PEOPLE'S DEMOCRATIC REPUBLIC OF ALGERIA
MINISTRY OF HIGHER EDUCATION AND SCIENTIFIC RESEARCH

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A COURSE IN ADVANCED LINGUISTICS FOR MASTER TWO ENGLISH STUDENTS

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ACADEMIC YEAR 2023/2024

Introduction

Advanced linguistics is an interdisciplinary subfield of linguistics that deals with all aspects of linguistic theory that can be put into practice to bridge the gap between linguistic theory and practical fields such as forensics, counseling, computing, etc. The scope of the field has broadened enormously in the past three decades enabling it to branch out into an infinite range of increasingly new subfields: Forensic Linguistics, Clinical Linguistics, Biolinguistics, Neurolinguistics, Computational Linguistics, Peace Linguistics, Conversation Analysis, etc.

This course entitled "A Course in Advanced linguistics for Master two English Students" is devoted to Master two students who have already acquired a good background in linguistics in general and language-related fields of study in particular. It is aimed at students who want to acquire advanced insights into linguistics.

Course Description

This course is designed to introduce the students to the most important concepts and topics in advanced linguistics which investigates, identifies, and offers solutions to language-related real life problems It covers the following topics: Language Structure & Use, Language and Variation, Grammar as the Representation of Linguistics, Universal Grammars, Teaching Grammars and Prescriptive Grammars, Linguistic Competence and Performance, Language and the Brain, Computational Linguistics, Bio Linguistics, Forensic Linguistics, Clinical Linguistics, Developmental Linguistics, Language Functions, Linguistic Stylistics, Corpus Linguistics and Discourse Analysis.

Thus, this course book explores several topics in advanced linguistics However, this does not mean that this material is going to provide the students with all aspects of advanced linguistics. Students are then asked to do further researches and present works, during the tutorials, related to the different topics of the syllabus. In fact, all the course book lectures are supported with a reference list which may help students enhance their understanding and look for more detailed information they need.

Thanks to this course, master-two students will have all the tools they need for a good command of linguistics and applied linguistics. This knowledge will undoubtedly help students to develop the theme of their research and write their extended essays.

Course Objectives

Following the aims outlined above, the objectives for this course are set out below. These are the things students are expected to be able to do at the end of their study. These objectives will enable students to evaluate how much they have learnt and to identify where and what they need to improve in their learning. Thus, by the end of this course students should be able to:

- Acquaint students with the central ideas, concepts, theories, approaches, methods, history and scope of Advanced Linguistics (AL).
- Familiarise students with the primary technical terms, key concepts, techniques, approaches and methods in the field of advanced linguistics.
- Introduce students briefly to some of the innovative and recent subfields of advanced linguistics such as: Forensic Linguistics, Clinical Linguistics,

Biolinguistics, Neurolinguistics, Computational Linguistics, BioLinguistics, Conversation Analysis, etc.

- Learn some important research skills in different domains of advanced linguistics (bridging the gap between language and real-life problems and issues).
- Finally, to think more critically, scientifically and analytically making use of knowledge and skills gained from the study of advanced linguistics.

Contents

1. Language Structure and Use

Introduction

All languages have structure. All human languages use a finite set of sounds that are combined to form meaningful elements or words, which themselves form an infinite set of possible sentences. Every spoken language also divides these discrete sound segments—phonemes—such as /t/, /m/, or /e/ into a class of vowels and a class of consonants. All grammars contain rules for the formation of words, and sentences of definite types, kind, and similar grammatical categories (for example, nouns and verbs) are found in all languages. Every language has a way of referring to past time; the ability to negate; and ways to form questions, issue commands, and so on. Although human languages are specific to their places of use and origin (for example, languages of seafaring cultures have more specific words for oceanic phenomena than do languages of desert tribes), semantic universals, such as "male" or "female," are found in every language in the world.

1. Language is Dynamic

Languages change over time. Pronunciation (phonology) changes—across 400 years, for example, Shakespeare's plays often feature scene-ending couplets whose words may have rhymed in his day but do not in modern translations. We recognize that pronunciation in English has altered over time, because the spelling of some words is archaic: We no longer pronounce the /k/ in knight or the /w/ in write. Semantics change over time, and words disappear, such as the archaic English words bilbo, costermonger, fluey, and shew. Words expand their meanings, as with geek and mouse. New words appear, such as nannycam and freeware. Some languages change more than others.

2. Language is Complex

Without question, using language is one of the most complex of human activities, providing the human race with a psychological tool unmatched in power and flexibility. It is normal for humans no matter their native language to be able to communicate a wide range of concepts, both concrete and abstract. All languages are equally complex, capable of expressing a wide range of ideas and expandable to include new words for new concepts. Language is arbitrary, meaning that we cannot guess the meaning of a word from its sound (except for a few words such as buzz)—there is no inherent reason to link the sound and meaning of a word. Moreover, language is open-ended—an infinite set of sentences can be produced in any language. Even though language is complicated, every healthy child—regardless of racial, geographical, social, or economic heritage—is capable of learning any language to which he or she is exposed.

Phonology: The Sound Patterns of Language

Phonology is the study of the sound system of a language. Phonetics is the science of the production, reception, analysis, transcription, and classification of speech sounds, and also, "the relation of speech sounds to the total language process" (Heilman, 2002, p. 4).

-**Phonemes**: Phonemes are the individual sounds in a language, the distinctive units that "make a difference" when sounds distinguish words. For example, in English the initial consonant sounds /p/ and /b/ are the only difference between the words park and bark and thus are phonemes. However, if phonemic variations do not distinguish words, they are considered variations of one phoneme rather than completely different phonemes

Phonemes can be described in terms of their characteristic point of articulation (tip, front, or back of the tongue), the manner of articulation (the way the airstream is

obstructed), and whether the vocal cords vibrate or not (voiced versus voiceless sounds). Not all languages distinguish between voiced and voiceless sounds.

-Stress: Besides phonemes, characteristics of language sounds include stress, pitch/tone, and intonation. Stress, the amount of volume a speaker gives to a particular sound, operates at two levels: word and sentence. Stress is a property of syllables—stressed syllables are longer and louder than unstressed syllables. Incorrect stress can alter the meanings of words. Stress can further be used at the sentence level to vary emphasis.

