver Island, in which all words seem to be treated as verbs. This is just one indication of how grammatical characteristics vary from language to language. Another example of grammatical diversity concerns the extent to which a language uses word order or morphology to signal meaning. In English, the vast majority of sentences use a subject-verb-object (SVO) order, and in most of these the first noun is the agent and the second the patient. This order is adhered to rather rigidly. If the verb is intransitive (one that does not take an object), the remainder of the sequence holds (SV). Similarly, when the first noun is deleted, it is very often replaced by a pronoun; other languages allow deletion of the subject more often. The major exception to the standard order is the question form. The consistency of word order in English makes it a reliable cue for sentence interpretation (MacWhinney, Bates, & Kliegl, 1984). For a speaker of English, languages that violate the SVO order may seem unnatural.

In Wintu, one inflection would be attached to the verb if there were direct visual evidence of this fact, another if it were gossip, and still another if it were a regular event (Lee, 1944/1987). This suggests,

as Brown (1958, p. 254) puts it, that Wintu speakers must have ‘‘a continuing grasp of the evidence’’ of their assertions. Similarly, one cannot directly translate the English sentence ‘I was riding a horse’ into Navaho. Notice that the structure of the sentence is similar to ‘I was pounding a nail’; I is the actor and the nail is the object of the action. In Navaho, the action of riding is shared between the rider and the horse; no person or animal has anything done to him or her or it. The best translation, admittedly awkward, is along the lines of I was animaling-about with the horse (Elgin, 2000). It is more similar to dancing with another person than pounding a nail. Whorf believed that grammatical distinctions such as these exert an effect on not just the way individuals think but also their overall world view. In English, there is a distinction between what Whorf called individual nouns (more commonly called count nouns) and mass nouns. Count nouns refer to bodies with definite outlines (for example, a tree, a stick, a hill), whereas mass nouns refer to objects without clear boundaries (for example, air, water, rain). Linguistically, the distinction is that count nouns take the plural morpheme, whereas mass nouns cannot. Thus, we can speak of trees, sticks, and hills but not airs, waters, and rains. In addition, count nouns take the singular indefinite article a, but mass nouns do not. In contrast, in Hopi, there are no mass nouns. Although we cannot pluralize English mass nouns directly, we can do so by the use of a phrase of the form count noun + of + mass noun. So, even though we cannot say waters or sands, we can say bodies of water or buckets of sand. But this form of expression, according to Whorf, has cognitive consequences because it leads us to think of some objects as being ‘‘containers’’ (form) that hold ‘‘contents’’ (substance or matter). This distinction between form and substance is not a necessary feature of objective reality. For example, even though some objects, such as butter and meat, have clear boundaries, they are treated grammatically as mass nouns (for example, two sticks of butter, not two butters). Thus, Whorf suggested that English speakers think of objects as consisting of form and substance because of this grammatical distinction.

Topic-167: Criticism on Whorf Hypothesis

Any study that attempts to test the hypothesis that differences in language determine differences in thinking must, at the outset, define the three key terms. First, we need to define what we mean by ‘‘differences in language.’’ This has been done in two ways. One way is to compare a language that linguistically marks a particular conceptual distinction with a language that does not. Thus, the presence or absence of the explicit linguistic marking is the language difference of interest. Although most studies have approached the problem in this way, another possibility is to compare two languages that mark the same distinction in different ways. This comparison focuses not on whether a language marks a concept but rather how it does so. As we have seen, English marks number through the use of the plural morpheme. One comparison would be another language that does not mark number; another would be a language that marks number in a different way. Second, we need to define ‘‘differences in thinking’’ in a satisfactory manner. It is obviously difficult to measure a person’s world view. But it should be kept in mind that Whorf was especially interested in those aspects of thinking that indicated a habitual mode of thought. Lucy (1992b) defines habitual thought as ‘‘routine ways of attending to objects and events, categorizing them, remembering them, and perhaps even reflecting upon them’’ (p. 7). The mode is contrasted with specialized thought, which is composed of cognitive routines or structures that are restricted either to certain subgroups within a culture (such as technical specialists) or to certain domains (such as kinship or illness).

Topic-168: Sapir-Whorf Hypothesis: Limitations and Possibilities

Some sources indicate that the recent work in linguistics and cognitive science has supported the Sapir-Whorf hypothesis. Language in Mind: Advances in the Study of Language and Thought (2003) is a collection of papers that gives three ideas on language and thought concepts.

Some studies conclude that the ideas put forth by Daniel Chandler, Geroge Grace, and Lawrence Campbell indicate the Sapir-Whorf hypothesis being significant, but not being applicable to all situations. A Linguistic Mystic (Notes from a Linguistic Mystic) explains why Sapir-Whorf is not conclusively proved and disproved. The Mystic writes everybody views the world differently and uses their language accordingly. The language of the one from a teaching career is different from the language of the other who is from a photographic printing business. Similarly, there might be individual cognitive (and linguistic) quirks with every person. The result is that there is no neutral sample of a given language. Culture is another important factor to be considered under discussion. People's views of the world might depend upon their cultural norms, beliefs, and perceptions. Similarly, people from the same given native language or dialect might share the same cultural background, so it is difficult to find out whether the given effect or consequence has resulted from linguistic or cultural perspectives or the perspectives from both. Such things might get the researcher into a "which came first, the chicken or the egg" type debate. Last but not the least would be the issue of the experiment itself. When one tries to study how people use language, without biasing them, he uses language to explain the study and conduct the experiments. Then he might need a translator to pass on instructions, which may bias the participant right from the get-go. The Mystic adds that if there is some degree of linguistic relativity, it will likely be universal, and thus, the researcher will be influenced by it, too. In such a case, looking at the nature of these effects or consequences, a researcher studying this effect or consequence in another person, might be like an inmate studying the behavior of fellow inmates.

Lesson-29

THEORIES ON CULTURE AND LANGUAGE

Topic-169: Theories on Language & Culture.

Theory 1: Speech is Essential for Thought

Following are the theories given by different researchers on language and culture. (We must learn how to speak aloud, otherwise we cannot develop thinking.)

Proponents:

a) Thought is a kind of behavior, speech, which originates from speech production (verbal or non-verbal)

b) Thought develops as a kind of speech

- By speaking aloud, you start to speak subvocally or make internal articulations. (Thought is defined as subvocal speech or behavior.)

Inadequacies of the theory:

1) Children having no speech production can comprehend and think.

E.g. Hearing persons who are born mute.

- If a person can comprehend the meaning of speech, that person must have the ability to think.

2) Speech comprehension, which implies thought, develops from speech production in normal children

- Speech comprehension precedes speech production. In other words, speech comprehension is the basis for speech production.

E.g. Children who could only produce single-word utterances could understand syntactic structures composed of more than one word. This shows that the children's level of speech comprehension is well in advanced of their level of speech production, which is an only one-word production.

3) Simultaneously speaking aloud while thinking about something different.- Thinking of something other than what we are saying (wandering mind).

4) Telling a lie

- Saying one thing while thinking something quite different. This means that when we tell lies, two distinct processes (speaking aloud and speaking subvocally/to yourselves) with different content occur at the same time.

5) Meaning and thought occur without behaviour

- People do not lose meaning of words when any parts of their body are lost/removed.

E.g. Paralysed person can still think clearly.

- This shows that thought was not dependent on body movements or movements of the speech organs.

6) Interpreting between languages can be done

- Consider the work of simultaneous interpreters. They have to understand (a process done in their minds) the messages told to them in one language and then transform the language to another language by

speaking it aloud.
- This shows that a system of abstract thought to mediate between languages has made simultaneous interpretation possible.

All of these 6 objections to the theory show that speech production is not necessary for thought.

Topic-170: Theory 2: Language is Essential for Thought

Language is essential for thought (We must learn language, how to produce or understand speech, otherwise we cannot develop thinking).

Proponents:
a) The language system, with its rule or vocabulary, is necessary for thought.
b) Thought was derived from speech production.
c) Thought is supposed to be language-specific and not universal.

Inadequacies of the theory:

1) Deaf persons without language can think.
E.g. Deaf children, when at play and when participating in activities around the home, behave as intelligently and rationally with respect to the environment as do hearing children.
- If one holds that language is the basis for thought, then these deaf children do not think and that they were merely robots.

2) Multilinguals are whole persons.
- According to this theory, if multilinguals have more than one thought process (one for each language), such persons would not be able to think coherently or would have separate thought intelligencies/ personalities. Persons knowing 3 languages would have formed 3 systems of thought, for example.
- This is not true because it is proved through a case that a multilingual and a monolingual child living in the same environment have no difference in terms of beliefs, values, personality and their perceptions of the world and nature.

3) Intelligent animal behaviour occurs without language.
- Thought must have some basis other than language. The following examples can prove this statement.
E.g.:
a) Monkeys (without language) can develop some simple counting and arithmetic abilities.
b) Insects (also without language) can think of strategies for gathering food, defending themselves, and finding mates.
- Since animals can think without language, there is no reason to believe that humans cannot do the same.

Topic-171: Theory 3: Language Determines or Shapes Our Perception of Nature

Language determines or shapes our perception of nature (The learning of language will determine or influence the way we perceive the physical world, visually, auditorily, etc.)

Proponent
- One's knowledge of vocabulary or syntax influences one's perception and understanding of nature.

Inadequacies of the theory

1) Perception, interest, and need determine vocabulary
- It is our interest and need that determine our coinage of vocabulary and its use.
E.g. Children, from all over the world, are enchanted by dinosaurs. They perceive the types of dinosaurs. Through perception, they develop their interesting dinosaurs and later they feel the need to seek the names of these objects.

2**) Color and snow vocabulary**
- Rather than language determining perception, it is perception that determines language.

- Color words
E.g. Speakers of a language with limited repertoire of color terms appeared no different from speakers with broader repertoire of color terms in terms of distinguishing colors of rainbow.

- Snow words
E.g. Hawaiians have only one, the English word 'snow' but the Inuits have single words for snow-on-the-ground, hard-snow-on-the-ground, block-of-snow and others. As for English-speaking skiers in cold countries, they name snow through its physical condition by creating phrases namely 'powder snow', 'wet snow', etc.
- It is because of the importance of snow in their lives that they have created more words for snow than have Hawaiians.
- It is this language device of creating phrases which every language has that makes up for any vocabulary deficiency.

3) Hopi 'Time' and Chinese 'Counterfactuals'
- Hopi people and time
- People are not different because of their language, but because of their experiences. Deep down, we are all the same; it couldn't be otherwise.
E.g. Hopi people use periods relating to the harvest, the moon, the sun and other significant events. We do much the same in English ("......when it gets dark", ".... when the weather gets warm").

- The Chinese language and 'counterfactuals'
- Chinese were not as able as English speakers to think hypothetically about what is not true because of certain grammatical features of the Chinese language.
- This happened due to faulty translations but once proper translations were made, there was no basis for claiming a difference in thinking.

4) Lack of vocabulary does not indicate lack of concept
- We describe a thing, which does not have a single word for it, with a phrase carrying a similar concept.
E.g., we have a name for the underside of our hand that is called 'palm' but we have no word for the topside. Instead we use the phrase 'back of the hand.'
- This shows that lack of vocabulary item is not indicative of a lack of a concept.

5) Knowledge overrides literal word meanings

- We can believe something quite different from what the language literally specifies and that the continual use of a language form may not change an underlying thought. In other words, one thing is said but another is understood.

(similar to lying, but in this case, people know it is not true)

E.g., the word 'sunset'. We always hear and use this word that it leads us to believe that the sun sets on its own. The truth is, it is the earth that moves, not the sun.

6) Multilingual's view of nature

- If it is said that different languages have distinctive and important effects on the way we view nature, then the multilingual must similarly have distinctive and important ways of viewing nature. But such is not the case. Multilingual is a whole person who perceives nature as other humans do.

Topic-172: Theory 4: Language Determines or Shapes our cultural world view

Language determines or shapes our cultural world view (The learning of language will determine or influence the way we understand our culture and the world).

Proponents

a) Even if language is somewhat distinct from thought, nevertheless, knowing a language will itself condition and influence one's cultural, social beliefs or views of the world.

b) Language does provide a view of culture and society and an outlook on the world.

Inadequacies of the theory

1) Same language yet different world views

- According to the theory, speakers of the same language must have same world views. This is not true.

E.g. A monolingual English-speaking family of members with various religions (Mother is a Buddhist, father is a Christian, son is a Moslem), view the world differently according to the beliefs of their religions.

2) Different languages yet similar world views

E.g., Communist Doctrine is shared by speakers of many languages namely Koreans, Chinese, Vietnamese, and Cubans.

3) Same language but world view changes over time

- Changes in world view occur without changes in language.

- Changes in world view can occur due to causes other than the language system namely the spread of new ideas, economic domination, wars, etc.

4) One language can describe many different world views

E.g., the Bible of the ancient Hebrew people.

- If this Bible were to be translated into many languages with perfect translations, the meaning of the Bible in every language may differ because every word in any languages carry different primary or secondary meanings, implications, presuppositions, feelings, attitudes, and politeness.

- This will cause many different world views out of a Bible of Hebrew language.

5) Multilingual's world view

- The theory predicts that a multilingual will have as many distinct world views as language systems. This is, again, not true because as been mentioned before, multilingual is a whole person who perceives nature as other humans do.

Topic-173: Erroneous Beliefs Underlying the Four Theories

Erroneous belief 1: their analysis of language is adequate: The most serious deficiency in the theorizing of Whorf, Sapir, Korzybski, Skinner, von Humboldt, and others concerns the assumption that the directly observable words or the structure of a sentence represent all of the semantic or thought elements of that sentence. These theorists drew conclusions largely based on what linguists today would consider a superficial surface structure analysis. Whorf (Carroll, 1956), for example, states that 'Our Indian languages show that with a suitable grammar we may have intelligent sentences that cannot be broken into subjects and predicates' (p. 242), and that 'the Hopi language contains no reference to "time" either explicit or implicit' (p. 58). Such statements (disavowed by subsequent linguists) are made essentially because it is assumed that surface structure directly signifies all of the meaning of a sentence. These linguists thus had a tendency to focus on the differences between languages. The idea that grammatical differences made thought differences was not long in coming. It seems that most of the linguists simply played with the idea, because they offered little or no evidence for their assertions. They had other concerns. Except for Whorf, they did not bother to seek out hard evidence to support their contentions. It was only when Chomsky came along and postulated underlying structures that it was realized that languages had a lot of similarities. It is not surprising, therefore, that only after Chomsky did the search for language, universals begin in earnest, although the linguist Joseph Greenberg was an earlier initiator.

Erroneous belief 2: The meaning of words is linguistic in origin except for the minor case of onomatopoeia (speech sounds imitating environmental sounds): the relationship between a word and its meaning is conventional. That is, **there is no necessary relationship between the sound of a word and its meaning.** There is no inherent reason for a dog to be called 'dog' and not 'pen.' Thus, when one hears a word for the first time, e.g. the obscure English word 'tantivy,' its meaning is not understood, unless it is composed of known morphemes. The meaning that is to be associated with a particular sound sequence must be learned. It is not possible to know from the sound sequence alone (especially if not in a phrase or sentence) that the meaning of 'tantivy' is related to horses and indicates 'a gallop or rapid movement.' Meaning for words is acquired in four main ways: (1) a sound form is associated with an object, situation, or event in the world, e.g. the sound 'dog' with the object 'dog'; (2) a sound form is

associated with an idea or experience in the mind, e.g. 'pain' with the feeling of 'pain'; (3) an inference may be made in a linguistic context, an idea may be suggested, e.g. in reading a paragraph one word may not be known but because everything else is understood, its meaning may be guessed at by inference; and (4) an analysis of known component morphemes may suggest a meaning for the sound form, e.g. the meaning of 'unprimitive' can be gained through knowledge of the morphemes 'un' and 'primitive.' In considering these four ways of acquiring word meaning, we may note that the first two involve non-linguistic sources. In (1) the experiencing of objects, situations, and events in the world provides a basis for meaning, and in (2) experiences in the mind itself provide the basis. The mistake of Whorf and others is to assume that the mere hearing of the sound form of a word (an unknown one) itself provides some sort of meaning. They do not allow for a prior mental experience because that would imply that thought precedes language. A language sound form itself, however, does not provide meaning.

Erroneous belief 3: There are primitive languages and primitive human intelligence: One often hears observers of other cultures say that such and such a people are not logical or rational or that they are somehow deficient in intellect. Such supposed deficiencies are frequently attributed to their having a primitive language. Yet modern linguistic research has never found a single language that could be called 'primitive.'. Thus it is that Chomsky (1967a) can with some assurance assert that all languages are of similar complexity, with each having similar basic forms and operations. And, while other linguists may disagree with Chomsky on what the basic form and operations might be, they do not disagree that all languages are constructed and operate with essentially the same principles. It appears to us that Sapir, Whorf, and the others assumed that there was such a thing as a primitive people and that those people had a primitive grammar. Since they supposed that the primitive grammar of these people reflected their thought, they concluded that their thought was primitive too. How else could Whorf have concluded that the Hopi people had no concept of time, even with the faulty linguistic data that he gathered from those people? Such notions about primitive peoples and primitive languages were virtually taken for granted in the first half of the twentieth century when Sapir and Whorf were doing their theorizing, when the world still had undiscovered peoples and lands. Those days seemed long gone. Then, too, there is a case of non-standard speakers of such dialects as Black English, whom many naive people regard as irrational. Labov (1970), however, clearly demonstrated that logic does underlie the utterances of those speakers. Once one learns the premises that a people hold, their behaviour and statements that were previously thought to be strange or illogical immediately become rational.

Topic-174: The Best Theory: Thought is Independent of Language

The thought system in the mind of the child develops over time as input stimuli of the world, such as visual, auditory, and tactile stimuli representing objects, events, and situations in the environment, are experienced by the child. Until thought is sufficiently developed (ideas of objects, relations of objects, states and actions of objects), words uttered in the presence of the child are not meaningfully processed. When that happens and when language input is experienced in coordination with objects, events, and situations, then language can begin to be learned. Over a period of time, the language system, with its vocabulary and grammatical rules, is formed. Part of the language system is actually part of the thought system, for the meaning and semantics of the language system are those ideas that are part of the content of thought. There is not one idea for 'dog' in language and another in thought. Such a view would be unparsimonious in the extreme. Rather, the thought and language systems are joined through meaning and ideas.