-**Pitch and Rhythm**: Another sound quality is important in oral speech. Pitch at the word or sentence level is a phonological component of language that plays a key role in determining meaning. Pitch interacts with word stress to produce prosody, the underlying rhythm of the language.

-Intonation Patterns: The use of pitch to modify sentence meaning is called intonation. Each language has a distinctive sound flow across the sentence. The English pattern is characterized by accented and unaccented syllables, the same patterns found in English poetry

Morphology

The Words of Language Morphology is the study of the meaning units in a language. In some cases in English, individual words constitute these basic meaning units (e.g., chase). However, many words can be broken down into smaller segments—morphemes—that still retain meaning.

-Morphemes, small units that cannot be further subdivided, are the basic building blocks of meaning. Morphemes can be represented by a single sound. Morphemes can be a

single syllable or two or more syllables. A morpheme may also have alternate phonetic forms: The regular plural -s can be pronounced either /z/ (bags), /s/ (cats), or /iz/ (bushes). Morphemes can be free (can stand alone) or bound(only in conjunctions with others.

Word-Formation Processes English has historically been a language that has borrowed extensively from other languages or coined new words from extant terms. Studying how new words are formed—largely from existing morphemes—helps English learners understand morphemes.

Words can be formed through different processes such as: clipping, acronyms, blending, etc.

Syntax: The Sentence Patterns of Language

Syntax refers to the rules that govern the formation of phrases and sentences. The words in a language have semantic properties that entail their use in sentences in some ways and not in others. In English, for example, the position of the word in a sentence is an important part of the overall meaning.

Whereas syntax refers to the internally constructed rules that make sentences, grammar looks at whether a sentence conforms to some standard.

Besides grammaticality and word order, speakers' syntactic knowledge helps them understand three other sentence features. Double meaning, or ambiguity. On the other hand, sentences can have different structures but mean the same thing.

Semantics: The Meanings of Language

Semantics is the study of the meanings of individual words and of larger units such as phrases and sentences. Speakers of a language learn the "agreed-on" meanings of words

and phrases in their language; these meanings must be shared, or communication becomes impossible.

Some words carry a high degree of stability and conformity in the ways they are used (slap as a verb, for example, must involve the hand or some other flat object—"He slapped me with his ball" is not semantically meaningful). Other words carry multiple meanings (e.g., can)

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2. Language and Variation

Introduction

If structure is at the heart of language, then variation defines its soul. As Sapir (1921: 147) put it, “Everyone knows that language is variable. «The study of language variation is an important part of sociolinguistics, to the extent that it requires reference to social factors. Languages vary from one place to another, from one social group to another, and from one situation to another. Therefore, Geographical variation, Social variation, and Contextual variation, are treated in this lecture.

1. Linguistic Item/ Linguistic Variable: Sociolinguists in most cases are concerned with social distribution of particular linguistic items, for example words, sounds, or grammatical constructions. Let us give some examples of linguistic items.

-The **word child**, for example, is an item used in southern England and in Midland, while bairn is used in northern England. Therefore, the words child and bairn are different linguistic items in English. They have different social distributions.

-In England, **the sound / /,** as in sun /»s√n/, is a typical southern sound, found in southern England and in South Midland, while this sound is not used among speakers of dialects in North Midland and northern England, where, for example, the word sun is pronounced /»sUn/, with the sound /U/, which is found in put /»pUt/ in most dialects also in the South (some areas have /√/). The English phonemes /√/ and /U/ are different linguistic items.

-**The suffix –ing** of written English, as in coming, is pronounced /IN/ and /In/, as in /»k√mIN/ and /»k√mIn/, and the two pronunciations have different social distributions: the former is a typical standard pronunciation and the latter a typical non-standard pronunciation. The English suffixes /IN/ and /In/ are different linguistic items.

In the English dialects of England, the most widespread past tense of catch /k / is catched /»kQtSt/, while the standard dialect and some other dialects have caught /»k t/. The English past tense forms catched / / and caught / / are different linguistic items. -**Give it to me**! is an example of a Standard English grammatical construction of an imperative form. In traditional dialects of England, this construction is not very common, being found primarily in the South-west and in some areas on the south-eastern coast (including the London area). The construction with the widest geographical distribution in England is Give me it! and Give it me! These three sentences, Give it to me!, Give me it!, and Give it me!, are instances of three different grammatical constructions, each of which is a linguistic item.

2. Variety

There are many ways of speaking, and each way of speaking is a variety. In a more precise manner, a variety may be defined as a set of linguistic items with similar social distribution. It should be emphasized that a variety is not necessarily a «full-fledged language», with a large vocabulary and grammar. It may simply be a small set of linguistic items, as is the case with a slang, which may be defined as a quite restricted set of specific words and informal language used by a specific group of people.

3. Language Variation

All languages show variation; what is more, they vary in identical ways, namely geographically and socially. These two parameters, along which variation occurs, are in principle independent of each other, although we shall see that there are ways in which they (and others to be discussed later) are interlinked. We shall consider each in turn .

3 .1 Geographical Variation

It is a universal characteristic of human language that speakers of the 'same' language who live in different parts of a continuous territory do not speak in the same way. In fact, such variation is usually smooth and gradual: the speech of each region differs in some feature or features from the speech of each neighbouring region, but without seriously impairing mutual comprehension.[2] Successive small differences accumulate as one crosses a geographical area, and in an extensive territory this accumulation of differences may result in total mutual incomprehensibility between the speech belonging to distant parts of the territory being examined. This kind of variation is known as *dialect continuum*. The Arabic dialects, for example, from Morocco to Iraq constitute a dialect continuum, and so does also a large part of the Indo-Aryan language area of northern India.

3.2 Social Variation

It is evident, from casual observation, that not all people in a single geographical area speak in the same way in every situation, even if they were all born in the same place. Differences of speech depend on one or more social factors which apply to the speaker concerned. These factors include age, sex, race, class background, education, occupation, and income. Thus, social variation is multi-dimensional; there are many parameters which define the social 'space' within which the speaker is located, and his or her speech varies, in different ways, in accordance with each of these parameters. Such variety of language with features that differ according to social parameters is called *social dialect*. To take an example, Spanish participles in -ado(s) (and some other, similarly structured, words) reveal a range of pronunciations; the final segment of words like cansado, pescado may be pronounced in one or other of the following ways: [-áðo], [-áðo], [-áo], [-áu]. But the appearance of one or other of these variants is controlled (at least in part) by the

sociological characteristics of the speaker. Thus, the variant [-áu] is much more frequent in working-class speech than in that of the middle classes.

3.3 Contextual Variation:

While social variation to a large extent—although not exclusively—is variation between individuals belonging to different societal groups, contextual variation is variation within the individual: we all vary our language between contexts. Each individual commands at least part of the range and selects a particular variant according to the circumstances (formal, informal, relaxed, etc.) in which he or she is speaking. Therefore, there are many phenomena that could be treated here. The degree of formality integrated into the grammatical system in the French language can be a good example of contextual variation.

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3. Grammar as the Representation of Linguistics

1) What is Grammar?

We use the term “grammar” with a systematic ambiguity. On the one hand, the term refers to the explicit theory constructed by the linguist and proposed as a description of the speaker’s competence. On the other hand, it refers to this competence itself.

What is it about the topic of grammar that ruffles so many feathers? Ask certain language instructors if they “teach grammar” in their language classes, and one may be met with a condescending glare and a response along the lines of “No, of course, I don’t teach grammar. We use the communicative approach in our program, where students learn grammar through task-based activities.” For some, admitting to “teaching grammar” is paramount to acknowledging being old-fashioned, traditional, or passé.

Others, when responding to the same question, may explain that they do, indeed, teach grammar in their classes: “I have to explain the grammar to my students, because they don’t understand the descriptions in the book.” These individuals sometimes add, however, that they wish that they could make their grammar explanations and activities more communicative.

Teaching assistants and new instructors want and need to know how they are supposed to present and teach grammar to their students, yet they seem to get mixed messages from supervisors, colleagues, and researchers. Should they assume that students can master a given grammar point by studying at home and then launching into the book’s activities in class, or should instructors provide students with metalinguistic explanations of the target structures? What should instructors do if students come to class claiming that they simply did not understand the book’s explanation of a difficult grammar point? What

if the instructors themselves do not completely understand the book's grammar descriptions? Where should they turn for help?

Beginning instructors are often advised to try to convince their students not to focus too much on grammar. Many language instructors remember being told by their supervisors to discourage students from asking questions about grammar in class: "If they insist on wanting you to explain grammar to them, tell them to come to your office hours for extra help." As Robin points out, however, many students—especially adults—do want to acquire an understanding of the rules of grammar:

> Ten-year olds don't want the big picture, but college students are more likely to demand an analytical treatment of the morphological system of the target language. It behooves instructors to play to the best styles of each learner. A few charts and basic manipulation drills on each point does take away from valuable time that might otherwise be spent in communicative activities. But this kind of basic structural handholding appeals to many learners, especially older ones, who find more chaos than solace in a less structured environment. (2004)

It may be a battle trying to get students to assimilate grammar rules entirely through input/communicative activities, but many instructors are not convinced that students should receive more explicit instruction when it comes to studying certain, more complicated, grammar points.

2) Descriptive Grammars

The way we are using the word grammar differs from most common usages. In our sense, the grammar is the knowledge speakers have about the units and rules of their language—rules for combining sounds into words (called phonology), rules of word formation (called morphology), rules for combining words into phrases and phrases into

sentences (called syntax), as well as the rules for assigning meaning (called semantics). The grammar, together with a mental dictionary (called a lexicon) that lists the words of the language, represents our linguistic competence. To understand the nature of language we must understand the nature of grammar.

Every human being who speaks a language knows its grammar. When linguists wish to describe a language, they make explicit the rules of the grammar of the language that exist in the minds of its speakers. There will be some differences among speakers, but there must be shared knowledge too. The shared knowledge—the common parts of the grammar—makes it possible to communicate through language. To the extent that the linguist's description is a true model of the speakers' linguistic capacity, it is a successful description of the grammar and of the language itself. Such a model is called a descriptive grammar. It does not tell you how you should speak; it describes your basic linguistic knowledge. It explains how it is possible for you to speak and understand and make judgments about well-formedness, and it tells what you know about the sounds, words, phrases, and sentences of your language.

When we say that a sentence is grammatical we mean that it conforms to the rules of the mental grammar (as described by the linguist); when we say that it is ungrammatical, we mean it deviates from the rules in some way. If, however, we posit a rule for English that does not agree with your intuitions.as a speaker, then the grammar we are describing differs in some way from the mental grammar that represents your linguistic competence; that is, your language is not the one described. No language or variety of a language (called a dialect) is superior or inferior to any other in a linguistic sense. Every grammar is equally complex, logical, and capable of producing an infinite set of sentences to express

any thought. If something can be expressed in one language or one dialect, it can be expressed in any other language or dialect. It might involve different means and different words, but it can be expressed.

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4. Universal Grammars, Teaching Grammars and Prescriptive Grammars

1. Universal Grammar

There are rules of particular languages, such as English or Arabic or Zulu, that form part of the individual grammars of these languages, and then there are rules that hold in all languages. The universal rules are of particular interest because they give us a window into the human "faculty of language" which enables us to learn and use any particular language.

Interest in language universals has a long history. Early scholars encouraged research into the nature of language in general and promoted the idea of general grammar as distinct from special grammar. General grammar was to reveal those features common to all languages.

Students trying to learn Latin, Greek, French, or Swahili as a second language are generally so focused on learning aspects of the new language that differ from their native language that they may be skeptical of the universal laws of language. Yet there are many things that all language learners know unconsciously even before they begin to learn a new language. They know that a language has its own set of sounds, perhaps thought of as its alphabet, that combine according to certain patterns to form words, and that the words themselves recombine to form phrases and sentences. The learner will expect to find verbs and nouns—as these are universal grammatical categories; she will know that the language— like all languages—has a way of negating, forming questions, issuing commands, referring to past or future time, and more generally, has a system of rules that will allow her to produce and understand an infinite number of sentences.

The more linguists explore the intricacies of human language, the more evidence accumulates to support Chomsky's view that there is a Universal Grammar (UG) that is part of the biologically endowed human language faculty. We can think of UG as the blueprint that all languages follow that forms part of the child's innate capacity for language learning. It specifies the different components of the grammar and their relations, how the different rules of these components are constructed, how they interact, and so on. A major aim of linguistic theory is to discover the nature of UG.