Lesson-30

LEXICAL INFLUENCES ON COGNITION

Topic-175: Testing the Whorf Hypothesis

Any study that attempts to test the hypothesis that differences in language determine differences in thinking must, at the outset, define the three key terms. First, we need to define what we mean by 'differences in language.' This has been done in two ways. One way is to compare a language that linguistically marks a particular conceptual distinction with a language that does not. Thus, the presence or absence of the explicit linguistic marking is the language difference of interest. Although most studies have approached the problem in this way, another possibility is to compare two languages that mark the same distinction in different ways. This comparison focuses not on whether a language marks a concept but rather how it does so. As we have seen, English marks number through the use of the plural morpheme. One comparison would be another language that does not mark number; another would be a language that marks number in a different way.

Second, we need to define ''differences in thinking'' in a satisfactory manner. It is obviously difficult to measure a person's world view. But it should be kept in mind that Whorf was especially interested in those aspects of thinking that indicated a habitual mode of thought. Lucy (1992b) defines habitual thought as ''routine ways of attending to objects and events, categorizing them, remembering them, and perhaps even reflecting upon them'' (p. 7). The mode is contrasted with specialized thought, which is composed of cognitive routines or structures that are restricted either to certain subgroups within a culture (such as technical specialists) or to certain domains (such as kinship or illness).

Topic-176: Color Terms

Codability: A concept that has figured in much of the research on color cognition is codability. Brown (1958; see also Lenneberg, 1953) defined codability as the length of a verbal expression. As we saw in our discussion of differentiation, some languages have single words to refer to a particular object or event, whereas others do not. If one's language does not have a specific word for the occasion, the speaker can still make the reference but will need to do so by some combination of words. Relative to the case in which a single word serves the purpose, the phrase is, in Brown's terms, less codable. Brown (1958) suggested a relationship between the frequency of usage of a verbal expression, its length (codability), and the ease with which it may be used. The relationship between frequency and length is captured in what is called Zipf 's law. Some time ago, Zipf (1935) examined Chinese, Latin, and English and found that the length of a word is negatively correlated with its frequency of usage. That is, the more frequently a word is used in a language, the shorter the word (measured either in phonemes or syllables). English contains many examples of Zipf's law. Whenever mass-produced technological innovations are introduced in society, their initial, cumbersome names become shortened for easy reference (for example, video camera-videocassette recorder becomes camcorder). It may be that the differences in the differentiation of domains that Whorf observed are a special instance of Zipf's law. For instance, it may be that in cultures in which an object is referred to extremely often, it is referred to by a single, brief name; when it is moderately frequent, by a longer name; and when it is infrequent, by a phrase. The relationship between codability and ease of expression has been studied in several experiments. In an early study, Brown and Lenneberg (1954) examined the responses of college students to 24 different

colors. The colors were identified beforehand by a set of judges who were asked to look at a series of color chips and determine which the best instance of the color in question was. The judges produced a list of 8 central colors, with 16 other colors included for comparison. The 24 colors were shown to the students, one at a time, and they were asked to name the colors, with their reaction time to naming the colors being measured. Brown and Lenneberg found that colors that evoked long names (that is, those less codable) were named with hesitation, with disagreement from one person to another, and with inconsistency from one time to another.

Topic-177: Cross-Linguistic Studies

These results suggest that the presence of a brief verbal expression in a language influences certain cognitive processes. However, to evaluate the notion of linguistic determinism, we need to study the effects of color terms in different languages. Berlin and Kay (1969) have investigated color terms in various languages. They found that although the number of color terms in a language varied quite a bit from language to language, there was an underlying order. They found that every language has a small number of basic color terms. These are terms that consist of only one morpheme (for example, blue versus blue-green), are not contained within another color (for example, crimson is contained within the category of red), and are not restricted to a small number of objects (for example, blond is restricted mainly to hair color). Furthermore, each language draws its basic color terms from the following list of 11 names: white, black, red, yellow, green, blue, brown, purple, pink, orange, and gray. In addition, Berlin and Kay found that these 11 terms formed a hierarchy.

On balance, results suggest that under some circumstances, the manner in which we perceive and remember colors is related to the linguistic terms we use to refer to them. Thus, the color domain appears to provide support for the weak version of linguistic relativity.

Topic-178: Number Terms

Another set of studies is relevant to how the lexicon may influence thought processes. These studies have examined how morphological differences in number names between Asian languages (Chinese, Korean, and Japanese) and English may influence children's conceptualization of numbers and, ultimately, their mathematics achievement. The linguistic distinction here is not whether the different languages name numbers but how they do so. In English, the system of naming numbers is relatively complex. The names for numbers 11 and 12, for instance, are unrelated to the names for 1 and 2. The names for 13 through 19 consist of the unit name before the decade name (for example, seventeen). Furthermore, the names for numbers between 20 and 99 consist of the decade name followed by the unit name (for example, thirty-three). In contrast, Asian languages such as Chinese are more regular. The names for numbers between 11 and 99 consist of the decade name followed by the unit name. For instance, the Chinese word for 18 is ten eight and the word for 35 is three ten five. For numbers less than 10 and greater than 99, English and Chinese naming systems are more similar (Hurford, 1987). The greater regularity of Asian languages suggests that children might have an easier time acquiring number names than their English-speaking counterparts. Some evidence indicates that this is so. Miura (1987) studied first-grade children from the United States and Japan. The children were shown how to use a set of base-ten blocks to represent numbers. The set consisted of white unit blocks and purple tens blocks equivalent to ten unit blocks stuck together. On the first trial, the children were asked, in their native language, to read a number on a card and then to show that number in the blocks. After doing this for 5

minutes, they were given a second trial. They were reminded of the equivalence of ten unit blocks and one tens block and were then asked to show each number in another way. Miura distinguished three approaches to the task. A canonical approach was one that placed no more than nine unit blocks in the one's position, such as using four tens blocks and two unit blocks for 42. A noncanonical approach was one that used some combination of tens blocks and more than nine unit blocks, such as three tens blocks and 12 units blocks for 42. Finally, a one-to-one collection used only unit blocks, such as 42 unit blocks. The results indicated that Japanese children were more than twice as likely as U.S. children to use canonical approaches on the first trial. The U.S. children tended to use one-to-one collections on the first trial. When prodded to generate a second approach, the U.S. children developed canonical approaches on the second trial. Miura also found that Japanese children used more noncanonical approaches than U.S. children. Miura has found similar results using Korean and Chinese first graders (Miura, Kim, Chang, & Okamoto, 1988). Furthermore, as predicted from the analysis of the naming systems, the range of numbers between 11 and 99 shows the greatest differences. Chinese preschoolers are no better than American preschoolers at counting between 1 and 10 or beyond 99 (although few can do the latter). But Chinese children are better at counting between 11 and 99 than their English-speaking counterparts (Miller, Smith, Zhu, & Zhang, 1995). Additional work suggests that Chinese speakers pronounce numbers more quickly than English speakers (Hoosain, 1986; Hoosain & Salili, 1987) and that there is a correlation between speed of number pronunciation and mathematical performance (Ellis & Hennelly, 1980). Similarly, Miura and Okamoto (1989) found that Chinese children understood place value better and had a higher level of mathematics performance than English-speaking children. This finding would suggest that a strategy of teaching place value would improve mathematics performance, and there is some evidence to support this line of thought. Fuson, Smith, and Lo Cicero (1997) found that explicit teaching of the base-ten concept improved computational performance in low-achieving Latino first graders in the United States. The studies converge on the conclusion that the way that languages represent numbers influences mathematical thinking. The differences in mathematics achievement between Asian children and American children have been well documented (Stevenson, Lee, & Stigler, 1986), and there are surely many contributing factors to this difference, including parental emphasis, pedagogical techniques, and broader cultural influences. Nonetheless, the language one learns plays a role in mathematics education. Miura stresses that the way one thinks about numbers is fundamentally different in Chinese versus English. That is, it is not simply that Asian children do better on mathematics tasks; they appear to approach the tasks differently as well.

Topic-179: Object Terms

Recent research in how infants learn names pertaining to objects is also relevant here. You may recall the studies in Chapter 10 that discussed the relationship between object permanence and language acquisition. The conclusion drawn by some researchers (e.g., Gopnik, 2001) was that conceptual categories related to object names are constructed at the time when we learn a language, not before. If so, then we might expect to see different kinds of early object terms in children acquiring different languages. Gopnik and Choi (1990) examined the linguistic and cognitive development of Korean-speaking children. Compared to English, Korean uses fewer nouns and permits noun ellipsis, particularly when it is contextually obvious what is being referred to (Clancy, 1985). Gopnik and Choi found that compared to English children, Korean children were delayed in categorization tasks and the naming explosion. A subsequent study (Gopnik & Choi, 1995; Gopnik, Choi, & Baumberger, 1996) found that Korean-speaking children were superior to English-speaking children in means–ends abilities and success/failure

words. In contrast, the English speakers were superior in categorization and the naming spurt. This pattern of data appears to be related to the observation that Korean-speaking mothers used more verbs and fewer nouns than English-speaking mothers (Gopnik, Choi, & Baumberger, 1996). Thus, it appears that the prevalence of nouns and verbs in speech given to children (as well as the way they are used; see Gopnik, 2001) may influence the timing of certain cognitive achievements.

Topic-180: Spatial Terms

Bowerman and Choi (2001) discuss the question posed at the beginning of the chapter—what came first, cognition or language—and arrive at an interactionist view. Children's early word meanings are neither simply labels for existing concepts (the cognitive view) nor constructed entirely because language requires it (the Whorf hypothesis). Rather, they result from the interaction of existing cognitive development and the semantic categories of the input language. Bowerman and Choi (2001) review evidence on the acquisition of spatial terms and conclude that there are substantial similarities across languages. The order of acquisition of spatial terms is relatively consistent. Some terms (such as behind or in front) tend to be underextended and others (such as open) tend to be overextended, and this pattern is also consistent across languages. Also, some spatial words are generalized rather rapidly. All of these results suggest that children may have a rich knowledge of space prior to learning the specific spatial terms their native language encodes. At the same time, Bowerman and Choi (2001) document considerable cross linguistic variation in spatial terms. For example, English and Korean differ substantially. English makes a fundamental distinction between putting on and putting in. Korean uses a term (kkita) to mark a property that we are not familiar with in English: whether two objects with complementary shapes fit together into an interlocking, tight-fitting relationship; this applies to such disparate cases as putting a VHS tape into a case, putting a piece in a puzzle, stacking LEGOs, and putting a ring on a finger. Notice that in English, the first two of these would be considered putting in and the other two putting on. In effect, Korean makes the distinction between putting things into tight containers or loose containers, such as putting an apple in a bowl. Choi and Bowerman (1991; Bowerman, 1996) compared early acquisition of spatial terms in Korean and English and found significant differences. Although both groups of children began using spatial terms around 14 to 16 months of age, they used spatial terms in different ways. English-speaking children distinguished between putting things into containers and putting them onto surfaces, but paid no attention to whether the object fit the container tightly or loosely. The Korean learners, in contrast, distinguished between tight and loose containment. Another cross-linguistic study used the comprehension time paradigm pioneered by Golinkoff and Hirsh-Pasek. In this study, children between 18 and 23 months of age already seem to understand kkita. Because most of the children are not yet producing these words, it appears that sensitivity to language-specific grammatical properties is underway even before language production begins (Choi, McDonough, Bowerman, & Mandler, 1999). It is clear from these studies that acquiring the semantics of Korean influences Korean infants' conceptualization of the world. But the nature of the influence is not entirely clear. Does the presence of the linguistic terms create cognitive categories, as supposed by the strong version of the Whorf hypothesis? Or do such categories exist prior to language experience and are then enhanced or diminished by language experience? Hespos and Spelke (2004) suggest the latter view is correct. They examined how 5-month-old infants in an English-speaking environment responded to the ''tight'' versus ''loose'' distinction.

Lesson-31

GRAMMATICAL INFLUENCES ON COGNITION

Topic-181: Grammatical Influences on Cognition: Studies of Subjunctive

H. Bloom (1981) has conducted some interesting but controversial studies on the differences between how Chinese and English speakers reason. He was particularly interested in counterfactual reasoning, which is the ability to reason about an event that is contrary to fact. For instance, imagine a situation in which several people are waiting for John; he is late, and the group, as a consequence, is late to the movies. The English language has the subjunctive mood, shown in sentence (2), which enables us to discuss various states of affairs that we know to be false: (2) If John had come earlier, they would have arrived at the movies on time (adapted from Bloom, 1981, p. 19). We also need to consider problems on the cognitive side. As noted earlier, Whorf was principally interested in habitual modes of thought. Lucy (1992b) suggests that counterfactual reasoning is more specialized than habitual because it is probably more accessible to those with higher levels of education. It thus remains to be seen whether Whorfian effects can be observed when more habitual forms of thought are assessed.

Topic-182: The Development of Subjunctive and Complex-Syntactic

For many foreign-language (FL) learners of Spanish, one of the most unique grammatical constructs of the Spanish language is the subjunctive. The subjunctive is not highly productive in English, and so students have almost no L1 models with which to formulate hypotheses about its use in Spanish. This challenge is augmented by the subjunctive's linguistic complexities, denoting abstract concepts (e.g., marking irrealis events and states) and having a syntactic distribution that is largely limited subordinate clauses. The present review critically examines almost thirty years of research aimed at understanding the processes through which learners pass in the development of subjunctive abilities and the factors that interact with those processes.

While the primary purpose of this chapter is to provide an understanding of subjunctive acquisition in FL contexts, it contextualizes this foray with an analysis of important studies conducted on the acquisition of the subjunctive in first-language (L1) and bilingual contexts. Subsequently, the author examines the factors that affect subjunctive development in FL contexts as well as the variables influencing the development of abilities for processing complex syntax. Finally, the chapter outlines experimental design issues that limit the generalization of the conclusions that these L1, bilingual, and FL studies have offered.

Topic-183: Grammatical Marking of Form

A study by Carroll and Casagrande (1958) compared Navaho and English. They observed that in Navaho, the form of the verb for handling an object varies with the form or shape of the object. The verb varies if the object is a long flexible object (such as a piece of string) versus a long rigid object (such as a stick) or a flat flexible object (such as a cloth). On the basis of this grammatical distinction, Carroll and Casagrande proposed that Navaho-speaking children would learn to discriminate the forms of objects at an earlier age than their English-speaking peers. Carroll and Casagrande (1958) used an object triads test in which the child had to pick which of two objects, of three presented, went best together. For example, a child might be presented with a yellow stick and a piece of blue rope of comparable size. The child would

then be shown a yellow rope and asked with which of the first two it went best. Thus, it is possible to determine whether the children were focusing more on color or form. Carroll and Casagrande compared children who spoke Navaho with children who spoke English but came from the same reservation and lived in similar circumstances. These results seem generally to support Whorf's view that the grammatical distinctions in a language may influence or determine certain cognitive processes. But the observations from the suburban children suggest that even if grammatical categories determine qualities of thought, they are not the only determinants. Other attributes of the child's environment may serve the same function.

Topic-184: Grammatical Marking of Objects and Substances

Languages also differ in their grammatical distinction of objects and substances. As we have already seen, in English objects such as candles and chairs are referred to as count nouns. Count nouns have distinct singular and plural forms (for example, candle, candles). Moreover, count nouns can be counted (one candle, two candles, and so on). In contrast, nouns such as air, water, and mud are referred to as mass nouns. They cannot take the plural morpheme and cannot be directly counted. We can count even mass nouns by using expressions such as two buckets of mud or three gallons of water. In contrast, in Japanese, all inanimate nouns are treated like English mass nouns (Gentner & Boroditsky, 2001). These nouns cannot take the plural morpheme and can only be counted in the indirect manner of English mass nouns. What, then, does a prelinguistic child see when looking at, say, a rock and a pile of mud? Does the child see these things as fundamentally different as compared to, say, a rock and a stick? If the Whorf hypothesis is correct, children would not notice these similarities and differences before acquiring the linguistic distinction (between mass and count nouns) that draws one's attention to them. Moreover, the hypothesis would suggest that children acquiring English and Japanese would see this aspect of the world very differently.

Topic-185: Grammatical Marking of Gender

English marks grammatical gender only in singular personal pronouns (for example, he, she, it). In contrast, other languages have much more extensive gender systems. Spanish nouns that refer to males end in -o (as in hermano or brother, and gato or male cat) and words that refer to females end in -a (hermana, gata). In addition, many Spanish nouns are marked for gender even if there is no obvious semantic basis for it. For example, key, grapes, and table are feminine in Spanish, and plane, telephone, and bucket are masculine. It is clear that the gender systems of English and Spanish are quite different, and thus it is natural to investigate what effect these systems might have on their learners.

Topic-186: Final Observations

Both Sapir and Whorf agreed that it is our culture that determines our language, which in turn determines the way that we categorize our thoughts about the world and our experiences in it.

For more than fifty years, researchers have tried to design studies that will support or refute this hypothesis. Support for the strong version has been weak because it is virtually impossible to test one's world view without using language. Support for the weaker version has been minimal.

Problems with the hypothesis begin when one tries to discern exactly what the hypothesis is stating. Penn notes that the hypothesis is stated "more and less strongly in different places in Sapir's and

Whorf's writings" (1972:13). At some points, Sapir and Whorf appear to support the strong version of the hypothesis and at others they only support the weak version. Alford (1980) also notes that neither Sapir nor Whorf actually named any of their ideas about language and cognition the Sapir-Whorf Hypothesis. This name only appeared after their deaths. This has led to a wide interpretation of what researchers consider to be the one and only hypothesis.

Another problem with the hypothesis is that it requires a measurement of human thought. Measuring thought and one's world view is nearly impossible without the confounding influence of language, another of the variables being studied. Researchers settle for the study of behaviour as a direct link to thought.

If one is to believe the strong version of linguistic determinism, one also has to agree that thought is not possible without language. What about the pre-linguistic thought of babies? How can babies acquire language without thought? Also, where did language come from? In the linguistic determinist's view, language would have to be derived from a source outside the human realm because thought is impossible without language and before language there would have been no thought.