The linguist's goal is to reveal the "laws of human language," as the physicist's goal is to reveal the "laws of the physical universe." The complexity of language undoubtedly means this goal will never be fully achieved. All scientific theories are incomplete, and new hypotheses must be proposed to account for new data. Theories are continually changing as new discoveries are made. Just as physics was enlarged by Einstein's theories of relativity, so grows the linguistic theory of UG as new discoveries shed new light on the nature of human language. The comparative study of many different languages is of central importance to this enterprise.

2. Teaching Grammars

The descriptive grammar of a language attempts to describe the rules internalized by a speaker of that language. It is different from a teaching grammar, which is used to learn another language or dialect. Teaching grammars can be helpful to people who do not speak the standard or prestige dialect, but find it would be advantageous socially and economically to do so. They are used in schools in foreign language classes. This kind of grammar gives the words and their pronunciations, and explicitly states the rules of the language, especially where they differ from the language of instruction.

It is often difficult for adults to learn a second language without formal instruction, even when they have lived for an extended period in a country where the language is spoken. (Second language acquisition is discussed in more detail in chapter 9.) Teaching grammars assume that the student already knows one language and compares the grammar of the target language with the grammar of the native language. The meaning of a word is provided by a gloss—the parallel word in the student's native language, such as maison, 'house' in French. It is assumed that the student knows the meaning of the gloss 'house' and so also the meaning of the word maison.

Sounds of the target language that do not occur in the native language are often described by reference to known sounds. Thus the student might be aided in producing the French sound u in the word tu by instructions such as "Round your lips while producing the vowel sound in tea."

The rules about how to put words together to form grammatical sentences also refer to the learners' knowledge of their native language. For example, the teaching grammar Learn Zulu by Sibusiso Nyembezi states that "The difference between singular and plural is not at the end of the word but at the beginning of it," and warns that "Zulu does not have the indefinite and definite articles 'a' and 'the.'" Such statements assume students know the rules of their own grammar, in this case English. Although such grammars might be considered prescriptive in the sense that they attempt to teach the student what is or is not a grammatical construction in the new language, their aim is different from grammars that attempt to change the rules or usage of a language that is already known by the speaker.

3. Prescriptive Grammars

Not all grammarians, past or present, share the view that all grammars are equal. Language "purists" of all ages believe that some versions of a language are better than others, that there are certain "correct" forms that all educated people should use in speaking and writing, and that language change is corruption. The Greek Alexandrians in the first century, the Arabic scholars at Basra in the eighth century, and numerous English grammarians of the eighteenth and nineteenth centuries held this view. They wished to prescribe rather than describe the rules of grammar, which gave rise to the writing of prescriptive grammars.

In the Renaissance a new middle class emerged who wanted their children to speak the dialect of the "upper" classes. This desire led to the publication of many prescriptive grammars. In 1762 Bishop Robert Lowth wrote A Short Introduction to English Grammar with Critical Notes. Lowth prescribed a number of new rules for English, many of them influenced by his personal taste. Before the publication of his grammar, practically everyone—upper-class, middle-class, and lower-class—said I don't have none and You was wrong about that. Lowth, however, decided that "two negatives make a positive" and therefore one should say I don't have any; and that even when you is singular it should be followed by the plural were. Many of these prescriptive rules were based on Latin grammar and made little sense for English. Because Lowth was influential and because the rising new class wanted to speak "properly," many of these new rules were legislated into English grammar, at least for the prestige dialect—that variety of the language spoken by people in positions of power. The view that dialects that regularly use double negatives are inferior cannot be justified if one looks at the standard dialects of other languages in the world. Romance languages, for example, use double negatives, as the following examples from French and Italian show:

French: Je ne veux parler avec personne.

I not want speak with no-one.

Italian: Non voglio parlare con nessuno.

not I-want speak with no-one.

English translation: “I don’t want to speak with anyone.”

Prescriptive grammars such as Lowth’s are different from the descriptive grammars we have been discussing. Their goal is not to describe the rules people know, but to tell them what rules they should follow. The great British Prime Minister Winston Churchill is credited with this response to the “rule” against ending a sentence with a preposition: “This is the sort of nonsense up with which I will not put.”

Today our bookstores are populated with books by language purists attempting to “save the English language.” They criticize those who use enormity to mean ‘enormous’ instead of ‘monstrously evil.’ But languages change in the course of time and words change meaning. Language change is a natural process. Over time enormity was used increasingly used to mean ‘enormous,’ and now that President Barack Obama has used it that way (in his victory speech of November 4, 2008) and that J. K. Rowling uses it similarly in the immensely popular Harry Potter and the Deathly Hallows, that usage will gain acceptance. Still, the “saviors” of the English language will never disappear. They will continue to blame television, the schools, and even the National Council of Teachers of English for failing to preserve the standard language, and are likely to continue to dis (oops, we mean disparage) anyone who suggests that African American English (AAE)3 and other dialects are viable, complete languages.

All human languages and dialects are fully expressive, complete, and logical, as much as they were two hundred or two thousand years ago. Hopefully (another frowned-upon usage), this book will convince you that all languages and dialects are rule-governed, whether spoken by rich or poor, powerful or weak, learned or illiterate. Grammars and usages of particular groups in society may be dominant for social and political reasons, but from a linguistic (scientific) perspective they are neither superior nor inferior to the grammars and usages of less prestigious members of society.

Having said all this, it is undeniable that the standard dialect may indeed be a better dialect for someone wishing to obtain a particular job or achieve a position of social prestige. In a society where "linguistic profiling" is used to discriminate against speakers of a minority dialect, it may behoove those speakers to learn the prestige dialect rather than wait for social change. But linguistically, prestige and standard dialects do not have superior grammars.

Finally, all of the preceding remarks apply to spoken language. Writing is another story. Writing follows certain prescriptive rules of grammar, usage, and style that the spoken language does not, and is subject to little, if any, dialectal variation. And writing is not acquired naturally through simple exposure to others speaking the language as spoken languages are, but must be taught.

4. The Development of Grammar

Linguistic theory is concerned not only with describing the knowledge that an adult speaker has of his or her language, but also with explaining how this knowledge is acquired.

All typically developing children acquire (at least one) language in a relatively short period with apparent ease. They do this despite the fact that parents and other caregivers do not provide them with any specific language instruction. Indeed, it is often remarked that children seem to "pick up" language just from hearing it spoken around them. Children are languagelearning virtuosos—whether a child is male or female, from a rich family or a disadvantaged one, grows up on a farm or in the city, attends day care or has home care, none of these factors fundamentally affects the way language develops. Children can acquire any language they are exposed to with comparable ease—English, Dutch, French, Swahili, Japanese—and even though each of these languages has its own peculiar characteristics, children learn them all in very much the same way. For example, all children go through a babbling stage; their babbles gradually give way to words, which then combine to form simple sentences and then sentences of ever-increasing complexity. The same child who may be unable to tie her shoes or even count to five has managed to master the complex grammatical structures of her language and acquire a substantial lexicon.