Lesson-32

NEUROLINGUISTICS AND DISORDERS

Topic-187: Neurolinguistics and Disorders: Disorder of Syntax

Syntactic deficits are common in language disorders and have always been at the focus of research on language disorders. The investigation whether or not syntactic deficits occur in a given acquired or developmental language disorder, which syntactic structures or processes are eventually affected and how to capture such deficits in an explanatory theoretical account has dominated the linguistic research on language disorders since its very first beginnings to the present. Interest on syntactic deficits in language disorders first focused on Broca's aphasia – an acquired language disorder caused by strokes affecting left frontal brain regions. The core symptom of Broca's aphasia is a so-called agrammatic spontaneous speech production which is characterized by omissions of free functional elements and a severe reduction of the length and syntactic complexity of utterances. This leads to a preponderance of very short utterances that seem to consist of a simple, linearly organized string of open-class words. As the term 'agrammatic' already indicates, the spontaneous speech of language impaired speakers suffering from this disorder gives the impression of lacking syntactic structure. Hence, agrammatic Broca's aphasia has been considered the ideal candidate for investigating syntactic deficits and has been at the focus of linguistic investigations concerned with syntactic disorders ever since the advent of modern generative syntactic theory (Chomsky 1957). According to Chomsky's generative approach, the human language faculty is due to a specialized, domain-specific language organ situated in the brain that is part of our biological endowment and therefore genetically specified (e.g. Chomsky 1980, 2002). If this conception holds true, the language organ in the human brain should be affected by brain lesions involving this organ. If the impaired brain tissue subserves this language organ, the impairment of this organ due to a brain lesion should lead to impairments of the language faculty. Agrammatic Broca's aphasia seemed to exemplify this theoretically predicted case of an impaired language faculty due to brain lesions. Consequently, from the late 1960's to the late 1980's, the linguistic investigation of language disorders associated with syntactic deficits was predominantly concerned with the language deficits observed in Broca's aphasia, the focus of this research being on the issue whether or not Agrammatism is due to a deficit affecting syntactic competence and how to capture this purported syntactic-competence deficit in a syntax-theoretical framework.

Topic-188: Aphasia to Neurolinguistics

Aphasia is an acquired language disorder subsequent to brain damage in the left hemisphere. It is characterized by diminished abilities to produce and understand both spoken and written language compared with the speaker’s presumed ability pre-cerebral damage. The type and severity of the aphasia depends not only on the location and extent of the cerebral damage but also the effect the lesion has on connecting areas of the brain. Type and severity of aphasia is diagnosed in comparison with assumed normal adult language. Language changes associated with normal aging are not classed as aphasia. The diagnosis and assessment of aphasia in children, which is unusual, takes account of age norms.

The most common cause of aphasia is a cerebral vascular accident (CVA) commonly referred to as a stroke, but brain damage following traumatic head injury such as road accidents or gunshot wounds can also cause aphasia. Aphasia following such traumatic events is non-progressive in contrast to aphasia

arising from brain tumor, some types of infection, or language disturbances in progressive conditions such as Alzheimer's disease, where the language disturbance increases as the disease progresses.

The diagnosis of primary progressive aphasia (as opposed to non-progressive aphasia, the main focus of this article) is based on the following inclusion and exclusion criteria by M. Marsel Mesulam, in 2001. Inclusion criteria are as follows: difficulty with language that interferes with activities of daily living and aphasia is the most prominent symptom. Exclusion criteria are as follows: other non-degenerative disease or medical disorder, psychiatric diagnosis, episodic memory, visual memory, and visuo-perceptual impairment, and, finally, initial behavioral disturbance.

Topic-189: Reading and Writing Disorders

Reading disorders occur when a person has trouble with any part of the reading process. Reading and language-based learning disabilities are commonly called dyslexia. These disorders are present from a young age and usually result from specific differences in the way the brain processes language.

There are many different symptoms and types of reading disorders, and not everyone with a reading disorder has every symptom. People with reading disorders may have problems recognizing words that they already know and may also be poor spellers. Other symptoms may include the following:

- Trouble with handwriting
- Difficulty reading quickly
- Problems reading with correct expression
- Problems understanding the written word

Reading disorders are not a type of intellectual and development disorder, and they are not a sign of lower intelligence or unwillingness to learn.

People with reading disorders may have other learning disabilities, too, including problems with writing or numbers.

Topic-190: Phonological and Surface Dyslexia

Surface dyslexia is a type of dyslexia, or reading disorder. According to Marshall & Newcombe's (1973) and McCarthy & Warrington's study (1990), patients with this kind of disorder cannot recognize a word as a whole due to the damage of the left parietal or temporal lobe. Individuals with surface dyslexia are unable to recognize a word as a whole word and retrieve its pronunciation from memory. Rather, individuals with surface dyslexia rely on pronunciation rules. Thus, patients with this particular type of reading disorder read non-words fluently, like "yatchet", but struggle with words that defy pronunciation rules (i.e. exception words). For example, a patient with surface dyslexia can correctly read regular words like "mint" but will err when presented a word that disobeys typical pronunciation rules, like "pint". Often, semantic knowledge is preserved in individuals with surface dyslexia.

Phonological disorder: Individuals with that form of dyslexia typically have difficulty sounding out unfamiliar words and do poorly on tests of non-word reading. Students can't break down individual sounds of language (phonemic awareness) and match them with written symbols.

This makes it difficult to sound out or "decode" words. Most kids with reading issues have some degree of phonological dyslexia. It's also sometimes referred to as dysphonetic dyslexia.

Topic-191: Dyslexia

Dyslexia is a brain-based type of learning disability that specifically impairs a person's ability to read. Individuals with dyslexia typically read at levels significantly lower than expected despite having normal intelligence. Although the disorder varies from person to person, common characteristics among people with dyslexia are: difficulty with phonological processing (the manipulation of sounds), spelling, and/or rapid visual-verbal responding. Dyslexia can be inherited in some families, and recent studies have identified a number of genes that may predispose an individual to developing dyslexia. Examples of specific types of reading disorders include:

- **Word decoding:** People who have difficulty sounding out written words; matching the letters to sounds to be able to read a word.
- **Lack of fluency:** People who lack fluency have difficulty reading quickly, accurately, and with proper expression (if reading aloud).
- **Poor reading comprehension**: People with poor reading comprehension have trouble understanding what they read.

Topic-192: Deep Dyslexia

Deep dyslexia is usually classified as an acquired reading disorder, as opposed to developmental dyslexia, in previously literate adults as a consequence of a brain injury. However, recently, developmental deep dyslexia has also been reported in children with Williams's syndrome.

Deep dyslexia is considered to be "central dyslexia" as compared to "peripheral dyslexia." Peripheral dyslexics have difficulty matching the visual characteristics of letters that comprise a word to a stored memory of this word from prior encounters. Central dyslexics are unable to properly match the visual word to the word's meaning. They may also be incapable of speaking, or phonating, the sequence of written letters that they see into the word these letters represent. Deep dyslexia differs from other forms of central dyslexia (phonological dyslexia and surface dyslexia) in that deep dyslexics have many more symptoms and these symptoms are generally more severe. According to the "continuum" hypothesis, deep dyslexia is a more severe form of phonological dyslexia.

Deep dyslexia is mainly characterized by the occurrence of semantic reading errors or semantic paralexias (transposition of letters or words) when reading aloud (e.g. the written word "view" is read aloud as "scene", the word "bird" is read as "canary." These semantic errors are the major distinguishing feature of deep dyslexia in comparison to other central dyslexias. There are many other symptoms of deep dyslexia, including visual errors (e.g. the written word "thing" is read aloud as "think", the word "skate" is read as "scale") and derivational errors (e.g. the written word "alcohol" is read aloud as "alcoholic", the word "governor" is read as "government"), and poor reading of function words. Additionally, deep dyslexics have more difficulty reading abstract than concrete and highly imaginable words, more difficulty reading adjectives, adverbs, and verbs than nouns, a complete inability to read non-words, and often impairments on tasks of verbal working memory.

Lesson-33

FIRST LANGUAGE ACQUISITION

Topic-193: Theories of First Language Acquisition

Various theories have arose since language studies came to fore, and the ability to acquire language has interested various parties since the dawn of man. From the dunes of Egypt Psammeticus, the Pharaoh during the 7th century BC, believed language was inborn and that children isolated from birth from any linguistic influence would develop the language they had been born with. Fast forward to the 15th century, King James V of Scotland performed a similar experiment; the children were reported to have spoken good Hebrew. Akbar, a 16th century Mogul emperor of India, desired to learn whether language was innate or acquired through exposure to the speech of adults. He believed that language was learned by people listening to each other and therefore a child could not develop language alone. So he ordered a house built for two infants and stationed a mute nurse to care for them. The children did not acquire speech, which seemed to prove Akbar's hypothesis that language is acquired and does not simply emerge spontaneously in the absence of exposure to speech.

Henceforth, modern linguists have been trying hard to crack the codes which govern the acquisition and learning of a language. Theories ranging from Jean Piaget's Cognitive Theory(1929), Skinner's Behaviorist Theory (1957), to Chomsky's The Innateness Hypothesis, and Lambert's Critical Period Hypothesis(1967) for first language acquisition, and finally Krashen's 5 hypothesis of second language learning have paved a way for an insight, a way to unravel the way the mind works in acquiring and learning a language -which happen to be distinct from one another- and here, we will be looking at the theories that have been the workhorse of language acquisition and learning.

Topic-194: Challenges of Approaches to First Language Acquisition

Skinner's theories attracted a number of critics, not the least among them Noam Chomsky (1959), who penned a highly critical review of Verbal Behavior. Some years later, however, KemieUi MacCorquodale (1970) published a reply to Chomsky's review in which he eloquently defended Skinner's points of view. And so the controversy raged on.

Some psychologists proposed modified theoretical positions. One of these positions was mediation theory, in which meaning was accounted for by the claim that the linguistic stimulus (a word or sentence) elicits a "mediating" response that is self-stimulating. Charles Osgood (1953, 1957) called this self-stimulation a "representational mediation process," a process that is really covert and invisible, acting within the learner. It is interesting that mediation theory thus attempted to account for abstraction by a notion drat reeked of "mentalism"—a cardinal sin for dyed-in-the-wool bebaviorists! In fact, in some ways mediation theory was really a rational/cognitive theory masquerading as behavioral. Mediation theories still left many questions about language unanswered. The abstract nature of language and the relationship between meaning and utterance were unresolved. AH sentences have deep structures—deep level of underlying meaning that is only manifested over by surface structures. These deep structures are intricately interwoven in a person's total cognitive and affective experience. Such depths of language were scarcely plumbed by mediation theory.

Topic-195: Issues in First Language Acquisition

Competence and performance: For centuries scientists and philosophers have drawn basic distinction between competence and performance. Competence refers to one's underlying knowledge of a system, event, or fact. It is the non-observable ability to do something, to perform something. Performance is the overtly observable and concrete manifestation or realization of competence. It is the actual doing of something: walking, singing, dancing, speaking. In technological societies we have used the competence-performance distinction in all walks of life. In our schools, for example, we have assumed that children possess certain competence in given areas and that this competence can be measured and assessed by means of the observation of elicited samples of performance called "tests" and "examinations." In reference to language, competence is one's underlying knowledge of the system of a language—its rules of grammar, its vocabulary, all the pieces of a language and how those pieces fit together. Performance is actual production (speaking, writing) or the comprehension (listening, reading) of linguistic events. Chomsky (1965) likened competence to an "idealized" speaker-hearer who does not display such performance variables as memory limitations, distractions, shifts of attention and interest, errors, and hesitation phenomena such as repeats, false starts, pauses, omissions, and additions. Chomsky's point was that a theory of language had to be a theory of competence lest the linguist try in vain to categorize an infinite number of performance variables that are not reflective of the underlying linguistic ability of the speaker-hearer.

Comprehension and production: Not to be confused with the competence-performance distinction, comprehension, and production can be aspects of both performance and competence. One of the myths that has crept into some foreign language teaching materials is that comprehension (listening, reading) can be equated with competence, while production (speaking, writing) is performance, it is important to recognize that this is not the case; production is of course more directly observable, but comprehension is as much performance as production is. In child language, most observational and research evidence points to the general superiority of comprehension over production; children seem to understand "more" than they actually produce, For instance, a child may understand a sentence with an embedded relative in it (e.g., "The ball that's in the sandbox is red") but not be able to produce one. W. R, Miller (1963, p. 863) gave us a good example of this phenomenon in phonological development: "Recently a three-year-old child told me her name was Litha. 1 answered 'Litha?' 'No, Litha.' 'Oh, Lisa.' 'Yes, Litha.'" The child clearly perceived the contrast between English s and th, even though she could not produce the contrast herself. How are we to explain this difference, this apparent "lag" between comprehension and production? We know that even adults understand more vocabulary than they ever use in speech, and also perceive more syntactic variation than they actually produce. Could it be that the same competence accounts for both modes of performance? Or can we speak of comprehension competence as something that is identified as separate from production competence? Because comprehension for the most part runs ahead of production, is it more completely indicative of our overall competence? Is production indicative of a smaller portion of competence? Surely not. It is therefore necessary to make a distinction between production competence and comprehension competence. A theory of language must include some accounting of the separation of the two types of competence. In fact, linguistic competence no doubt has several modes or levels, at least as many as tour, since speaking, listening, reading, and writing are all separate modes of performance.

Topic-196: Nature or Nurture Universal

Nativists contend that a child is born with an innate knowledge of or predisposition toward language, and that this innate property (the LAD or UG) is universal in all human beings. The innateness hypothesis was a possible resolution of the contradiction between the behavioral notion that language is a set of habits that can be acquired by a process of conditioning and the fact that such conditioning is much too slow and inefficient a process to account for the acquisition of a phenomenon as complex as language. But the innateness hypothesis presented a number of problems itself. One of the difficulties has already been discussed in this chapter: the LAD proposition simply postpones facing the central issue of the nature of the human being's capacity for language acquisition. Having thus "explained" language acquisition, one must now scientifically explain the genetic transmission of linguistic ability— which we cannot yet do with certainty. And, of course, scholars taking an emergen-tist perspective continue to challenge the notion that what is innate is grammatical or linguistic at all, On the other hand, while the LAD remains a tentative hypothesis, I think we can take heart in slowly mounting genetic (scientific) evidence of the transmission of certain abilities, and assume that among those abilities we will one day find hard evidence of "language genes." We must not put all our eggs in the innateness basket. Environmental factors cannot by any means be ignored, as connectionists and emergentists have shown. For years linguists, psychologists, and educators have been embroiled in the "nature-nurture" controversy: What are those behaviors that "nature" provides innately, in some sort of predetermined biological timetable, and what are those behaviors that are, by environmental exposure—by "nurture," by teaching—learned and internalized? We do observe that language acquisition is universal), that every child acquires language. But how are the efficiency and success of that learning determined by the environment the child is in? Or by the child's individual construction of linguistic reality in interaction with others? The waters of the innateness hypothesis are considerably muddied by such questions. An interesting line of research on innateness was pursued by Derek Bickerton (1981), who found evidence, across a number of languages, of common patterns of linguistic and cognitive development. He proposed that human beings are "bio-programmed" to proceed from stage to stage. Like flowering plants, people are innately programmed to "release" certain properties of language at certain developmental ages. Just as we cannot make a geranium bloom before its "time," human beings will "bloom" in predetermined, preprogrammed steps.

Topic-197: Language and Thought Imitation, Practice and Frequency, Input, Discourse

For years researchers have probed the relationship between language and cognition. The behavioral view that cognition is too mentalistic to be studied by the scientific method is diametrically opposed to such positions as that of Piaget (1972) who claimed that cognitive development is at the very center of the human organism and that language is dependent upon and springs from cognitive development. Others emphasized the influence of language on cognitive development. Jerome Bruner (Bruner, Olver, & Greenfield, 1966), for example, singled out sources of language-influenced intellectual development: words shaping concepts, dialogues between parent and child or teacher and child serving to orient and educate, and other sources. Vygotsky (1962, 1978) also differed from Piaget in claiming that social interaction, through language, is a prerequisite to cognitive development. Thought and language were seen as two distinct cognitive operations that grow together (Schinke-Llano, 1993).

Topic-198: First Language Acquisition Insights Applied to Language Teaching

There is a strong evidence for an innate linguistic capacity that assists in the acquisition of linguistic structures. However, by broadening the conception of language to include semantics and pragmatics, the child's environmental and social interactions become increasingly important. The capacity to learn language is therefore multifarious and due to a seemingly inextricable combination of biological and environmental factors. It is with this in mind that the essay will turn to consider whether similar language learning capacities exist within second language learners, noting from the outset some difficulties that arise in making cross-learner comparisons.

Lesson-34

AGE AND ACQUISITION

Topic-199: Children Vs. Adults in Second-Language Learning

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

Topic-200: Neurobiological Considerations Hemispheric Lateralization

Hemispheric Lateralization: Some scholars have singled out the lateralization of the brain as the key to answering such a question. There is evidence in neurological research that as the human brain matures, certain functions are assigned, or "lateralized" to the left hemisphere of the brain, and certain other functions to the right hemisphere. Intellectual, logical, and analytic functions appear to be largely located in the left hemisphere, while the right hemisphere controls functions related to emotional and social needs. Language functions appear to be controlled mainly in the left hemisphere, although there is a good deal of conflicting evidence. For example, patients who have had left hemispherectomies have been capable of comprehending and producing an amazing amount of language. Generally, a stroke or accident victim who suffers a lesion in the left hemisphere will manifest some language impairment, which is less often the case with right hemisphere lesions. However, before drawing any conclusions here, some caution is in order. Millar and Whitaker's (1983. p. 110) conclusion of over 20 years ago still stands: "enough data have accumulated to challenge the simple view that the left hemisphere is the language hemisphere and the right hemisphere does something else." While questions about precisely how language is lateralized in the brain are interesting indeed, a more crucial question for second language researchers has centered on when lateralization takes place, and whether or not that lateralization process affects language acquisition. Uric Lcnneberg (1967) and others suggested that lateralization is a slow process that begins around the age of 2 and is completed around puberty. During this time the child is presumably neurologically assigning functions little by little to one side of the brain or the other; included in these functions, of course, is language.

Topic-201: Anthropological Evidence

Anthropological Evidence: Some adults have been known to acquire an authentic accent in a second language after the age of puberty, but such individuals are few and far between. Anthropologist Jane Hill (1970) provided an intriguing response to Scovel's (1969) study by citing anthropological research on non-Western societies that yielded evidence that adults can, in the normal course of their lives, acquire second languages perfectly. One unique instance of second language acquisition in adulthood was reported by Sorenson (1967), who studied the Tukano culture of South America, At least two dozen languages were spoken among these communities, and each tribal group, identified by the language it speaks, is an exogamous unit; that is, people must marry outside their group, and hence almost always marry someone who speaks another language. Sorenson reported that during adolescence, individuals actively and almost suddenly began to speak two or three other languages to which they had been exposed at some point. Even more recently, Mover (2004) has reminded us of a multitude of cognitive, social, psychological, and strategic variables affecting the ultimate attainment of proficiency in a second language.

Cognitive considerations

Human cognition develops rapidly throughout the first 16 years of life and less rapidly thereafter. Some cognitive changes are critical; others are more gradual and difficult to detect. Jean Piaget (1972; 1955; Piaget & Inhelder, 1969) outlined the course of intellectual development in a child through various stages: * Sensorimotor stage (birth to 2) * Preoperational stage (ages 2 to 7) * Operational stage (ages 7 to 16) • Concrete operational stage (ages 7 to 11) * Formal operational stage (ages 11 to 16). A critical stage for a consideration of the effects of age on second language acquisition appears to occur, in Piaget's outline, at puberty (age 11 in his model).

It is here that a person becomes capable of abstraction, of formal thinking which transcends concrete experience and direct perception. Cognitively, then, an argument can be made for a critical period of language acquisition by connecting language acquisition and the concrete/formal stage transition. However, as reasonable as such a contention might sound, even here some caution is warranted. Singleton and Ryan offer a number of objections to connecting Piagetian stages of development with critical period arguments, not the least of which was the "vagueness" and lack of empirical data in Piaget's theory. Ausubel (1964) hinted at the relevance of such a connection when he noted that adults learning a second language could profit from certain grammatical explanations and deductive thinking that obviously would be pointless for a child. Whether adults do in fact profit from such explanations depends, of course, on the suitability and efficiency of the explanation, the teacher, the context, and other pedagogical variables.

Topic-202: Interference Between First and Second Languages

The only way a learner can start to communicate in a second language is the time a learner begins to assume word-for-word translation equivalence or it is thought that every L1 word has one translation in L2 by the learners (Blum-Kulka & Levenston, as cited in Bhela, 1999, p. 30). When learners of second language want to write or speak in the target language, they tend to rely on their first language structures. If the structures are different, then a lot of errors occur in L1. Thus this indicates an

interference of first language on second language. Interference is the errors that can be traced back to the first language, while the learners use the second language.

Topic-203: Issues in First Language Acquisition Revisited

Issue one: Position meeting the criteria for a scientific theory: Chomsky's innateness position seems to meet a convincing criterion for a scientific theory. It covers aspects of some other theories, possesses the properties of scientific theory and has claims for contents. Chomsky believes that both body and mind exist, and the elements needed for theory-making are body, behavior, and mind. His position shares aspects from other positions; for example, epiphenomenalism considers mind as the side effect of an action.

Issue two: Child's logical thinking: Piaget supports the child's logical thinking which is attributable to his third stage of development called "concerned operational period" (occurring roughly around the age of 7 to 11 years). Piaget labels stage three as "preparation for an achievement of concrete operations."

Issue three: The origins of language: First, we refer to Chomsky's position and then to that of Vygotsky. Chomsky is nativist, and he argues that the ability to acquire language is innate and that children are programmed to learn language. Some form of pre-programming can explain the speed with which children learn the complex skill of using language and the similarity of language acquisition across cultures.

Topic-204: Order of Acquisition

The order of acquisition is a concept in language acquisition describing the specific order in which all language learners acquire the grammatical features of their first language. This concept is based on the observation that all children acquire their first language in a fixed, universal order, regardless of the specific grammatical structure of the language they learn. Linguistic research has largely confirmed that this phenomenon is true for first-language learners; order of acquisition for second-language learners is much less consistent. It is not clear why the order differs for second-language learners, though current research suggests this variability may stem from first-language interference or general cognitive interference from nonlinguistic mental faculties.

There is research to suggest that most SLA learners begin their learning process with a silent period in which the learners begin to process pieces of the language they hear. This is considered a period of "language shock", in which they ignore some of the incomprehensible input of the new language. However, research has shown that many "silent learners" are engaging in private speech, sometimes called "self-talk." While appearing silent, they are rehearsing important survival phrases (lexical chunks). These memorized phrases are soon used in various situations, either by choice or necessity. Fewer learners have no silent period and pass directly into patterned speech. This speech is used to accomplish basic communication, often showing few departures from detached words strung together, which in time leads to more fluid phrases. Grammar of the target language is also simplified and the learners begin to construct an understanding of the second language, often attempting "sentences" that mix words or phrases from both their first and second languages.

Lesson-35

CHILDREN VS. ADULTS IN SECOND-LANGUAGE LEARNING

Topic-205: Children are Better: A Common Belief Psychological Category

Speaking a second language is an important skill for all people, both young and old. It has long been believed that children are better able to learn a second language. In actuality, it is not that children learn language better than adults, but that adults and children learn language differently. By understanding these differences and making adjustments to the learning process, all people can acquire a second language, no matter their age.

Processing differences: There are distinct differences in the way an adult brain processes a foreign language when compared to the brain of a child. Dr. Paul Thompson of UCLA used MRI imaging and animation technology to view what parts of the brain adults and children use when learning a second language. What was found is that children use a part of their brain called the "deep motor area." The "deep motor area" of the brain is responsible for processes that are not consciously thought about, like brushing your teeth or getting dressed. For children, processing a new language is second nature. Adults process language in a more active part of the brain, meaning that they think more consciously about language rather than it being intuitive.

Proficiency differences: One reason that it seems that children acquire a second language quicker than adults is because of the different standards of proficiency between adults and children. Children have a smaller vocabulary and it is easy to learn enough of a second language to communicate their needs. Adults have a much larger vocabulary and think and communicate in more complex ways than children. This means it takes them longer to acquire the ability to communicate effectively in a second language. Although it seems that children learn language quicker than adults, in actuality adults and adolescents have the edge.

Pronunciation: Another reason that the myth persists that children learn second languages easier than adults is because of the child's ability to adapt the proper pronunciation of a language. It is true that the younger a child begins to learn a second language, the better their pronunciation. Adults have a more difficult time adapting the pronunciation of a foreign language, and so sound less competent than a child who has the ability to speak a second language with the proper accent.

Aging and learning ability: Another common misconception is that as people age, their ability to learn a new skill diminishes. In actuality, people do not lose their ability to learn as they age. The only challenges an older learner of a second language faces is the weakening of vision and hearing. The loss of hearing in particular can affect a person's ability to learn a language in the traditional classroom setting. A healthy, older adult is perfectly capable of learning a second language.

Learning methods: Because children and adults learn differently and use different parts of their brains to process language, the way they are taught a second language should also differ. Exposing children to a second language at home as well as at school is essential to their learning. Singing songs, reading books, and repetition of foreign words are all useful tools in helping a child learn a new language.

Older learners, especially those with hearing and vision difficulties, may have difficulties learning in a traditional classroom setting. Working with a group that focuses more on understanding the language rather than perfecting pronunciation, and integrates new concepts into the adults preexisting cognitive structures will help the older learner succeed.

Motivation: A number of factors that affect second-language learning operate only in certain types of situations. The question of motivation for learning a second language, for instance, is not likely to arise in a natural type of setting such as with a young child. A 1- or 2-year-old needs no motivation to learn a second language; given language input, the young child will automatically learn – with learning even occurring in negative circumstances. An older child of 4 or 5 years, however, may need motivation in order to learn a second language since by that age the child may be aware of whether a language is positively or negatively regarded by others, or the child may prefer other activities.

Attitude: A negative attitude towards the target language or its speakers, or the other members of the class, may also affect one's determination and persistence to be involved in the classroom and its activities. This same negative attitude could impair memory functioning and detract from focusing on the target language. In the same way, any of a host of personality and sociocultural variables could have deleterious effects (Brown, 1987).

Topic-206: Social Category

Three types of social structures which can affect the acquisition of second languages are: sociolinguistic setting, specific social factors, and situational factors. Sociolinguistic setting refers to the role of the second language in society. Specific social factors that can affect second language acquisition include age, gender, social class, and ethnic identity. Situational factors are those which vary between each social interaction.

Language attitudes: Language attitudes in the learner, the peer group, the school, the neighborhood, and society at large can have an enormous effect on the second language learning process, both positive and negative.

Learner attitudes: Learners manifest different attitudes towards 1) the target language, 2) the target language speakers, 3) the target language culture, 4) the social value of learning the L2, 5) particular use of the target language, and 6) themselves as members of their own culture. In general, positive attitudes towards the L2, its speakers, and its culture can enhance learning, which can in turn be influenced by this success; negative attitudes can impede learning. However, if learners have a strong reason for learning, negative attitude can have a positive effect. Learners may have conflicting attitudes. Learners might want to learn the L2 as a way of assimilating into the majority culture, but at the same time, they may wish to keep their L1 as a means of maintaining their L1 identity.

Age: Younger speakers are subject to peer group pressure, (and they use the nonstandard form used by their peer group); the middle-aged group is less subject to peer group pressure, and they are more influenced by mainstream societal values. For older people, the social pressures lessen and social networks again become narrow. Generally, learners who learn an L2 after puberty (or possibility earlier) are unlikely to acquire a native-speaker accent while those who begin after 15 years are less likely to develop full grammatical ability – Chambers and Trudgill (1980).

Gender: Two apparently contradictory principles noticed by sociolinguists are:

1. In stable sociolinguistic stratification, men use a higher frequency of nonstandard forms than women.
2. In the majority of linguistic changes, women use a higher frequency of the incoming forms than men.

Women may be better language learners. They are more sensitive to the new linguistic forms and are more ready to incorporate them into their speech. Thus they will be more likely to rid themselves of any inter language forms that deviate from target-language norms.

In sum, currently there are no clear-cut explanations yet as to why females outperform males in L2 learning. The reasons that females hold a more positive attitude seems to have been widely agreed. Male and female culture differences are also possible explanations. Females are more cooperative and more delicate in dealing with relationship while males emphasize more maintaining their hierarchical relationship. Thus female 'culture' fits L2 learning, as it is more readily to deal with the treat to their identity posed by L2 learning. There is also some evidence suggesting that females' better listening comprehension ability puts them at an advantage in L2 learning.

Topic-207: Basic Psychological Factors Affecting Second-Language Learning

Explication: The nature of explication is the process whereby the rules and structures of a second language are explained to a learner. This explanation is given in the first language of the learner. The learner is then expected to understand, learn, and apply the rule in the second language. Why a language cannot be learned completely by explication while parts of a second language can be learned by explication, it is impossible for it to be learned entirely by explication. This is because not all of the rules of any one language have been discovered and written down. Even for a language such as English, the most researched of all languages; one still finds linguistic journals discussing the concepts involved in such commonplace features of English as tense and the article.

Induction: Learning rules by self-discovery is the essence of the process of induction. The child who is exposed to second-language speech and remembers what he or she has heard will be able to analyze and discover the generalization or rule that underlies that speech. Actually, not only must the learner devise the rule based on the speech that has been heard, but he or she must also figure out how those rules are to be applied in other cases.

Memory: Vocabulary learning and rote memory is crucial to learning. It is inconceivable that a person with severe memory impairment could ever learn his or her native language, much less a second language. The learning of the simplest word requires memory. A person learning the word 'dog', for example, must retain a connection between the hearing of 'dog' and the experience of seeing, touching, or smelling a dog. Such a connection between the sound and the object is arbitrary. There is no logical relationship between the sound 'dog' and its meaning.

Topic-208: Summary of Three Important Psychological Factors Affecting Second-Language Learning

Let us now summarize the effects on second-language learning of the various psychological variables. Three basic psychological categories are: Intellectual, which is subdivided into Inductive and Explicative; Memory; and Motor Skills. Along the left margin of the table, persons are divided into three age groups: Children under 7, Children 7 to 12, and Adults over 12.

Induction: We can see that insofar as Induction is concerned, this ability remains at a relatively high level with age, except with certain individuals in old age. Such ability allows us to make new discoveries.

Topic-209: Social Situations Affecting Second-Language Learning

There are many social situations in which a second language is learned. Basically, we can cover the most important of them according to three categories, the natural, the classroom, and community context. The natural situation in which a second language is learned is one that is similar to that in which the first language is learned. It can involve social situations such as those involving family, play, or the workplace. The classroom situation involves the social situation of the school classroom. Each of these types of social situations has its own advantages and disadvantages. The community context allows students to have access to a natural situation outside of the class and thereby supplement their classroom learning.

Topic-210: Classroom Situations: Is There A Critical Age for Second-Language Learning?

Adults can learn a second language; it is reasonable to ask the same question about the acquisition of a second language. Is there any barrier to the learning of a second language and, if so, at what age does this barrier become operational? As far as adult second-language learning is concerned, we have the common observation that a very great number of adults do, in fact, learn the syntax of other languages perfectly. There are those who speak second languages so well that, on the basis of the grammar alone (not the pronunciation, which we shall deal with shortly), they would be judged native speakers. There is no demonstrated critical age for learning syntax. There are, however, studies which demonstrate a differential effect for the age at which acquisition of syntax began. Patkowski (1980) had native speakers of English rate the syntax of transcripts of spontaneous speech from immigrants to the USA who had entered before or after the age of 15. Transcripts were used to remove any possible influence of accent on the raters.

Lesson-36

LANGUAGE, LEARNING, AND TEACHING

Topic-211: Second Language Acquisition: Learner Characteristics, Linguistic Factors, Learning Processes

Three learner characteristics have consistently been found to be consequential for language learning: motivation, anxiety, and beliefs about language learning.

Topic-212: Age and Acquisition Instructional Variables

The age of second language (L2) acquisition is a factor that has raised a lot of interest and controversy. This phenomenon is called the "critical period" or "time sensitive" According to Lenneberg, the critical period for language acquisition begins around the age of two. Research published prior to the mid-1990s claimed that people learning a second language after puberty still retain a foreign accent, while those who acquired it before puberty did not. Scovel suggests that if second language learning begins after the age of 12 years, learners can never "pass themselves off as native speakers phonologically".

In early childhood, becoming bilingual is often an unconscious event, as natural as learning to walk or ride a bicycle. Butwhy? According scientific surveys, language aspects such as **pronunciation** and **intonation** can be acquired easier during childhood, due to **neuromuscular mechanisms** which are only active until to the age of 12. Long agrees, but goes further by conditioning the acquisition of a native competence in morphology and syntax to exposure to the second before the age of 15.These assertions are contradicted by empirical studies on older beginners who have reached very high in second language levels of competence.

Other factors that we should take into consideration are children's **flexibility**, **spontaneity** and **tolerance** to new experiences. Kids are more willing to communicate with people than adults, they are curious and they are not afraid of making mistakes. They handle difficulties (such as missing vocabulary) very easily by using creative methods to communicate, such as non-verbal means of communication and use of onomatopoetic words. Also the idea of a foreign civilization is not formed in their minds yet. Only at the age of 8 does it become clear to them that there are ethnic and cultural differences. Last but not least, aspects such as time, greater **learning and memory capacity** are in any case advantages in early language learning. On the other hand there are surveys which point out the risk of **semi-legalism** and advice parents to organize language planning carefully.

Topic-213: Rejoicing in Our Defeats: Language Learning and Teaching

Second language learning

Second language learning is a conscious process where the learning of another language other than the First language (L1) takes place. Often confused with bilingualism and multilingualism, the process has to take place after the first language(s) has already been acquired. Having said that, Second language learning could also refer to the third, fourth, or fifth (so on and so forth) language the learner is currently learning. People who adopt the memory strategy depend on their **memorizing ability**. They find ways to remember better to aid in entering information into long-term memory, by creating a word-

meaning map in their brain (mental linkages), and then being able to retrieve that information. Adopting this strategy will allow the learning and retrieval via sounds (e.g., rhyming), images (e.g., a mental picture of the word itself or the meaning of the word), a combination of sounds and images (e.g., the keyword method), body movement (e.g., total physical response), mechanical means (e.g., flashcards), or location (e.g., on a page or blackboard). Things they do: do a lot of exercises on English grammar. Create a word bank from your reading materials or TV shows and memorize the meaning of the words and try to use them.

Cognitive strategy

People who adopt the cognitive strategy tend to **analyze and reason**. They form internal mental codes and revise them to receive and produce the message in the target language. Adopting this strategy will enable you to internalize the language in direct ways such as through reasoning, analysis, note-taking, summarizing, synthesizing, outlining, and practicing in naturalistic settings, and practicing structures and sounds formally.

Things they do: People learning Korean watch Korean dramas and try to replicate how the characters pronounce Korean words. Watch Korean dramas and try to replicate how the characters use certain words in a sentence. Write emails or letters in SL. Read SL reading materials such as magazines and newspapers.

Comprehension strategy

People who adopt the comprehension strategy find themselves **guessing unknown words when listening and reading**. They also try to replace words they do not know with longer phrases or other words that they know when speaking and writing to overcome gaps in knowledge.

Things they do: Try to guess the meaning of words they don't know. Try to understand the meaning through looking at the word in context. Guess the meaning of some words by reading the whole passage. Try to look for cues or nonverbal signs when in conversation.

Metacognitive strategy

People who adopt the metacognitive strategy **plan, arrange, focus, evaluate on their own learning process**. They identify and monitor their own learning style preferences and needs, such as gathering and organizing L2 materials, arranging a study space and a schedule for L2 revision and learning, monitoring mistakes made in L2, evaluating task success, and evaluating the success of any type of learning strategy.

Things they do: Observe how the SL teacher speaks in the SL. Observe how they themselves speak in the SL. Practice speaking in SL in front of the mirror. Crosscheck with Google to find out if their pronunciation is correct, and correct it. Doing crossword puzzles and play word games like scrabble. Take note of how other people communicate in SL, especially natives.

Language teaching

Teaching cannot be defined apart from learning. Teaching is guiding and facilitating learning, enabling the learner to learn, setting the conditions for learning. Your understanding of how the learner learns will determine your philosophy of education, your teaching style, your approach, methods, and classroom techniques. If, like B. F. Skinner, you look at learning as a process of operant conditioning

through a carefully paced program of reinforcement, you will teach accordingly. If you view second language learning as a deductive rather than an inductive process, you will probably choose to present copious rules and paradigms to your students rather than let them "discover" those rules inductively. An extended definition—or theory—of teaching will spell out governing principles for choosing certain methods and techniques. A theory of teaching, in harmony with your integrated understanding of the learner and of the subject matter to be learned, will point the way to successful procedures on a given day for given learners under the various constraints of the particular context of learning. In other words, your theory of teaching is your theory of learning "stood on its head."