How children accomplish this remarkable cognitive feat is a topic of intense interest to linguists. The child's inexorable path to adult linguistic knowledge and the uniformity of the acquisition process point to a substantial innate component to language development, what we referred to earlier as Universal Grammar. Children acquire language as quickly and effortlessly as they do because they do not have to figure out all the grammatical rules, only those that are specific to their particular language. The universal properties—the laws of language—are part of their biological endowment. In chapter 9 we will discuss language acquisition in more detail.

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5. Linguistic Competence/ Performance

1 . Linguistic Competence

Chomsky (1965) emphasized the difference between linguistic competence, the speaker-hearer‟s knowledge of his language and performance, the actual use of language in concrete situations, he points out that "linguistic theory is concerned primarily with an ideal speaker-listener, in a completely homogeneous speech-community, who knows its language perfectly and is unaffected by such gram-matically irrelevant conditions as memory limitations, distractions, shifts of attention and interests, and errors (random or characteristic) in applying his knowledge of the language in actual performance. "(p. 4).

For Fodor and Garrett (1966), Chomsky‟s insistence upon the competence/performance distinction in linguistics amounts to a major methodological clarification. They claim that, if the object of the linguist's study is the behavior of speakers, the data the linguist will have at his disposal will be impoverished in two ways. First of all, the speaker's utterances are small, finite and fortuitous from the linguistic point of view and therefore a theory of the corpus would be arbitrarily related to a theory of the language. Furthermore, the relevant structural relations in the language would not be exemplified in the corpus and thus generalizations that are true of the corpus would not be true of the language. Secondly, there are features of the language such as grammaticality and ambiguity that speakers know about their utterances that would fail to emerge as features of a corpus the linguist is supposed to be studying. Therefore, a theory of linguistic knowledge must take into account this impoverished data and attempt on the one hand to "project" a finite corpus of utterances to a set of rules which describes the infinite range of sentences and on the other hand to account for the speaker‟s intuitions concerning

the language. Moreover, Fodor and Garrett (op. cit) point out that competence is sometimes studied in a more restricted sense. Linguistic capacity is studied independently of other psychological mechanisms. The contrast is thus between the speaker ‟s information about his language and whatever psychological mechanisms may he supposed to enter into the exploration of that information. A theory of linguistic knowledge is thus idealized in the sense that language is seen through idealized abstractions while language behavior or what seems to be irrelevant details of language behavior are disregarded.

What is then a theory of linguistic performance? Wales and Marshall (1966) state “it is a theory of how, given a certain linguistic competence, we actually put it to use - realize it, express it. It is also a theory of the limitations of the mechanisms, which enable us to express our own linguistic competence.” (p.30). Fodor and Garrett (op.cit) claim that it is the role of the psychologist to construct a performance model where “this means not a model of behaviour but a model of how the speaker‟s linguistic information interacts with other psychological mechanisms in the production of behaviour.” (p. 138). Fodor and Garrett also claim that “both linguistic and psychological models are models of competence.” (p. 138). Habennas (1970) maintains Chomsky‟s distinction of competence and performance, however his conception of competence is at a higher level of idealization than Chomsky ‟s. He claims that in addition to his linguistic competence, a speaker must have basic qualifications of speech and of symbolic interaction (role behaviour) which he calls communicative competence. Communicative competence, for Habermas concerns an idealised speech situation which does not take into account the actual restrictions under empirical conditions.

2. Communicative Competence

Dell Hymes (1972) was the first to-point out that the Chomskyan notion of competence dealing with the ideal speaker-listener in a homogeneous speech community provides no place for competency for language use, i.e. The theory fails to account for the whole socio-cultural dimension.

As a linguist and anthropologist, Hymes was concerned on the one hand with linguistic theory, and on the other hand with the socio-cultural aspect of language. Indeed, says Hymes, what one is inevitably concerned with is “performance” - the actual use of language in a concrete situation; its use moreover by speaker-listeners who are far from “ideal” and whose language behaviour cannot be characterised as that of any “homogeneous speech community". Hymes points out that Chomsky‟s narrow concept of competence represents a “Garden of Eden” view which disregards questions of use by relegating them to the area of performance. This limitation of Chomsky‟s linguistic competence led Hymes to coin the term “communicative competence”, as described by Hymes (1971), communicative competence is a wide term including not only linguistic Know-ledge but also knowledge of a set of sociolinguistic codes and rules for using them. Communicative competence, he claims is “the most general term for the speaking and hearing capabilities of a person - competence is understood to be dependent on two things : (tacit) knowledge and (ability for) use". (p. 16). The actual theory of communicative competence that he suggests involves knowledge (and abilities) of four types.

l. “Whether (and to what degree) something is formally possible.

2. Whether (and to what degree) something is feasible in virtue of the means of implementation available.

3. Whether (and to what degree) something is appropriate (adequate, happy, successful) in relation to a context in which it is used and evaluated.

4. Whether (and to what degree) something is in fact done, actually performed, and what its doing entails. Hymes (l972p.12).

Since Hymes, a number of researchers have written about communicative competence, but have used a variety of definitions. For Brown (1976) communicative competence, unlike linguistic competence, involves, awareness of the transactions that occur between people. Competence in this perspective is tied to actual performance of the language in social situations (in Wieman and Backlund 1980).

Backlund (1977) offers a wider definition of communicative competence, one that is not limited to language usage. He claims that communicative competence is "the ability of art interactant to choose among available communicative behavior in order that he (she) may successfully accomplish his (her) own interpersonal goals during an encounter while maintaining the face and line of his (her) fellow interactant within the constraints of the situations. "(p. 16).

Now, let us return to the concept of communicative competence itself which needs further clarification. For Hymes (1972) and Campbell and Wales (1970) communicative competence is to include not only grammatical competence (or explicit and implicit knowledge of the rules of grammar) but also contextual and sociolinguistic competence (knowledge of the rules of language use).

Furthermore, they both recognize, implicitly in some cases the distinction between communicative competence and (communicative) performance, where this last notion refers to actual use.