Topic-214: Schools of Thought in Second Language Acquisition

Structural Linguistics and Behavioral Psychology: In the 1940s and 1950s, the structural, or descriptive, school of linguistics, with its advocates—Leonard Bloonifield, Edward Sapir, Charles Hockett, Charles Fries, and others—prided itself in a rigorous application of scientific observations of human languages. Only "publicly observable responses" could be subject to investigation. The linguist's task, according to the Structuralist, was to describe human languages and to identify the structural characteristics of those languages. An important axiom of structural linguistics was that languages can differ from each other without limit, and that no preconceptions could apply across languages. Freeman Twaddeli (1935, p. 57) stated this principle in perhaps its most extreme terms: whatever our attitude toward mind, spirit, soul, etc., as realities, we must agree that the scientist proceeds as though there were no such things, as though all his information were acquired through processes of his physiological nervous system. Insofar as he occupies himself with psychical, nonmaterial forces, the scientist is not a scientist. The scientific method is quite simply the convention that mind does not exist. Twaddeli was underscoring the mandate for the structural linguist to examine only overtly observable data, and to ignore the "mind" insofar as the latter represented a rationalistic approach that gave credence to unobservable guesses, hunches and intuition. Such attitudes prevailed in B. E Skinner's thought particularly in Verbal Behavior (1957), in which he said that any notion of "idea" or "meaning" is explanatory fiction, and that the speaker is merely the locus of verbal behavior, not the cause. Charles Osgood (1957) reinstated meaning in verbal behavior, explaining it as a "representational mediation process" but still did not depart from a generally nonmentalistic view of language. Of further importance to the structural or descriptive linguist was the notion that language could be dismantled into small pieces or units and that these units could be described scientifically, contrasted, and added up again to form the whole. From this principle emerged an unchecked rush of linguists, in the 1940s and 1950s, to the far reaches of the earth to engage in the rigorous production of detailed descriptions of "exotic" languages.

Generative linguistics and cognitive psychology: In the decade of the 1960s, generative-transformational linguistics emerged through the influence of Noam Chomsky and a number of his followers. Chomsky was trying to show that human language cannot be scrutinized simply in terms of observable stimuli and responses or the volumes of raw data gathered by Held linguists. The generative linguist was interested not only in describing language (achieving the level of descriptive adequacy) but also in arriving at an explanatory level of adequacy in the study of language, that is, a "principled basis, independent of any particular language, for the selection of the descriptively adequate grammar of each language" (Chomsky, 1964, p. 63). Early seeds of the generative-transformational revolution were planted near the beginning of the twentieth century. Ferdinand de Saussure (1916) claimed that there was a difference between parole (what Skinner "observes," and what Chomsky called performance), on the one

hand, and langue (akin to the concept of competence, or our underlying and unobservable language ability). A few decades later, however, descriptive linguists chose largely to ignore langue and to study parole, as was noted above. The revolution brought about by generative linguistics broke with the descriptivists' preoccupation with performance—the outward manifestation of language—and capitalized on the important distinction between the overtly observable aspects of language and the hidden levels of meaning and thought that give birth to and generate observable linguistic performance. Similarly, cognitive psychologists asserted that meaning, understanding, and knowing were significant data for psychological study. Instead of focusing rather mechanistically on stimulus-response connections, cognitivists tried to discover psychological principles of organization and functioning, David Ausubel (1965. p. 4) noted: from the standpoint of cognitive theorists, the attempt to ignore conscious states or to reduce cognition to mediational processes reflective of implicit behavior not only removes from the field of psychology what is most worth studying but also dangerously oversimplifies highly complex psychological phenomena. Cognitive psychologists, like generative linguists, sought to discover underlying motivations and deeper structures of human behavior by using a rational approach. That is, they freed themselves from the strictly empirical study typical of behaviorists and employed the tools of logic, reason, extrapolation, and inference in order to derive explanations for human behavior. Going beyond merely descriptive adequacy to explanatory power took on utmost importance. Both the structural linguist and the behavioral psychologist were interested in description, in answering what questions about human behavior; objective measurement of behavior in controlled circumstances. The generative linguist and cognitive psychologist were, to be sure, interested in the what question; but they were far more interested in a more ultimate question, why: what underlying factors-innate, psychological, social, or environmental circumstances—caused a particular behavior in a human being? If you were to observe someone walk into your house, pick up a chair and fling it through your window, and then walk out, different kinds of questions could be asked. One set of questions would relate to what happened: the physical description of the person, the time of day, the size of the chair, the impact of the chair, and so forth. Another set of questions would ask why the person did what he or she did: what were the person's motives and psychological stare, what might have been the cause of the behavior, and so on. The first set of questions is very rigorous and exacting: it allows no flaw, no mistake in measurement; but does it give you ultimate answers? The second set of questions is richer, but obviously riskier. By daring to ask some difficult questions about the unobserved, we may lose some ground but gain more profound insight about human behavior.

Constructivism- a multidisciplinary approach: Constructivism is hardly a new school of thought. Jean Piaget and Lev Vygotsky, names often associated with constructivism, are not by any means new to the scene of language studies. Yet, in a variety of post-structuralist theoretical positions, constructivism emerged as a prevailing paradigm only in the last part of the twentieth century, and is now almost orthodoxy. A refreshing characteristic of constructivism is its integration of linguistic, psychological, and sociological paradigms, in contrast to the professional chasms that often divided those disciplines in the previous century. Now, with its emphasis on social interaction and the discovery, or construction, of meaning, the three disciplines have much more common ground. What is constructivism, and how does it differ from the other two viewpoints described above? First, it will be helpful to think of two branches of constructivism: cognitive and social. In the cognitive version of constructivism, emphasis is placed on the importance of learners constructing their own representation of reality. "Learners must individually discover and transform complex information if they are to make it their own, [suggesting] a

more active role tor students in their own learning than is typical in many classrooms" (Siavin, 2003. pp. 257-258). Such claims are rooted in Piaget's (1954, 1955, 1970; Piaget & Inlielder. 1969) seminal work in the middle of the twentieth century, but have taken that long to become widely accepted views, for Piaget, "learning is a developmental process that involves change, self-generation, and construction, each building on prior learning experiences" (Kaufman, 2004, p. 304). Social constructivism emphasizes the importance of social interaction and cooperative learning in constructing both cognitive and emotional images of reality. Spivcy (1997, p. 24) noted that constructionist research tends to focus on "individuals engaged in social practices, ... on a collaborative group, [or] on a global community." "The champion of social constructivism is Vygotsky (1978), who advocated the view that "children's thinking and meaning-making is socially constructed and emerges out of their social interactions with their environment" (Kaufman, 2004. p. 304).

Topic-215: Nineteen Centuries of Language Teaching

Kelly's (1969) informative survey of language teaching over "twenty-five centuries" revealed interesting anecdotal accounts of foreign language instruction but few if any research-based language teaching methods. In the Western world, "foreign" language learning in schools was synonymous with the learning of Latin or Greek. Latin, though, to promote intellectuality through "mental gymnastics," was until relatively recently held to be indispensable to an adequate higher education. Latin was taught by means of what has been called the Classical Method: focus on grammatical rules, memorization of vocabulary and of various declensions and conjugations, translation of texts, doing written exercises. As other languages began to be taught in educational institutions in the eighteenth and nineteenth centuries, the Classical Method was adopted as the chief means for teaching foreign languages. Little thought was given at the time to teaching oral use of languages; after all, languages were not being taught primarily to learn oral/aural communication, but to learn for the sake of being "scholarly" or, in some instances, for gaining a reading proficiency in a foreign language. Since there was little if any theoretical research on second language acquisition in general, or on the acquisition of reading proficiency, foreign languages were taught as any other skill was taught. So language teaching before the twentieth century is best captured as a "tradition" that, in various manifestations and adaptations, has been practiced in language classrooms worldwide even up to the present time. Late in the nineteenth century, the Classical Method came to be known as the Grammar Translation Method. There was little to distinguish Grammar Translation from what had gone on in foreign language classrooms for centuries, beyond a focus on grammatical rules as the basis for translating from the second to the native language. But the Grammar Translation Method remarkably withstood attempts at the outset of the twentieth century to "reform" language teaching methodology, and to this day it remains a standard methodology for language teaching in educational institutions. Prator and Ceice-Murcia (1979, p. 3) listed the major characteristics of Grammar Translation:

1. Classes taught in the mother tongue; little use of the L2.
2. Much vocabulary taught in the form of lists of isolated words.
3. Elaborate explanations of the intricacies of grammar.
4. Reading of difficult classical texts begun early.
5. Texts treated as exercises in grammatical analysis.
6. Occasional drills and exercises in translating sentences from LI to L2.
7. Little or no attention to pronunciation.

It is remarkable, in one sense, that this method has been so stalwart among many competing models. It does virtually nothing to enhance a student's communicative ability in the language. It is "remembered with distaste by thousands of school learners, for whom foreign language learning meant a tedious experience of memorizing endless lists of unusable grammar rules and vocabulary and attempting to produce perfect translations of stilted or literary prose."

Topic-216: Language Teaching in the Twentieth Century

Against the backdrop of the previous 19 centuries, a glance through the past century or so of language teaching gives us, ironically, a rather refreshingly interesting picture of varied interpretations of the "best" way to teach a foreign language. Perhaps beginning with Francois Gouin's (1880) Series Method, foreign language teaching underwent some revolutionary trends, all of which in one way or another came under the scrutiny of scientific (or observational) research. As schools of thought have come and gone, so have language teaching trends waxed and waned in popularity. Historically, pedagogical innovation has been the beneficiary of the theoretical research described in the previous section, as witnessed by the influence of such research on trends in language teaching. At the same time, language classrooms and their innovative teachers and students have been laboratories of research that have, in turn, informed theoretical stances as they have changed over time. Albert Marckwardt (19*72, p. 5) saw these "changing winds and shifting sands" as a cyclical pattern in which a new paradigm (to use Kuhn's term) of teaching methodology emerged about every quarter of a century, with each new method breaking from the old but at the same time taking with it some of the positive aspects of the previous paradigm. More recently, Mitchell and Vidal (2001) described our perhaps misguided penchant for characterizing the last century of language teaching metaphorically as a pendulum swinging back and forth between a number of opposing options: focus on accuracy vs. focus on fluency, separation of skills vs. integration of skills, and teacher-centered vs. learner-centered approaches, to name a few. Mitchell and Vidal suggested that a new metaphor may better depict our journey across time: "that of a major river, constantly flowing, fed by many sources of water—rivers, streams, springs in remote territories, all fed by rain on wide expanses of land" (p. 27). One of the best examples of both the cyclical and fluvial nature of methods is seen in the revolutionary Audiolingual Method (ALM) of the late 1940s and 1950s. The ALM with its overemphasis on oral production drills, borrowed tenets from its predecessor by almost half a century i.e. the Direct Method, but had essentially sprung from behavioral theories of learning of the time. The field of psychology, as noted above in outlining tenets of constructivism, has witnessed a growing interest in interpersonal relationships, the value of group work, and the use of numerous cooperative strategies for attaining desired goal. The same era has seen linguists searching ever more deeply for answers to the nature of communication and communicative competence and for explanations of the interactive, socio-cultural process of language acquisition. The language teaching profession has mirrored these theoretical trends with approaches and techniques that have stressed the importance of self-esteem, intrinsic motivation, students cooperatively learning together, of developing individual strategies for constructing meaning, and above all of focusing on the communicative process in language learning. Some of these methodological innovations will be described in subsequent chapters of this book, as they pertain to issues and topics being discussed. Today, many of the pedagogical springs and rivers of the last few decades are appropriately captured in the term Communicative Language Teaching (CLT), now a catch phrase for language teachers. CLT is an eclectic blend of the contributions of previous methods into the best of what a teacher can provide in authentic uses of the second language in the classroom. Indeed, the single greatest challenge in the profession is to move significantly beyond the teaching of rules,

patterns, definitions, and other knowledge "about" language to the point that we are teaching our students to communicate genuinely, spontaneously, and meaningfully in the second language.

Lesson-37

LEARNING STYLE

Topic-217: Learning Style: Field Independence

Learning styles mediate between emotion and cognition, as you will soon discover. For example, a reflective style invariably grows out of a reflective personality or a reflective mood. An impulsive style, on the other hand, usually arises out of an impulsive emotional state. People's styles are determined by the way they internalize their total environment, and since that internalization process is not strictly cognitive, we find that physical, affective, and cognitive domains merge in learning styles. Some would claim that styles are stable traits in adults. This is a questionable view, as noted by Donvyei and Skehan (2003, p.602): "a predisposition may be deep-seated, but it does imply some capacity for flexibility, and scope for adaptation of particular styles to meet the demands of particular circumstances." It would appear that individuals show general tendencies toward one style or another, but that differing contexts will evoke differing styles in the same individual. Perhaps an "intelligent" and "successful" person is one who is "bicognitive"—one who can manipulate both ends of a style continuum.

Field independence: Do you remember, in those coloring books you pored over as a child, a picture of a forest scene with exotic trees and flowers, and a caption saying, "Find the hidden monkeys in the trees"? If you looked carefully, you soon began to spot them, some upside-down, some sideways, some high and some low. A dozen or so monkeys camouflaged by the lines of what at first sight looked like just leaves and trees. The ability to find those hidden monkeys lunged upon your field independent style: your ability to perceive a particular, relevant item or factor in a "field" of distracting items. In general psychological terms, that field may be perceptual, or it may be more abstract and refer to a set of thoughts, ideas, or feelings from which your task is to perceive specific relevant subsets. Field dependence is, conversely, the tendency to be "dependent" on the total field so that the parts embedded within the field are not easily perceived, although that total field is perceived more clearly as a unified whole. Field dependence is synonymous with field sensitivity, a term that may carry a more positive connotation. A field independent (FI) style enables you to distinguish parts from a whole, to concentrate on something (like reading a book in a noisy train station), or to analyze separate variables without the contamination of neighboring variables.

Topic-218: Learning Styles in the Classroom

1. Auditory and musical learners

Auditory learners like to hear solutions and examples explained to them and may gravitate towards music subjects and group learning as a way to understand information. Auditory learners often have a high aptitude for distinguishing notes and tones in music and speech.

Qualities often associated with auditory learners include:

- Possessing a ‘good ear’ for music and tones
- May be distractible
- Likes to talk to self /others /hum /sing

Auditory learners might say words out loud or hum tones to better learn them. This strategy is a key for keeping musical learners engaged in class lessons.

2. Visual and spatial learner

Visual learners like diagrams, drawing out concepts, charts and processes. They learn by looking at visual concepts, creating them, and watching other people create them. Visual learners might be organized or creative in their application and find things like colors and shapes useful.

Visual learners often possess the following qualities:

- Habitual doodlers / drawers
- Observant
- Not easily distracted
- Enjoys planning
- Prefers visual instructions

3. Verbal learner

Verbal learning includes both writing and speaking. Verbal learners might have a preference for reading and writing, word games, and poems. Verbal learners know the meanings of a broad category of words, can use them effectively, and actively seek out new words to add to their repertoire.

Some qualities associated with verbal learners include:

- Intellectual
- Bookworm
- Good story teller

Verbal learners often seek out careers in journalism and writing, administration, law and politics.

Physical or kinesthetic learner

Commonly called hands-on learners, kinesthetics prefer to physically engage with the materials of the subject matter. Some qualities associated with physical learners include:

- Preference to ‘get their hands dirty’
- Energetic, may drum fingers or shake legs
- Action-orientated and outgoing
- May deprioritize reading and writing

Physical learners represent about 5% of the population, and gravitate towards careers with lots of hands on work like emergency services, physical education, and sports.

Social and interpersonal learner

Social learners show preference towards groups and collaboration. Some, but not all, will gravitate towards leadership within a group. Some of the qualities often associated with this type of learner include:

- Extraverted
- Good communicator
- Sensitive and empathetic

It's important for educators to understand that not all social learners are extraverted or highly communicative, and that they can also be visual, auditory, verbal, logical, or physical learners. The interpersonal aspect perhaps better describes the settings in which they are most comfortable, rather than how they absorb information.

As such, teachers should be cognizant of the breadth of variation between different types of social learners. For example, social doesn't strictly mean verbal. Some social learners prefer to listen in a group setting, rather than on their own.

Topic-219: Ambiguity Tolerance

A third style concerns the degree to which you are cognitively willing to tolerate ideas and propositions that run counter to your own belief system or structure of knowledge. Some people are, for example, relatively open-minded in accepting ideologies and events and facts that contradict their own views; they are ambiguity tolerant, that is, more content than others to entertain and even internalize contradictory propositions. Others, more closed-minded and dogmatic, tend to reject items that are contradictory or slightly incongruent with their existing system; in their ambiguity intolerance, they wish to see every proposition fit into an acceptable place in their cognitive organization, and if it does not fit, it is rejected.

Reflectivity and impulsivity

It is common for us to show in our personalities certain tendencies toward reflectivity sometimes and impulsivity at other tunes. Psychological studies have been conducted to determine the degree to which, in the cognitive domain, a person tends to make either a quick or gambling (Impulsive) guess at an answer to a problem or a slower, more calculated (reflective) decision. David Ewlng (1977) referred to two styles that are closely related to the reflectivity/impulsivity (R/l) dimension; systematic and intuitive styles. An intuitive style implies an approach in which a person makes a number of different gambles on the basis of "hunches," with possibly several successive gambles before a solution is achieved. Systematic thinkers tend to weigh all the considerations in a problem, work out all the loopholes, and then, after extensive reflection, venture a solution. The implications for language acquisition are numerous, it has been found that children who are conceptually reflective tend to make fewer errors in reading than impulsive children (Kagan, 1965); however, impulsive persons are usually faster readers, and eventually master the "psycholinguistic guessing game" (Goodman, 1970) of reading so that their impulsive style of reading may not necessarily deter comprehension.

Topic-220: The Role of Learning Styles in the Teaching/Learning Process

Learning styles are individual differences in learning. An individual's learning style "is the way he or she concentrates on, processes, internalizes, and remembers new and difficult academic information or skills" [7, p. 1]. Individuals approach learning differently due to differences in their learning styles. A person's approach to learning is a relatively stable indicator of how they perceive, interact with, and respond to the learning environment.

Understanding learning styles and the role of learning styles in the teaching/learning process is a key component in effective teaching. According to Sarasin, "teaching cannot be successful without knowledge of learning styles and a commitment to matching them with teaching styles and strategies". Utilizing learning style theory in the classroom is extremely beneficial at all educational levels for a variety of reasons. Some research has found a relationship between occupational preferences and learning style type. In addition, student's learning styles have been shown to be affected by their educational experiences, particularly at the postsecondary level. Individuals pursuing careers in information technology (IT) typically encounter a professional work environment that exploits extensive problem solving which draws upon their abilities with a kinesthetic learning style. Therefore, knowledge of learning styles is useful in designing classroom activities that support the development of this learning style.

Topic-221: Visual, Auditory, and Kinesthetic Styles

Yet another dimension of learning style—one that is salient in a formal classroom setting—is the preference that learners show toward either visual, auditory, and/or kinesthetic input. Visual learners tend to prefer reading and studying charts, drawings, and other graphic information. Auditory learners prefer listening to lectures and audiotapes. And kinesthetic learners will show a preference to demonstrations and physical activity involving bodily movement. Of course, most successful learners utilize both visual and auditory input, but slight preferences one way or the other may distinguish one learner from another, an important factor for classroom instruction. In one study of adult learners of ESL, Joy Reid (1987) found some significant cross-cultural differences in visual and auditory styles. By means of a self-reporting questionnaire, the subjects rated their own preferences. The students rated statements like "When I read instructions, I learn them better" and I learn more when I make drawings as I study" on a five-point scale ranging from "strongly agree" to "strongly disagree." Among Reid's results: Korean students were significantly more visually oriented than native English-speaking Americans; Japanese students were the least auditory students, significantly less auditory inclined than Chinese and Arabic students. Reid also found that some of the preferences of her subjects were a factor of gender, length of time in the United States, academic field of study, and level of education. Later, Reid (1995) reported on studies that included kinesthetic styles with results that confirmed the importance of attending to such preferences among learners. Research findings on learning styles underscore the importance of recognizing learners' varying preferences. However, teachers must take a cautious approach. Measurement of style preferences (usually by means of self-check questionnaires) is problematic (Ehrman & Leaver, 2003).

Topic-222: Students' Diverse Learning Styles in Learning English as A Second Language

In the process of learning the language, there are many variables that determine the success of a language learner. Language learning success is associated with a range of factors including age, gender, motivation, intelligence, anxiety level, learning strategies and language learning styles (Sharp, 2004). In a class made up of various learning styles, it is always necessary for the teachers, particularly the language teachers to identify, respect, and work on the diversity of the learners' differences.

Students may have different levels of motivation, different attitudes about teaching and learning, and different responses to specific classroom environments and instructional practices. The more instructors understand the differences, the better chance they have of meeting the diverse learning needs of their students. This phenomenon was proven true according to the Spolsky's general model of second language learning (1989).

Perceptual learning style is an approach to learning through the five senses. It comprises of auditory learner, visual learner, tactile learner, kinesthetic learner, and haptic learner. Auditory learners learn more through hearing. Visual learners learn more through seeing. Tactile learners discover things through sense of touch. Kinesthetic learners enjoy learning through movement and body experience. Haptic learners are the combination of tactile and kinesthetic learners where they learn more through sense of touch and body involvement. Environmental learning style, on the other hand, comprises of only one dimension which is physical versus sociological. Physical learners can learn better when there are variables such as temperature, sound, light, food, time, and classroom management. These variables have to be taken into considerations during the learning process. In contrast, sociological learners are motivated to learn when there are variables such as group, individual, pair and team work, and level of teacher authority. These variables are important in encouraging the students' motivation to learn.

Lesson-38

LEARNING STRATEGIES

Topic-223: Autonomy, Awareness, and Action Strategies

Implied in any consideration of the role of styles and strategies in learning a second language are three linked concepts: autonomy, awareness, and action. These three "As" of learner development have taken on significance in recent years, especially with increasing pedagogical emphasis on learner-centered language teaching (Wenden, 2002). A review of the history of language teaching will reveal some interesting "changing winds and shifting sands." One way of looking at this history is to consider the extent to which methodological trends have emphasized the respective roles of the teacher and the learner.

Topic-224: Learning Strategies

Learning strategies refer to students' self-generated thoughts, feelings, and actions, which are systematically oriented toward attainment of their goals. Metacognitive strategies refers to methods used to help students understand the way they learn; in other words, it means processes designed for students to 'think' about their 'thinking'. Cognitive strategies are more limited to specific learning tasks and involve more direct manipulation of the learning material itself. Socioaffective strategies have to do with social-mediating activity and interacting with others. Learning strategies, as opposed to communication strategies, typically involve the receptive skills of listening and reading. Gender has been shown to be a significant variable in strategy use, both in the case of learning and in communication strategies. Hence, learning strategies help students to self-regulate their learning styles which facilitate them to achieve their goals.

Topic-225: Communication Strategies

In the course of learning a second language, learners will frequently encounter communication problems caused by a lack of linguistic resources. Communication strategies are strategies that learners use to overcome these problems in order to convey their intended meaning. Strategies used may include paraphrasing, substitution, coining new words, switching to the first language, and asking for clarification. These strategies, with the exception of switching languages, are also used by native speakers.

While learning strategies deal with the receptive domain of intake, memory, storage, and recall, communication strategies pertain to the employment of verbal or nonverbal mechanisms for the productive communication of information. In the arena of linguistic interaction, it is sometimes difficult, of course, to distinguish between the two, as Tarone (1983) aptly noted, since comprehension and production can occur almost simultaneously.

Topic-226: Avoidance Strategies

A language learner aims to convey messages to the other people he communicates while producing a foreign or second language and to reach this aim he makes use of various strategies. Corder (1978:18) points out this fact and states that in such a situation the learner has to choose one of the two principal *macro strategies* available to him. In the first case, he may attempt to use all the linguistic

sources at his disposal and pass the precise information to the party he interacts. The learner may paraphrase the message, invent new words, guess words, and borrow some items from his mother tongue.

Topic-227: Compensatory Strategies

Circumlocution: Describing or exemplifying the target object of action (e.g., the thing you open bottles with for corkscrew)

Approximation: Using an alternative term which expresses the meaning of the target lexical item as closely as possible (e.g., ship for sailboat)

Use of all-purpose words: Extending a general, empty lexical item to contexts where specific words are lacking (e.g., the overuse of thing, stuff, what-do-you-call-it, thingie)

Word coinage: Creating a non-existing L2 word based on a supposed rule (e.g., vegeta nan is vegetarian)

Prefabricated patterns: Using memorized stock phrases, usually for "survival" purposes (e.g., Where is the _____ or Comment allez -vous? where the morphological components are not known to the learner)

Nonlinguistic signals: Mime, gesture, facial expression, or sound imitation

Literal translation: Translating literally a lexical item, idiom, compound word, or structure from LI to L2

Foreignizing: Using a LI word by adjusting it to L2 phonology (i.e., with a L2 pronunciation) and/or morphology (e.g., adding to it a L2 suffix)

Code-switching: Using a LI word with LI pronunciation or a L3 word with L3 pronunciation while speaking in L2

Appeal for help: Asking for aid from the interlocutor either directly (e.g., what do you call . . .?) or indirectly (e.g., rising intonation, pause, eye contact, puzzled expression)

Topic-228: Strategy Based Instructions

Much of the work of researchers and teachers on the application of both learning and communication strategies to classroom learning has come to be known generically as **strategies-based instruction (SBI)** (McDonough, 1999; Cohen. 1998), or as learner strategy training. Cohen (1998) likes to refer to "5581"—styles and strategies-based instruction —to emphasize the productive link between styles and strategies. As we seek to make the language classroom an effective milieu for learning, it has become increasingly apparent that "teaching learners how to learn" is crucial. Wenden (1985) was among the first to assert that learner strategies are the key to learner autonomy, and that one of the most important goals of language teaching should be the facilitation of that autonomy.

Lesson-39

STRATEGIES-BASED INSTRUCTION

Topic-229: Identifying Learners' Styles and Strategies

A number of options are available for helping learners to identify their own styles, preferences, strengths, and weaknesses. The most common method is a self-check questionnaire in which the learner responds to various questions, usually along a scale of points of agreement and disagreement. Oxford's (1995) Style Analysis Survey and Wintergerst, DeCapua, and Verna's (2002) Learning Styles Indicator offer classic examples of directing learners to identify their own style preferences. A similar questionnaire can be found in Brown's (2002) Strategies for Success, a self-help guide tor English language learners. The most widely used instrument for learners to identify strategies is Oxford's (1990a) Strategy Inventory for Language Learning (SILL), a questionnaire that has now been tested in many countries and translated into several languages. The SILL's 50 items, divided into six categories, each present a possible strategy (i.e., "I use rhymes to remember new English words.") which responders must indicate on a five-point scale of "never true of me" to "always true of me." The identification of preferred strategies for learners is, in one sense, a logical follow-up to a style's inventory.

Topic-230: Students' Awareness of Learning Styles and Perceptions

Learning strategies are specific combinations or patterns of learning activities used during the learning process. The quality of learning outcomes achieved is dependent to a considerable extent on the learning activities used by learners. These learning strategies can be broadly divided into self-regulated strategy in which the students perform most regulation activities themselves, externally regulated strategy in which the students let their learning process to be regulated by teachers/books or lack of regulation when students are unable to regulate their learning process by themselves and also experience insufficient support from external regulation as provided by teachers and learning environment.

Recent research has made it fairly clear that different students have different LSs. LSPs are significantly different in males and females. Read-write and kinesthetic learners who adopt a deep approach learning strategy perform better academically than do the auditory, visual learners who employ superficial study strategies. Much work has been done on studying the individual learning preferences and how instructional methods can be tailored to cater to the different styles. However, individualization of instructional methods has not been shown to contribute significantly to learn outcomes. Studies have also shown that the most effective learners are able to adapt to the style which the learning situation requires. The teachers can help students to develop strategies for adapting to differing situations, especially when LSs do not fit to a task. Awareness of LSs can create a better learning environment by enabling students to use appropriate strategies.

Topic-231: Incorporating (SB1) into the Language Classroom

Several different manifestations of SB1 can be found in language classes around the world. Through checklists, and other methods discussed above, teachers can become aware of students' tendencies and then offer informal, unplanned advice on beneficial in-class and extra-class strategies. They can essentially be attuned to their role as facilitators of strategic action through tips and pointers and perhaps even anecdotes about "how I learned .., when I was in your shoes." Teachers can also help

students to put the results of a styles questionnaire. Once students have had a chance, with no advance "coaching" to fill out the checklist, you can engage them in any or all of the following: (1) a discussion of why they responded as they did, (2) small-group sharing of feelings underlying their responses, (3) an informal tabulation of how people responded to each item, (4) some advice, from your own experience, on why certain practices may be successful or unsuccessful, or (5) reaching the general consensus that responses in the A and B categories are usually indicative of successful approaches to language learning.

Topic-232: Reconsidering a Strategy-Based Instruction (SB1) to Teaching and Learning Another Language

In the context of second-language acquisition (SLA) theory, there are two different types of learning and communication strategy which can be taught explicitly or implicitly. Explicit learning strategy-instruction, as argued by Chamot (2004), primarily is concerned with development of 'students' awareness of the strategy utilized, teachers' modeling of strategic thinking, students' practice with new strategies, students' self-evaluation of the strategies used, and students 'practice in transferring strategies to new tasks.' Oxford's model (1983), on the other hand, focuses on four areas, namely the use of checklists and/or interviews; the embedding of strategies within L2 learners pedagogy and subsequent implicit practice; the utilization of various compensatory techniques to help students overcome their weaknesses instantly; and the introduction of various strategy textbooks as part of content-centered approach (Brown,
2007).

Topic-233: Stimulating Strategic Action Beyond the Classroom

Finally, it is important to note that style awareness and strategic action are not limited to the classroom. Many so-called successful learners have reached their goals of mastery through their own self-motivated efforts to extend learning well beyond the confines of a classroom. Teachers can help learners to achieve this further step toward autonomy by helping learners to look beyond the classroom and the language course they are in. The ultimate purpose in engaging students in SBI is not simply to complete one language course. Teachers can help learners to see that raising their conscious awareness of styles and strategies aids them in the authentic use of language "out diere."

Topic-234: Language Learning Strategies and its Implications for Second Language Teaching

Research has proved that language learners need instruction in 'how' to use strategies efficiently as a way to improve language learning and performance. There are two common ways to approach language learning strategy instruction: uninformed strategy instruction or direct and integrated instruction. In uninformed strategy instruction, students work through materials and activities designed to elicit the use of specific strategies, but students are not informed of the name, purpose, or value of the specific learning strategy. Direct and integrated instruction (O'Malley & Chamot, 1995, p.153) informs learners of the value and purpose of learning strategies and helps learners to use, identify, and develop learning strategies in a systematic way as they learn the target language.

Lesson-40

AFFECTIVE FACTORS IN SECOND LANGUAGE ACQUISITION

Topic-235: Affective Factors in Second Language Acquisition: The Affective Domain

The affective domain: Affect refers to emotion or feeling. The affective domain is the emotional side of human behavior, and it may be juxtaposed to the cognitive side. The development of affective states or feelings involves a variety of personality factors, feelings both about ourselves and about others with whom we come into contact. Benjamin Bloom and Iris colleagues (Krathwohl, Bloom, & Masia, 1964) provided a useful extended definition of the affective domain that is still widely used today. 1. At the first and fundamental level, the development of affectivity begins with receiving. Persons must be aware of the environment surrounding them and be conscious of situations, phenomena, people, objects; be willing to receive—to tolerate a stimulus, not avoid it—and give a stimulus their controlled or selected attention. 2. Next, persons must go beyond receiving to responding, committing themselves in at least some small measure to a phenomenon or a person. Such responding in one dimension may be in acquiescence, but in another higher dimension, the person is willing to respond voluntarily without coercion, and then receives satisfaction from that response. 3. The third level of affectivity involves valuing: placing worth on a thing, a behavior, or a person.

Self-esteem

Self-esteem is probably the most pervasive aspect of any human behavior. It could easily be claimed that no successful cognitive or affective activity can be carried out without some degree of self-esteem, self-confidence, knowledge of yourself, and self-efficacy—belief in your own capabilities to successfully perform that activity. Malinowski (1923) noted that all human beings have a need for phatic communion—defining one self and finding acceptance in expressing that self in relation to valued others. Personality development universally involves the growth of a person's concept of self, acceptance of self, and reflection of self as seen in the interaction between self and others. The following is a well-accepted definition of self-esteem (Coopersmith, 1967, pp. 4-5): by self-esteem, we refer to the evaluation which individuals make and customarily maintain with regard to themselves; it expresses an attitude of approval or disapproval, and indicates the extent to which individuals believe themselves to be capable, significant, successful, and worthy. In short, self-esteem is a personal judgment of worthiness that is expressed in the attitudes that individuals hold toward themselves. It is a subjective experience which the individual conveys to others by verbal reports and other overt expressive behavior.

Topic-236: Attribution Theory and Self-Efficacy

Underlying the issues and questions about the role of self-esteem in language learning are the foundational concepts of attribution and self-efficacy. Based on the seminal work of psychologist Bernard Weiner (1986. 1992, 2000), attribution theory focuses on how people explain the causes of their own successes and failures. Weiner and others (Slavin, 2003; Dornyei, 2001b; Williams & Burden, 1997) describe attribution theory in terms of four explanations for success and/or failure in achieving a personal objective: ability, effort, perceived difficulty of a task, and luck. Two of those four factors are internal to the learner: ability and effort; and two are attributable to external circumstances outside of the learner:

task difficulty and luck. According to Weiner, learners tend to explain, that is, to attribute, their success on a task on these four dimensions. Depending on the individual, a number of causal determinants might be cited.

Topic-237: Willingness to Communicate

A factor related to attribution and self-efficacy, one that has seen a surge of recent interest in the research literature is the extent to which learners display a willingness to communicate as they tackle a second language. Willingness to communicate (WTC) may be defined as "an underlying continuum representing the predisposition toward or away from communicating, given the choice". Or, more simply put, "the intention to initiate communication, given a choice". Emerging from studies and assertions about language learners 'willingness to communicate and what we in common lay terms sometimes label as "shyness," researchers have now been examining the extent to which WTC is a factor not just in second language acquisition, but one that may have its roots in a learner's first language communication patterns (Maclnryre et al., 2002). In an earlier study on WTC, Maclnryre et al. (1998) found that a number of factors appear to contribute to predisposing one learner to seek, and another learner to avoid, second language communication. Noting that a high level of communicative ability does not necessarily correspond with a high WTC, Maclnryre et al. proposed a number of cognitive and affective factors that underlie the latter: motivation, personality, intergroup climate, and two levels of self-confidence. The first level resembles what has already been described as situational self-esteem, or "state communicative self-confidence" (Maclnryre et al,, 1998. p. 547), and the second, an overall global level simply labeled "L2 self-confidence. Both self-confidence factors assume important roles in determining one's willingness to communicate. Other studies of WTC generally confirm its relationship to self-efficacy and self-confidence.

Topic-238: Inhibition Risk Taking

The prominent characteristics of good language learners, according to Rubin and Thompson (1982) were the ability to make intelligent guesses. Impulsivity was also described as a style that could have positive effects on language success. And we have just seen that inhibitions, or building defenses around our egos, can be a detriment. These factors suggest that risk taking is an important characteristic of successful learning of a second language. Learners have to be able to gamble a bit, to be willing to try out hunches about the language and take the risk of being wrong. Beebe described some of the negative ramifications that foster fear of risk taking both in the classroom and in natural settings. In the classroom, these ramifications might include a bad grade in the course, a fail on the exam, a reproach from the teacher, a smirk from a classmate, punishment or embarrassment imposed by oneself.

Topic-239: Anxiety

Intricately intertwined with self-esteem, self-efficacy, inhibition, and risk taking, the construct of anxiety plays a major affective role in second language acquisition. Even though we all know what anxiety is and we all have experienced feelings of anxiousness, anxiety is still not easy to define in a simple sentence. Spielberger defined anxiety as "the subjective feeling of tension, apprehension, nervousness, and worry associated with an arousal of the autonomic nervous system." More simply put, anxiety is associated with feelings of uneasiness, frustration, self-doubt, apprehension, or worry. The research on anxiety suggests that anxiety, like self-esteem, can be experienced at various levels (Horwitz,

2001; Oxford. 1999). At the deepest, or global, level, trait anxiety is a more permanent predisposition to be anxious. Some people are predictably and generally anxious about many things. At a more momentary, or situational level, state anxiety is experienced in relation to some particular event or act. As we learned in the case of self-esteem, then, it is important in a classroom for a teacher to try to determine whether a student's anxiety stems from a more global trait or whether it comes from a particular situation at the moment. Personal factors like trait anxiety, because of its global and somewhat ambiguously denned nature, has not proved to be useful in predicting second language achievement (Maclnryre Sc. Gardner, 1991c), However, recent research on language anxiety, as it has come to be known, focuses more specifically on the situational nature of state anxiety.