3. Pragmatic competence

Just as Hymes reacted against Chomsky"s concept of competence-performance and proposed communicative competence instead, Oller (1970) too attacked transformational generative grammar and proposed pragmatics as an alternative.

Oller (op.cit) defines pragmatics as "the relationship between linguistic contexts and extralinguistic contexts. It embraces the traditional subject matter of psycholinguistics and also that of Sociolinguistics". Oller goes on to say that "pragmatics is about how people communicate information about acts and feelings to other people, or how they merely express themselves and their feelings through the use of language...(p.19). Such a definition of pragmatics is too wide in the sense that it fails to distinguish pragmatics from many other disciplines interested in functional approaches to language, including psycholinguistics and sociolinguistics.

Another definition favoured in the literature equates pragmatics with the ability of language users to pair sentences with the contexts in which they would be appropriate. According to Levinson (1983) such a view enjoys much support among linguists and philosophers but unfortunately it involves many problems. This definition "would have as a consequence exact identity with a sociolinguistic construct in the manner of Hymes (1972) as a theory of communicative competence." „p. 24).

A more restricted view of pragmatics has been proposed by Katz and Fodor (1963) who suggest that pragmatics should be concerned solely with principles of language usage and-should have nothing to do with the description of linguistic structure. Katz and Fodor propose that a theory of pragmatics would essentially be concerned with the disambiguation of sentences by the contexts in which they were uttered. Such a definition would restrict the scope of pragmatics to performance principles of language use (to invoke Chomsky"s distinction between competence and performance).

As for Chomsky (1981), pragmatic competence is defined as the ability to place "language in the institutional settings of its use, relating intentions and purposes to the linguistic means at hand." (p. 225). Chomsky distinguishes pragmatic competence from grammatical competence. Grammatical competence in this instance is limited to knowledge of form and meaning whereas pragmatics is concerned with knowledge of conditions and manner of appropriate use. For Chomsky, theories of grammatical and pragmatic competence must find their place in a theory of performance that takes into account the structures of memory, our mode of organizing experience and so on. Whereas for Chomsky pragmatic competence is a wider term which includes communicative competence as one of its components, Fraser and Rientel (1980), view communicative competence as the more general level which incorporates not only pragmatic competence but also the areas of "discourse analysis", "conversational analysis", "conversational interaction" and "ethnomethodological" studies. They point out "any serious study of language use must go beyond the utterance level - what we have called pragmatic competence - to the more general level of communicative competence which embodies the areas mentioned above." (p. 78)

4. Implications of Linguistic Competence, Communicative Competence and Pragmatic Competence for Foreign Language Teaching and Testing

In the field of language learning and teaching, "linguistic competence may be thought of as the learner‟s knowledge of the structures and vocabulary of the language and his ability to produce and comprehend well-formed sentences in the language". (Ficher 1984 p. 35). In this sense the student‟s participation in the classroom is described by fisher as rule-governed behaviour in which his attention is focused on the application of rules to derive correct grammatical forms. As far as pragmatics is concerned, Oller (1970) claims that it has definite implications for language teaching; for example, he indicates that pattern drills should be designed so that instead of manipulating purely abstract elements of a calculus - usually a paradigm of totally unrelated sentences illustrating a point of syntax - the student should be using language to respond to a pradigm of situations"...(p. 507).

Oller goes on to say that pragmatics defines the "goal of teaching a language as inducing the student not merely to manipulate meaningless sound sequences, but to send and receive messages in the language. " (p. 507). Such a view of pragmatics coincides with that of communicative competence seen as the learner‟s use of " the language to send and receive messages in concrete situation and for specific purposes. "(Fisher 1984 p. 36).

Whereas for Fraser et al. (1980) pragmatic competence is only seen as a subcomponent to the more general level of communicative competence. It is concerned with "the ability of the second language leaner to use the language in a social context to perform the various speech acts of requesting apologizing and the like." (78).

Foreign language communicative competence, for Savignon (1972) is seen as the "ability to function dynamically in a truly communicative setting adapting to all of the informational elements in the context be they linguistic or non-verbal". (p. 8-9).

Thus, we can see that although communicative competence implies an underlying knowledge and a potential to communicate well, its definition is usually associated with actual performance in a social situation. However, opinions in the literature differ as to whether communicative competence should be distinguished from communicative performance and whether communicative competence should include grammatical competence as one of its components

With regard to this last point, Palmer (1978), Paulston (1974) and Widdowson (1971) among others consider that communicative competence should be distinguished from linguistic competence. In this context communicative competence is used to refer exclusively to knowledge or capacity relating to the rules of language use and the term linguistic competence used to refer to the rules of grammar. Widdowson (op. cit.) makes the distinction between usage, the language users' knowledge of linguistic rules and use, the language user "s ability to use his knowledge of linguistic rules for effective communication. He points out that "in normal circumstances, linguistic performance involves the simultaneous manifestation of the language system as usage and its realization as use. But we can separate one from the other if we wish by focusing our attention on one rather than the other." (p. 3). For Munby (1978), the view that communicative competence includes grammatical competence is to be preferred to the view that it does not since adopting the former view eliminates two misleading conclusions :

1) that grammatical competence and communicative competence should be taught separately, or the former should be taught first and (2) that grammatical competence is not an essential component of communicative competence.

Commenting on this issue, Canale and Swain (1980), point out that Munby‟s first reason is unconvincing because even if one adopts the position that communicative competence should include grammatical competence, it is possible to maintain that the teaching of grammatical competence could be separate from or precede the teaching of sociolinguistic competence. As far as Munby‟s second reason is concerned, Canale and Swain claim that it is both convincing and important. They give the example of a Canadian English speaker who might have an adequate level of sociolinguistic competence in Canadian; just because he developed such a competence in Canadian English, that does not mean that such a person could communicate effectively with a monolingual speaker of Canadian French without a minimal level of grammatical competence in French.