Empathy

The human being is a social animal, and the chief mechanism for maintaining the bonds of society is language. Some approaches to language teaching fail to accomplish the goal of communicativity in the learner by overlooking the social nature of language. While we tend to recognize the importance of the social aspect of language, we also tend to oversimplify that aspect by not recognizing the complexity of the relation between language and society, or by considering socially oriented problems in language learning as a simple matter of "acculturation." Acculturation is no simple process, and it will become clear in this chapter that the social transactions that the second language learner is called upon to make constitute complex endeavors. Transaction is the process of reaching out beyond the self to others, and language is a major tool used to accomplish that process. A variety of transactional variables may apply to second language learning: imitation, modeling, identification, empathy, extroversion, aggression, styles of communication, and others. Two of these variables, chosen for their relevance to a global understanding of second language acquisition, will be treated here: empathy and extroversion. In common terminology, empathy is the process of "putting yourself into someone else's shoes," of reaching beyond the self to understand what another person is feeling. It is probably the major factor in the harmonious coexistence of individuals in society. Language is one of the primary means of empathizing, but nonverbal communication facilitates the process of empathizing and must not be overlooked. In more sophisticated terms, empathy is usually described as the projection of one's own personality into the personality of others in order to understand them better. Empathy is not synonymous with sympathy. Empathy implies more possibility of detachment; sympathy connotes an agreement or harmony between individuals. Guiora et al. defined empathy as "a process of comprehending in which a temporary fusion of self-object boundaries permits an immediate emotional apprehension of the affective experience of another."

Topic-240: Extroversion

Extroversion and its counterpart, introversion, are also potentially important factors in the acquisition of a second language. The terms are often misunderstood because of a tendency to stereotype extroversion. We are prone to think of an extroverted person as a gregarious, "life of the party" person. Introverts, conversely, are thought of as quiet and reserved, with tendencies toward reclusiveness. Western society values the stereotypical extrovert. Nowhere is this more evident than in the classroom where teachers admire the talkative, outgoing student who participates freely in class discussions. On the other hand, introverts are sometimes thought of as not being as bright as extroverts. Such a view of extroversion is misleading. Extroversion is the extent to which a person has a deep-seated need to receive

ego enhancement, self-esteem, and a sense of wholeness from other people as opposed to receiving that affirmation within oneself. Extroverts actually need other people in order to feel "good." But extroverts are not necessarily loudmouthed and talkative. They may be relatively shy but still need the affirmation of others. Introversion, on the other hand, is the extent to which a person derives a sense of wholeness and fulfillment apart from a reflection of this self from other people. Contrary to our stereotypes, introverts can have an inner strength of character that extroverts do not have. It is unfortunate that these stereotypes have influenced teachers' perceptions of students. Ausubel (1968, p. 413) noted that introversion and extroversion are a "grossly misleading index of social adjustment," and other educators have warned against prejudging students on the basis of perceived extroversion. In language classes, where oral participation is highly valued, it is easy to view active participants with favor and to assume that their visibility in the classroom is due to an extroversion factor (which may not be so). Culturally, American society differs considerably from a number of other societies where it is improper to speak out in the classroom.

Lesson-41

MOTIVATION

Topic-241: Theories of Motivation

Various theories of motivation have been proposed over the course of decades of research. Following the historical schools of thought, three different perspectives emerge: 1. from a behavioral perspective, motivation is seen in very matter of fact terms. It is quite simply the anticipation of reward. Driven to acquire positive reinforcement, and driven by previous experiences of reward for behavior, we act accordingly to achieve further reinforcement. Skinner, Pavlov, and Thorndike put motivation at the center of their theories of human behavior. In a behavioral view, performance in tasks—and motivation to do so—is likely to be at the mercy of external forces; parents, teachers, peers, educational requirements, job specifications, and so forth. 2. In cognitive terms, motivation places much more emphasis on the individual's decisions, "the choices people make as to what experiences or goals they will approach or avoid, and the degree of effort they will exert in this respect". Some cognitive psychologists see underlying needs or drives as the compelling force behind our decisions.

Topic-242: Instrumental and Integrative Orientations

Motivation was examined as a factor for a number of different kinds of attitudes. Two different clusters of attitudes divided two basic types of what Gardner and Lambert identified as instrumental and integrative orientations to motivation. The instrumental side of the dichotomy referred to acquiring a language as a means for attaining instrumental goals: furthering a career, reading technical material, translation, and so forth. The integrative side described learners who wished to integrate themselves into the culture of the second language group and become involved in social interchange in that group.

Topic-243: Intrinsic and Extrinsic Motivation

Intrinsically motivated activities are ones for which there is no apparent reward except the activity itself. People seem to engage in the activities for their own sake and not because they lead to an extrinsic reward. Intrinsically motivated behaviors are aimed at bringing about certain internally rewarding consequences, namely, feelings of competence and self-determination. On the other hand, extrinsic motivation is fueled by the anticipation of a reward from outside and beyond the self. 'Typical extrinsic rewards are money, prizes, grades, and even certain types of positive feedback. Behaviors initiated solely to avoid punishment are also extrinsically motivated. Even though numerous intrinsic benefits can ultimately accrue to those who, instead, view punishment avoidance as a challenge that can build their sense of competence and self-determination.

Topic-244: The Neurobiology of Affect

Using Positron Emission Tomography (PET) and Magnetic Resonance Imaging (MRI) in the empirical study of the brain, some connections have been made between affectivity and mental processing as well as second language acquisition. Research on the neurobiology of affect highlights the roles of the function of Amygdala in language learning and Sustained Deep learning as the key determinants.

Topic-245: Personality Types and Language Acquisition

Within the affective domain, another subarea of interest over the past half century ago has been the measurement of personality characteristics and the hypothesized relationship of such traits to success in various kinds of endeavors. Among dozens of tests and questionnaires designed to tell you more about yourself is the widely-popular Myers-Briggs Type Indicator (Myers, 1962), commonly referred to as the "Myers-Briggs test," borrowing from some of Cart Jung's (1923) "types," the Myers-Briggs team tested tour dichotomous styles of functioning in the Myers-Briggs test: (1) introversion vs. extroversion, (2) sensing vs. intuition, (3) thinking vs. feeling, and (4) judging vs. perceiving. There are four categories (Keirsey & Bates, 1984, pp. 25-26) in simple words and self-explanatory phrases. With four two-dimensional categories, 16 personality profiles, or combinations, are possible. Disciples of the Myers-Briggs research (Keirsey & Bates, 1984, for example) described the implications of being an "ENEJ" or an "ISTP," for example, managers may be aided in their understanding of employees by understanding their character type. ISTJs, for example, make better behind-the-scenes workers, while ENFPs might be better at dealing with the public. Lawrence (1984) stressed the importance of a teacher's understanding the individual differences of learners in a classroom: Es will excel in group work; Is will prefer individual work; SJs are "linear learners with a strong need for structure" (p. 52); NTs are good at paper-and-pencil tests.

Topic-246: Measuring Affective Factors

The above discussion of the Myers-Briggs test leads us to probe issues surrounding the measurement of affective factors, which has for many decades posed a perplexing problem. Some affective factors can be reliably measured by means of indirect measures or by formal interviews. But these methods are expensive and require a highly trained expert to administer them. And so, in a spirit of practicality, the language teaching profession has quite consistently relied on "paper-and-pencil" tests, such as the Myers-Briggs, that ask for self-ratings by the learner.

Lesson-42

SOCIOCULTURAL FACTORS

Topic-247: Culture: Definitions and Theories

The fact that no society exists without a culture reflects the need for culture to fulfill certain biological and psychological needs in people. Consider the bewildering host of confusing and contradictory facts and propositions and ideas that present themselves every day to anyone; some organization of these facts is necessary to provide some order to potential chaos, and therefore conceptual networks of reality evolve within a group of people for such organization. The mental constructs that enable us thus to survive are a way of life that we call "culture."

Culture establishes for each person a context of cognitive and affective behavior, a template for personal and social existence. But we tend to perceive reality within the context of our own culture, a reality that we have "created," and therefore not necessarily a reality that is empirically defined. "The meaningful universe in which each human being exists is not a universal reality, but 'a category of reality' consisting of selectively organized features considered significant by the society in which he lives" (Condon, 1973, p. 17). Although the opportunities for world travel in the last several decades have increased markedly, there is still a tendency for us to believe that our own reality is the "correct" perception.

Topic-248: Stereotypes or Generalizations

Generalizations become **stereotypes** when all members of a group are categorized as having the same characteristics. **Stereotypes** can be linked to any type of cultural membership, such as nationality, religion, gender, race, or age.

Twain, like all of us at times, expressed caricatures of linguistic and cultural stereotypes. In the bias of our own culture-bound worldview, we too often picture other cultures in an oversimplified manner, lumping cultural differences into exaggerated categories, and then view every person in a culture as possessing stereotypical traits. Here are a few examples: Americans are all rich, informal, materialistic, overly friendly, and drink coffee. Italians are passionate, demonstrative, great lovers, and drink red wine. Germans are stubborn, industrious, methodical, and drink beer. The British are stuffy, polite, thrifty, and drink tea. And Japanese are reserved, unemotional, take a lot of pictures, and also drink tea.

Topic-249: Second Culture Acquisition & Social Distance

Robinson Stuart and Nocon suggested that language learners undergo culture learning as a "process, that is, as a way of perceiving, interpreting, feeling, being in the world, ... and relating to where one is and who one meets" (p. 432). Culture learning is a process of creating shared meaning between cultural representatives. It is experiential, a process that continues over years of language learning, and penetrates deeply into one's patterns of thinking, feeling, and acting.

It is common to describe culture shock as the second of four successive stages of culture acquisition: 1. Stage 1 is a period of excitement and euphoria over the newness of the surroundings. 2.

Stage 2—culture shock—emerges as individuals feel the intrusion of more and more cultural differences into their own images of self and security. In this stage, individuals rely on and seek out the support of their fellow countrymen in the second culture, taking solace in complaining about local customs and conditions, and seeking escape from their predicament. 3. Stage 3 is one of gradual, and at first tentative and vacillating, recovery. This stage is typified by what Larson and Smalley (1972) called "culture stress": some problems of acculturation are solved while other problems continue for some time. But general progress is made, slowly but surely, as individuals begin to accept the differences in thinking and feeling that surround them, slowly becoming more empathic with other persons in the second culture. 4. Stage 4 represents near or full recovery, either assimilation or adaptation, acceptance of the new culture and self-confidence in the "new" person that has developed in this culture.

Topic-250: Teaching Intercultural Competence

While most learners can indeed find positive benefits in cross-cultural living or learning experiences, a number of people experience psychological blocks and other inhibiting effects of the second culture. Stevick (1976b) cautioned that learners can feel alienation in the process of learning a second language, alienation from people in their home culture, the target culture, and from themselves. In teaching an "alien" language, we need to be sensitive to the fragility of students by using techniques that promote cultural understanding. A number of recent research studies have shown the positive effects of incorporating cultural awareness in language classrooms (Byram & Feng, 2005). An excellent set of practical activities, all grounded in research on cultural awareness, is provided in DeCapua and Wintergersts (2004) reference book for teachers. Savignon and Sysoyev (2002) promoted sociocultural competence in their learners of English in Russia by introducing sociocultural strategies such as initiating contact, anticipating cultural misunderstandings, and using diplomacy in discussions. Wright (2000) found that teaching learners of German as a foreign language, using process-oriented tasks promoted cross-cultural adaptability. Abrams (2002) successfully used Internet-based culture portfolios to promote cultural awareness and to defuse cultural stereotypes. Interviews of native speakers of the target language helped learners in Bateman's study (2002) to develop more positive attitudes toward the target culture.

Topic-251: Language Policy, Language Politics, and Word Englishes

Language politics is the way language and linguistic differences between peoples are dealt with in the political arena. This could be manifested as government recognition, as well as how language is treated in official capacities. Some examples: legal status of a language as an official language in a country, state, or other jurisdiction. This generally means that all official documents affecting a country or region are published in the official language(s), but not in those that are not. Evidence in a court of law may also be expected to be presented in an official language. In countries where there is one main language, immigrants seeking full citizenship may be expected to have a degree of fluency in that language ('language politics' then being a reference to the debate over the appropriateness of this). This has been a feature of Australian politics. At various times, minority languages have either been promoted or banned in schools, as politicians have either sought to promote a minority language with a view to strengthening the cultural identity of its speakers, or banning its use (either for teaching, or on occasion an entire ban on its use), with a view to promoting a national identity based on the majority language. An

example of recent promotion of a minority language is Welsh or Leonese by the Leonese City Council; an example of official discouragement of a minority language is Breton.

Language Policy: Many countries have a **language policy** designed to favor or discourage the use of a particular language or set of languages. Although nations historically have used language policies most often to promote one official language at the expense of others, many countries now have policies designed to protect and promote regional and ethnic languages whose viability is threatened. Indeed, whilst the existence of linguistic minorities within their jurisdiction has often been considered to be a potential threat to internal cohesion, states also understand that providing language rights to minorities may be more in their long term interest, as a means of gaining citizens' trust in the central government. Language policy is what a government does either officially through legislation, court decisions, or policy to determine how languages are used, cultivate language skills needed to meet national priorities, or to establish the rights of individuals or groups to use and maintain languages. The scope of language policy varies in practice from state to state. This may be explained by the fact that language policy is often based on contingent historical reasons. Likewise, states also differ as to the degree of explicitness with which they implement a given language policy. The French Toubon law is a good example of explicit language policy. The same may be said for the Charter of the French Language in Quebec.

World Englishes: The rapid growth of English as an international language (EIL) has stimulated interesting but often controversial discussion about the status of English in its varieties of what is now commonly called world Englishes (Kachru, 2005; McKay, 2002; McArthur, 2001; Kachru & Nelson, 1996; Kachru, 1992, 1985). Learning English in India, for example, really does not involve taking on a new culture since one is acquiring Indian English in India. According to Kachru, the "Indianization" of English in India has led to a situation in which English has few if any British cultural attributes. This process of nativization or "indigenization" (Richards, 1979) of English has spread from the inner circle of countries (such as the United States, United Kingdom, Australia, & New Zealand) to an outer circle (Kachru, 1985) of countries that includes India, Singapore, the Philippines, Nigeria, Ghana, and others. In such contexts, English is commonly learned by children at school age and is the medium for most of their primary, secondary, and tertiary education.

Topic-252: ESL and EFL

As the above discussion shows, the spread of EIL has indeed muddied the formerly clear waters that separated what we still refer to as English as a second language (ESL) and English as a foreign language (EEL). Learning ESL—English within a culture where English is spoken natively—may be clearly defined in the case of, say, an Arabic speaker learning English in the United States or the United Kingdom, but not as easily identified where English is already an accepted and widely used language for education, government, or business within the country (for example, learning English in the Philippines or India). According to Nayar (1997), we need to add yet another ESL context; English in Scandinavia, where English has no official status but occupies such a high profile that virtually every educated person can communicate competently with native speakers of English. Learning EEL, that is, English in one's

native culture with few immediate opportunities to use the language within the environment of that culture (for example, a Japanese learning English in Japan), may at first also appear to be easy to define.

Lesson-43

NEW DIRECTIONS

Topic-253: New Directions in Language Learning Psychology

Some of the developments that have marked the field in recent years include: broadening the range of constructs investigated, increased recognition of complexity and dynamism, widespread acknowledgement of the situated and social nature of language learner and teacher psychology, and the need for and acceptance of methodological plurality. To meet these new developments, research approaches have shifted from an overwhelming dependence on quantitative designs to the inclusion of more qualitative approaches. Rather than solely testing group averages and correlations, it is now acknowledged as being equally important to qualitatively interpret individual learners' psychology and the contextual factors that interact with this. Achilleas Kostoulas and Juup Stelma who explore the potential of intentionality and Complex Systems Theory (CST) as a basis for a new theoretical direction in language learning psychology, compare two different types of intentionality—a shared 'performance intentionality' in a Norwegian primary English language classroom and a 'competition intentionality' in the context of a private language school in Greece. They demonstrate how intentionalities can orient language learning activity towards particular attractors or preferred states and further argue that intentionalities are linked to differing timescales. Based on these findings, the authors discuss complexity-informed implications for empirical research in language learning psychology.

Topic-254: Mirror Neurons and Language: Challenges and Future Directions

Failure of the mirror neuron system is also now widely accepted as an explanation for congenital neuropsychological deficits, such as autism. Ironically, though, mirror neurons were first discovered in the monkey brain, and monkeys are generally not credited with theory of mind, metaphor, or language—or autism.

The role of mirror neurons in imitation is more contentious. Although mirror neurons have not been recorded directly in humans, brain-imaging studies point to an equivalent system in the human brain, and this system is activated when people imitate action (Nishitani and Hari, 2000, Nishitani and Hari, 2002, Rizzolatti and Craighero, 2004). Yet monkeys appear to be incapable of imitation (Visalberghi and Fragaszy, 1990, Visalberghi and Fragaszy, 2002), suggesting that the mirror system did not evolve to mediate imitation. Rizzolatti and colleagues have suggested instead that the primary role of mirror neurons is in action understanding (Rizzolatti et al., 2001, Rizzolatti and Sinigaglia, 2008); that is, mirror neurons allow the monkey—or human—to understand actions performed by others by mapping those actions onto actions that it can itself perform, but they do not mediate the actual imitation of those actions.

Topic-255: Intentionality and Complex Systems Theory: A New Direction for Language Learning Psychology

Complexity and Complex Systems: Despite increasing interest in CST, there is at present no single authoritative definition of what the theory encompasses. That said, CST, or complexity, can be broadly defined as an ontological and epistemological outlook that is sensitive to the ways in which non-linear, emergent, and holistic phenomena come into existence, without any form of central control, from the interactions of large numbers of entities, or system constituents. A system, in a general sense, is a

collection of entities that exhibit certain behaviors on account of their system membership. For example, students and teachers behave in certain ways because they are part of the school system; celestial bodies in the solar system have certain trajectories because they exert gravitational pull on each other. Complex systems, on the other hand, are more difficult to define, because they are organizationally open. This means that their components interact with, and are influenced by, agents that operate outside the systems' 'boundaries.' Because of the difficulty in separating a system from its surroundings using logical or topographical criteria, it seems preferable to 'frame' systems functionally (i.e., in terms of what the system 'does', or 'what it is for'), while bearing in mind that "the boundary of the system is neither purely a function of our description, nor is it purely a natural thing."