Now let us return to the second view of communicative competence i.e. The view which considers that communicative competence should be distinguished from communicative performance. A large number of researchers (Carroll 1961, Briere 1971, Canale and Swain 1980) point out that "communicative competence should be distinguished from communicative performance, which is the realization of these competencies and their interaction in the actual production and comprehension of utterances." (p. 6). They emphasize that this distinction should be maintained at least for second language teaching and testing purposes. They claim that "teaching methodology and assessment instruments must be designed so as to address not only communicative competence but also communicative performance i.e. The actual demonstration of

knowledge in real second language situations and for authentic communicative purposes." (p. 6). For Savignon (1983) also the distinction is to be maintained. She points out that "although there is a theoretical difference between competence and performance, only performance is observable and therefore provides the basis for making inferences about a person‟s underlying competence" (254). Another researcher (Rea 1985) claims that although the distinction between communicative performance is justified at the theopretical level, he found it confusing and misleading at the practical level. As far as language testing is concerned, he questions the commonly held distinction between "competence oriented tests" and "performance" tests and suggests instead a single category in practice, that of "performance".

By way of summary we could say that although for methodological reasons the literature on language teaching and language testing gives the impression that linguistic competence and communicative competence (or for that matter pragmatic competence) are fundamentally distinct theoretical construct with few features in common, our view is that linguistic and communicative competence are complementary and neither „can occur without the other. As Gunterman and Phillips (1980) put it "one cannot communicate without the grammar and at the same time the communicative use of language appears to be essential to the acquisition of linguistic features". Linguistic and communicative competence (or pragmatic competence) are not separate concepts with nothing in common, they are both part of the language or as Davies (1978) put it "linguistic competence and communicative competence represent different points along a single language learning continuum". (p. 215). Canale and Swain (1979) would refer to this combined, overall proficiency as one‟s true communicative competence. However, the distinction has to be maintained only for second or foreign language teaching of testing purposes, since foreign

language instructional materials, methods and tests are often geared to elicit one rather than the other. In this context Palmer (1979) claims that second language learners can experience either compartmentalized or integrated control of the two components of language. In the former case (compartmentalised situation), the foreign language learner will have a good control of the formal aspect of the language (phonology, vocabulary and grammar); but be unable to get his meaning across with ease. In the second case (integrated situation), a foreign language learner is willing to communicate or to get his message across while never controlling the grammar adequately. Therefore, linguistic and communicative competence must combine to produce, general, overall, language proficiency which we will refer to as integration. We believe that integration is the ultimate goal of a foreign language class.

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6. Language and the Brain

Introduction

The biological side of language is the subject of increasing research, and advances are possible because of the growing sophistication of available experimental techniques and equipment. Most recently, neuro- and cognitive scientists attempt at spelling out the brain mechanisms of language in terms of neuronal structure and function.

1. Neurolinguistics

The study of the relationship between language and the brain is called neurolinguistics. Although this is a relatively recent term, the field of study dates back to the nineteenth century. Establishing the location of language in the brain was an early challenge, but one event incidentally provided a clue.

In September 1848, near Cavendish, Vermont, a construction foreman called Phineas P. Gage was in charge of a construction crew blasting away rocks to lay a new stretch of railway line. As Mr. Gage pushed an iron tamping rod into the blasting hole in a rock, some gunpowder accidentally exploded and sent the threeand-a-half-foot long tamping rod up through his upper left cheek and out from the top of his forehead. The rod landed about fifty yards away. Mr. Gage suffered the type of injury from which, it was assumed, no one could recover. However, a month later, he was up and about, with no apparent damage to his senses or his speech.

The medical evidence was clear. A huge metal rod had gone through the front part of Mr. Gage's brain, but his language abilities were unaffected. He was a medical marvel.

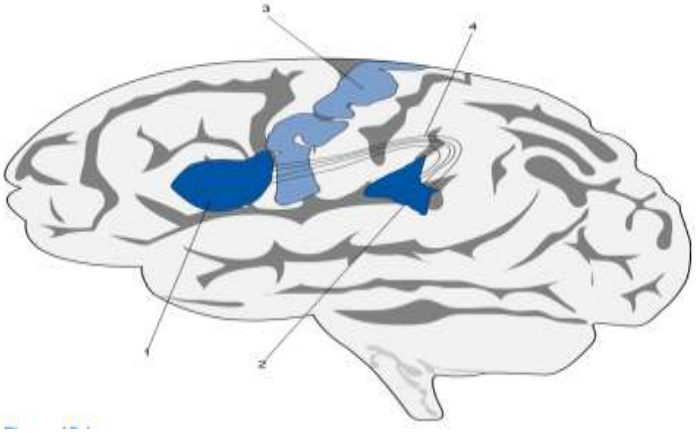
The point of this rather amazing tale is that, while language may be located in the brain, it clearly is not situated right at the front.

2. Language Areas in the Brain

Since that time, a number of discoveries have been made about the specific parts in the brain that are related to language functions. We now know that the most important parts are in areas above the left ear. In order to describe them in greater detail, we need to look more closely at some of the gray matter. So, take a head, remove hair, scalp, skull, then disconnect the brain stem (connecting the brain to the spinal cord) and cut the corpus callosum (connecting the two hemispheres). If we disregard a certain amount of other material, we will basically be left with two parts, the left hemisphere and the right hemisphere. If we put the right hemisphere aside for now, and place the left hemisphere down so that we have a side view, we'll be looking at something close to the accompanying illustration (adapted from Geschwind, 1991).

The shaded areas in this illustration indicate the general locations of those language functions involved in speaking and listening. We have come to know that these areas exist largely through the examination, in autopsies, of the brains of people who, in life, were known to have specific language disabilities. That is, we have tried to determine where language abilities for normal users must be by finding areas with specific damage in the brains of people who had identifiable language disabilities.

Figure 1 : Parts of the Brain



2.1 Broca's Area

The part shown as (1) in the illustration is technically described as the "anterior speech cortex" or, more usually, as Broca's area. Paul Broca, a French surgeon, reported in the 1860s that damage to this specific part of the brain was related to extreme difficulty in producing speech. It was noted that damage to the correspond-ing area on the right hemisphere had no such effect. This finding was first used to argue that language ability must be located in the left hemisphere and since then has been treated as an indication that Broca's area is crucially involved in the production of speech.

2.2 Wernicke's Area

The part shown as (2) in the illustration is the "posterior speech cortex," or Wernicke's area. Carl Wernicke was a German doctor who, in the 1870s, reported that damage to this part of the brain was found among patients who had speech comprehension difficulties. This finding confirmed the left hemisphere location of language ability and led to the view that Wernicke's area is part of the brain crucially involved in the understanding of speech.