Topic-256: Neuolinguistics Computational Models: Challenges and Future Directions

Module-level structured models: In this section, we will examine work on module-level models. These models attempt to localize processing in particular neural modules. On an anatomical level, it is clear that the brain is rich in structure. For example, there are at least 54 separate processing areas in visual cortex (Van Essen et al. , 1990). But it is not clear whether these areas function as encapsulated modules or rather as interactive pieces of functional networks. Evidence for Neurolinguistics modules has come from three sources: aphasiology, brain imaging, and developmental disorders. The oldest of these sources is the evidence from differing patterns of language deficit in aphasia. One can study patients with lesions of different types in the hope of identifying double disassociations between information-processing skills and lesion types. For example, some patients will have damaged prosodic structure, but normal segmental phonology. Other patients will have damaged segmental structure, but normal prosody. This pattern of results would provide strong support for the notion that there is a localized cognitive module for the processing of prosody. In practice, however, evidence for such double dissociations is difficult to obtain without post hoc partitioning of subject groups. But this partitioning itself casts doubt on the underlying assumptions regarding modularity and dissociability.

Topic-257: New Directions in Language Learning Strategy Research: Engaging with The Complexity of Strategy Use

Definition: Rubin (1975, p. 43) defined learning strategies as, "the techniques or devices which a learner may use to acquire knowledge." Ten years later, although a number of other researchers had contributed to the field (e.g., Stern, 1975; Naiman, Frohlich, Stern, & Todesco, 1978), O'Malley, Chamot, Stewner-Manzanares, Kupper, and Russo (1985) were lamenting the lack of consensus regarding a definition which, they felt, was impeding progress with research. Over the next two decades, however, the controversy continued to rage, until by 2006, Macaro abandoned the attempt to achieve a decisive definition and opted for listing defining characteristics instead. Meanwhile, Dörnyei and Skehan (2003, p. 170) had gone even further and recommended abandoning the term "strategy" in favor of the "more versatile" term "self-regulation." Yet, according to writers such as O'Malley et al. (1985), a definition is necessary for meaningful research. Therefore, following an extensive review of the literature, Griffiths (2008, 2013) distilled a concise definition of language learning strategies, which might be summed up as actions chosen by learners (either deliberately or automatically) for the purpose of learning or regulating the learning of language. This definition depends on the essential features: activity, choice, goal/purpose, and learning.

Topic-258: New Challenges in Psycholinguistics: Interactivity and Alignment in Interpersonal Communication

In recent years, the attention of many psycholinguists has gradually shifted from the individual minds of language users and strictly intra-personal aspects of language processing, towards a different but not necessarily contradictory perspective. Interactivity has come into play as an important factor that can hardly be ignored in the analysis of the mental mechanisms underlying language use. Language emerged from interaction and it has been bound to it during its evolution. Accordingly, to fully capture and understand communicative interactivity, one should take into account that some of its aspects are "embrained" – the neural structures responsible for communication are also interaction-oriented. Moreover, interactivity must also be somehow encoded in the language system itself. In his seminal book, Clark (1996) explicitly states that language should be investigated as a collaborative, joint activity, but even much earlier studies (e.g., Schegloff 1982) refer to discourse as a "an interactional achievement." A straightforward view of interactivity is that certain actions of one party result in certain actions of the other, which in turn may be noticed by the former and answered with another sequence of actions. Accordingly, one may be able to find some corresponding patterns of modeling in the conversational partners, even though the notion of "correspondence" remains rather intuitive at this stage. The assumed correspondence may be based on synchrony (co-occurrence) or on any kind of similarity relationship between units of communicative modeling. As a result, the activities of conversational parties can be viewed as co-ordinated (Garrod & Anderson 1987). Communicative interactivity is strictly bound to the co-ordination of communicative modeling which can be observed on many levels, from simple physical activities to the dynamics of mental representations, as well as in many domains and modalities. One may assume that there is an inborn tendency to align which may direct humans towards increased interactivity. This tendency may be developed and strengthened due to immersion in society and culture. There are also some external factors, like music, that influence conversational partners and may result in some kind of alignment of their modeling. The present text is intended as a very compact review of various understandings and aspects of interactive alignment. Some issues related to its measurement and modeling are touched upon. Finally, an attempt is made to predict the directions of alignment research and its potential impact on psycholinguistics.

Lesson-44

PSYCHOLINGUISTICS IN APPLIED LINGUISTICS: TRENDS AND PERSPECTIVES

Topic-259: Relating Psycholinguistics and Applied Linguistics

If we want to clarify the role psycholinguistics can or should play in AL, we need to narrow down the definition of the latter, or rather look at only a part of that vast field. The acquisition and use of a second language seem to be the appropriate chunk of AL in this context. This sub-area relates to many other parts of our field, but its core is, in my view at any rate, essentially psycholinguistic in nature. The psycholinguistic interest would be in the processing mechanisms involved in using more than one language and the acquisition of additional languages. The AL interest would be in understanding why language learners behave the way they do, or in other words, what the mechanisms are for L2 use and acquisition. Ultimately, interest also lies in interventions that change and improve those mechanisms. This interpretation means that multilingual processing can be defined as the intersection or shared interest across psycholinguistics and AL. In this intersection, there are many questions to be answered: How are different languages processed? What are the processing mechanisms of cross-linguistic influence? What is the impact of level of proficiency? Is there a limit to the number of languages the system can deal with before breaking down? Are there processing differences between different types of languages? To what extent do socio-psychological factors influence processing mechanisms?

Topic-260: Key Issues in The Multilingual Processing: The Structure of The Bilingual Lexicon

For bilingual children who grow up in a bilingual environment, how their language developed through childhood influences the lexical size of both languages. Researchers showed that the basic process is same as with monolinguals, and bilingual children tend to learn the languages as two monolinguals. The growth of both languages' lexicon is the same with the growth of the lexicon for monolinguals. Older children do transfer more than younger children. Also in this step of learning words, the vocabulary size positively related to the exposure time in that language. This will stop until a certain amount of vocabulary of the language is reached. Semantic tasks for preschool children with predominantly Spanish-speaking, predominantly English-speaking, and bilingual showed that these three groups are different from each other. Bilinguals perform best on expressive function for both Spanish and English as predominantly-speaking children but performed differently in each language, which means they do not mirror performance in Spanish and English. They are better on some in English, better on others in Spanish. The ability of learning one language does not influence the ability of learning the other one for bilinguals.

Lexical development in children who learn their second language when their first language is already developed is different from that of children who grow up in a bilingual environment (i.e. simultaneous bilingualism). The beginning step of learning words in the second language is translation, or learning the definitions. This is different from how they learned their first language which involves inputting the information of semantic and formal entities together. When accessing these newly learned words, the basic language semantic system will be activated, which means when a second language word is activated, the basic language word with the same meaning is also activated. It can be

said that learners are still thinking in basic language but try to represent in second language by translation as more semantic and syntax knowledge is learned for the second language. This new language is gradually independent from the basic language. Learners began to access the language without translation with semantic knowledge for that language. As learns gain more and more exposure to the new language, they will complete the development of second language when they can access and use the language from the concept, which can be said to be thinking in that language directly.

Topic-261: Language Choice in Production and Perception

Language choice in production and perception: In both production and perception, there must be language specific processing, though the two processes will differ. In perception, characteristics of the input (e.g., sounds that are language specific) will trigger the system to 'expect' input in a given language. Of course, there will also be information in the communicative setting that suggests the use of a particular language. So in perception, language choice is typically both a top-down (setting) and a bottom-up (language characteristics) process. In language production, language choice is essentially a top-down process: the speaker has to include in his/her communicative intention the language in which an utterance has to be encoded. In many situations, it is clear that one specific language has to be selected exclusively for production. In situations in which multilingual speakers are interacting, the use of more than one language is possible and may even be the preferred choice. Language switching can be a communicative tool to highlight specific information or express an attitude towards a topic of conversation. De Bot and Schreuder (1993) propose a 'language cue' to explain the wide variation in code switching that has been reported in the literature. They argue that for many individual switches, no linguistic or socio-psychological explanation can be given and indeed is needed because speakers set the cues for the languages to be used to a certain value, leading to the right mix of language in a given situation. The exact locus of the language cue is still a matter of debate.

Topic-262: The Language Mode

In several publications, Grosjean has developed the idea of a language mode to explain the various ways multilingual use their languages. The language mode is defined as follows: "The state of activation of the bilingual's languages and language processing mechanisms, at a given point in time." The language mode is a continuum, ranging from a monolingual mode to a bilingual speech mode (Grosjean to appear). In the monolingual mode only one language is activated and the other languages in a multilingual are deactivated. The notion of a language mode is related to the issues of the language cue discussed above: the language mode is defined by the setting and the communicative intentions of a speaker. This is not to say that there is fully conscious control of the position on the mode. Several experimental studies have shown that even in a supposedly monolingual setting, the other language continues to play a role (e.g., in experiments with monolingual and bilingual presentation of stimuli).

Cognitive Processes and SLA

Human cognition is conscious and unconscious, concrete or abstract, as well as intuitive (like knowledge of a language) and conceptual (like a model of a language). It encompasses processes such as memory, association, concept formation, pattern recognition, language, attention, perception, action, problem solving and mental imagery. Traditionally, emotion was not thought of as a cognitive process, but now much research is being undertaken to examine the cognitive psychology of emotion; research is

also focused on one's awareness of one's own strategies and methods of cognition, which is called metacognition.

At one end, the term excludes those children we have just considered who are acquiring two or more languages simultaneously. At the other end, child second-language acquisition generally excludes individuals who are acquiring L2 beyond about 12 years. The reason for this exclusion is that it is commonly thought that there is a critical period for L2 acquisition and that acquiring a second language (or, for that matter, a first one) after puberty is much more difficult. For our purposes, it is generally agreed that child second-language acquisition extends from about 5 to 9 years, or after the primary language is essentially acquired but before any possible effects related to a critical period.

Topic-263: Future Developments and Needs: Language Processing and Language Testing

While language testers are generally never slow or reticent to tell the applied linguistic community what their moral standards and research methods should be, the major part of their work on testing language proficiency is basically built on the black box approach prevalent in the behaviorist era. While there now is quite some information on the various sub processes of language production and language perception, most language testing is still geared toward the outcomes of the whole process. For real diagnostic testing, instruments have to be developed that are specifically aimed at assessing the workings of various sub processes. In production, things can go wrong in many stages of the process. For example, in phonological encoding, segmental and supra-segmental information have to be combined to develop the phonetic plan. It is more or less known how this takes place, and accordingly, what can go wrong. Testing procedures are needed that will allow us to get specific information about problems in these sub stages of language production.

Topic-264: Socio-Psychological Factors in Language Processing

One of the big issues for future research is to determine the extent and the manner in which socio-psychological factors related to the minority status of a language may have an impact on language processing. It is in a way attractive to view our language production system purely as a language producing machine, but this is evidently too simple a picture: lexical access, grammatical complexity, and phonological encoding do not take place in a socio-psychological vacuum. Factors like status, self-esteem, and self-consciousness are critical factors in all stages of the production and perception process. To give an example, when, in speaking, a specific word is needed, there will be a process of matching the meaning components of a lexical item and the communicative intention it is supposed to express. In that matching process, there is an evaluative moment in which many factors will come into play. (For example, is this word appropriate or good enough for this communicative situation? Am I using the right level of politeness? If I cannot use this word, should I continue or stop?) There is no absolute or mechanistic device that can make that decision for all words. Of course, not every single word is weighed in such a way in speaking, since that would lead to too much loss of speed. How such social-psychologically motivated mechanisms operate is far from clear, but, in particular for our understanding of language use in language learners, a better understanding of such mechanisms is vital.

Lesson-45

TEACHING TO PSYCHOLINGUISTICS

Topic-265: Writing Systems and Speech

Writing system is based on speech sounds: phonemes or syllables in the sound-based system, each symbol represents a speech sound, either a phoneme or a syllable. There are many different sound-based writing scripts in use throughout the world today – for example, Devanagari in India, Arabic in Egypt, the Hangul syllabary in South Korea, the two Kana syllabaries in Japan, the Cyrillic alphabet in Russia and Bulgaria, and the Roman alphabet in English-speaking countries and Western Europe. Some of these sound-based orthographies correspond highly to their spoken forms. Among these are Finnish and Spanish, which use the Roman alphabet to represent the phonemes of their spoken languages, and Korean and Japanese, which use their own native scripts, Hangul and Kana, respectively, to represent the syllables of their spoken languages. (Complexities) occur with Japanese, however, because it also mixes Chinese-type characters into its writing system even though those characters (kanji) can be written in the syllabic forms.) The sound-based orthographies of these languages are easier to read than are sound-based orthographies where the correspondence of written symbol to sound is not high, as is the case for English.

Topic-266: The Study of Writing: Definitions and Classifications

True writing undoubtedly has its roots in pictures for concepts--called pictograms. Pictograms and ideograms are iconic symbols still used in many societies today, both literate and illiterate. Thousands of years ago humans drew pictures of animals and hunters on cave walls. (Lascaux, France) These pictures seem to have been pictograms: that is, pictures representing objects through direct physical resemblance. n Pierce's classification of signs, pictograms are icons, displaying a non-arbitrary relation between form and meaning. Icons, or picture writing used today's industrialized societies include comic strips and political cartoons (minus the captions). It is not known what the pictograms of the Cro Magnon or other ancient groups were used for, but it is certain that they depicted ideas or events and were not a way of symbolizing the sounds of any language. Perhaps we can better guess at the meaning of cave drawings by examining pictographic signs used in more recent times. Many tribal societies have used visual memory aids. This was the function of the Native American wampum belts, which symbolized the main points of treaties, and of the Inc aquipu, or mnemonic knotted strings.

Topic-267: The Whole-Word Vs. Phonics/Decoding Controversy

The Phonics/Decoding approach: The nature of reading according to Phonics/Decoding: The goal of directly determining meaning from written forms is not one shared by Phonics/Decoding advocates. For them, reading is conceived of as a process that converts written forms of language to speech forms and then to meaning (Ehri, 1991; Gough and Juel, 1991; Perfetti, 1991; Adams, 1994; Foorman et al., 1998; National Reading Panel Report, 2000). They regard the essence of reading to be the ability to decode reading materials into speech. Once speech is obtained, they believe, meaning will follow. Thus, they propose early and systematic phonics instruction starting with the mastery of a set of letters and sounds that comprise words.

The Whole-Word approach: Teaching reading should focus on meaning and communication and not on speech. In the view of the Whole-Word proponents, the essential task for a reader is the

recovery of meaning (Huey, 1908; Gates, 1928; Goodman, 1973; F. Smith, 1982, among many others). Whether a reader can say or write the words that are written is incidental to the reading process. Reading is a form of communication the goal of which is the reception of information through written forms.

Fluent Readers Use A Whole-Word Strategy: Actually, all fluent English readers eventually learn to identify whole words as if they were Chinese characters; even the proponents of the Phonics/ Decoding Approach admit the fact (see, for example, Byrne, 1992, or Adams, 1994). The time taken to read a page of text aloud is much longer than when the same page is read silently.

Topic-268: Whole Language Instruction Vs. Phonics Instruction

Attitude about phonics instruction: Phonics instruction is the chronological, precise instruction of letter-sound correspondence. It helps students learn to read by recognizing that each letter creates a sound, and when letters are strung together, they make a word (Feng & Maddox, 2013). The five different ways of teaching phonics instruction are analogy phonics, analytic phonics, embedded phonics, phonics through spelling, and synthetic phonics. Analogy phonics helps students connect unknown words to familiar words. Analytic phonics helps students by analyzing letter-sound relationships in order to prevent isolating sounds while reading. Embedded phonics embeds phonic skills into reading text. Phonics through spelling involves selecting letters for phonemes. Synthetic phonics is converting letters to sounds and blending them to make the word sound (National Reading Panel, 2017). When these aspects of phonics are taught systematically with appropriate timing, these methods are successful. In a phonic classroom, the teacher organizes letters and sounds into a sequence (Feng & Maddox, 2013). Phonics instruction claims to teach all children to read by second grade and tends to show quick progress in students. Because the natural alphabetic way, or the phonetic way, is the English language works, supporters of phonics say it allows for strategic learned skills to read any word (Price, 2017). Phonics instruction is not a complete reading program because it lacks comprehension, fluency, and reading strategies.

Topic-269: A Universal Four-Phase Reading Programme

Phase 1: Word Familiarization

The purpose of this phase is to acquaint children with the shapes of written words and to have them become aware that different spoken words of the language have different written manifestations.

Phase 2: Word Identification

In this phase, the child learns which particular written words are associated with which particular spoken words or objects. The difference between this phase and the preceding one is that this one requires the use of long-term memory.

Phase 3: Phrase and Sentence Identification

This phase is similar to that of the preceding word identification one, except that larger linguistic units are dealt with. Its goal is for the child to read the largest basic linguistic unit, the sentence.

Phase 4: Paragraphs, Stories, and Book Reading

The paragraph involves the largest meaningful written linguistic unit. It consists of a sequence of two or more sentences that are related to one another. A sequence of paragraphs can make a story.

Topic-270: The Advantages of Early Reading for Pre-school Age Children

Why is early reading beneficial? There are a number of important advantages of teaching reading to children in their pre-school years: 1. Reading is a source of pleasure for the child. It satisfies and stimulates a child's natural curiosity and, as a source of knowledge, enriches the child. The earlier a child discovers this, the more enriched and more deeply attracted to reading the child will become. 2. Love of reading is established. The warm supportive informal atmosphere of the home or the pre-school provides an excellent situation for learning. In such a situation, a positive attitude towards reading can be established without the difficulties that are often encountered in elementary school. 3. Young children learn quickly and easily. They have a remarkable rote memory learning ability and can easily acquire a multitude of written words. The older the children get and the poorer their memory, the more they require additional exposure and practice. 4. The children grow up to be better learners. They will be able to read faster and with better comprehension than they would if they were to start reading later. In addition to these advantages, there is another important general one. Children who learned to read early would not have to use time in elementary school learning to read. More time therefore could be devoted to the acquiring of other kinds of knowledge. This could have the effect of improving the educational level of children in all areas of knowledge. That being the case, early reading can significantly benefit the whole of society.