2.3 The Motor Cortex and the Arcuate Fasciculus

The part shown as (3) in the illustration is the motor cortex, an area that generally controls movement of the muscles (for moving hands, feet, arms, etc.). Close to Broca's area is the part of the motor cortex that controls the articulatory muscles of the face, jaw, tongue and larynx. Evidence that this area is involved in the physical articulation of speech comes from work reported in the 1950s by two neurosurgeons, Penfield and Roberts (1959). These researchers found that, by applying small amounts of electrical current to specific areas of the brain, they could identify those areas where the electrical stimulation would interfere with normal speech production. The part shown as (4) in the illustration is a bundle of nerve fibers called the arcuate fasciculus. This was also one of Wernicke's discoveries and is now known to form a crucial connection between Wernicke's and Broca's areas.

3.The Localization View

Having identified these four components, it is tempting to conclude that specific aspects of language ability can be accorded specific locations in the brain. This is called the localization view and it has been used to suggest that the brain activity involved in hearing a word, understanding it, then saying it, would follow a definite pattern. The word is heard and comprehended via Wernicke's area. This signal is then transferred via the arcuate fasciculus to Broca's area where preparations are made to produce it. A signal is then sent to part of the motor cortex to physically articulate the word.

This is certainly an oversimplified version of what may actually take place, but it is consistent with much of what we understand about simple language processing in the brain. It is probably best to think of any proposal concerning processing pathways in the brain as some form of metaphor that may turn out to be inadequate once we learn more

about how the brain functions. The “pathway” metaphor seems quite appealing in an electronic age when we’re familiar with the process of sending signals through electrical circuits. In an earlier age, dominated more by mechanical technology, Sigmund Freud subtly employed a “steam engine” metaphor to account for aspects of the brain’s activity when he wrote of the effects of repression “building up pressure” to the point of “sudden release.” In an even earlier age, Aristotle’s metaphor was of the brain as a cold sponge that functioned to keep the blood cool.

In a sense, we are forced to use metaphors mainly because we cannot obtain direct physical evidence of linguistic processes in the brain. Because we have no direct access, we generally have to rely on what we can discover through indirect methods. Most of these methods involve attempts to work out how the system is working from clues picked up when the system has problems or malfunctions

4.Tongue Tips and Slips

We have all experienced difficulty, on some occasion(s), in getting brain and speech production to work together smoothly. (Some days are worse than others, of course.) Minor production difficulties of this sort may provide possible clues to how our linguistic knowledge is organized within the brain.

4.1.The tip of the Tongue Phenomenon

There is, for example, the tip of the tongue phenomenon in which we feel that some word is just eluding us, that we know the word, but it just won’t come to the surface. Studies of this phenomenon have shown that speakers generally have an accurate phonological outline of the word, can get the initial sound correct and mostly know the number of syllables in the word. This experience also mainly occurs with uncommon

words and names. It suggests that our “word-storage” system may be partially organ-ized on the basis of some phonological information and that some words in the store are more easily retrieved than others

When we make mistakes in this retrieval process, there are often strong phonological similarities between the target word we’re trying to say and the mistake we actually produce. For example, speakers produced secant, sextet and sexton when asked to name a particular type of navigational instrument (sextant). Other examples are fire distinguisher (for “extinguisher”) and transcendental medication (instead of “meditation”). Mistakes of this type are sometimes referred to as malapropisms after a character called Mrs. Malaprop (in a play by Sheridan) who consistently produced “near-misses” for words, with great comic effect. Another comic character in a TV program who was known for his malapropisms was Archie Bunker, who once suggested that We need a few laughs to break up the monogamy.

4.2Slips of the Tongue

Another type of speech error is commonly described as a slip of the tongue. This produces expressions such as make a long shory stort (instead of “make a long story short”), use the door to open the key, and a fifty-pound dog of bag food. Slips of this type are sometimes called spoonerisms after William Spooner, an Anglican clergyman at Oxford University, who was renowned for his tongue-slips. Most of the slips attributed to him involve the interchange of two initial sounds, as when he addressed a rural group as noble tons of soil, or described God as a shoving leopard to his flock, or in this complaint to a student who had been absent from classes: You have hissed all my mystery lectures.

Most everyday slips of the tongue, however, are not as entertaining. They are often simply the result of a sound being carried over from one word to the next, as in black bloxes (for “black boxes”), or a sound used in one word in anticipation of its occur-rence in the next word, as in noman numeral (for “roman numeral”), or a tup of tea (“cup”), or the most highly played player (“paid”). The last example is close to the reversal type of slip, illustrated by shu flots, which may not make you beel fetter if you’re suffering from a stick neff, and it’s always better to loop before you leak. The last two examples involve the interchange of word-final sounds and are much less com-mon than word-initial slips.

It has been argued that slips of this type are never random, that they never produce a phonologically unacceptable sequence, and that they indicate the existence of different stages in the articulation of linguistic expressions. Although the slips are mostly treated as errors of articulation, it has been suggested that they may result from “slips of the brain” as it tries to organize linguistic messages.

4.3 Slips of the Ear

One other type of slip may provide some clues to how the brain tries to make sense of the auditory signal it receives. These have been called slips of the ear and can result, for example, in our hearing great ape and wondering why someone should be looking for one in his office. (The speaker actually said “gray tape.”) A similar type of misunderstanding seems to be behind the child’s report that in Sunday school, everyone was singing about a bear called “Gladly” who was cross-eyed. The source of this slip turned out to be a line from a religious song that went Gladly the cross I’d bear. It may also be the case that some malapropisms (e.g. transcendental medication) originate as slips of the ear.

Some of these humorous examples of slips may give us a clue to the normal workings of the human brain as it copes with language. However, some problems with language production and comprehension are the result of much more serious disorders in brain function.

5.Aphasia

If you have experienced any of those "slips" on occasion, then you will have some hint of the types of experience that some people live with constantly. Those people suffer from different types of language disorders, generally described as "aphasia." Aphasia is defined as an impairment of language function due to localized brain damage that leads to difficulty in understanding and/or producing linguistic forms.

The most common cause of aphasia is a stroke (when a blood vessel in the brain is blocked or bursts), though traumatic head injuries from violence or an accident may have similar effects. Those effects can range from mild to severe reduction in the ability to use language. Someone who is aphasic often has interrelated language disorders, in that difficulties in understanding can lead to difficulties in production, for example. Consequently, the classification of different types of aphasia is usually based on the primary symptoms of someone having difficulties with language.

5.1 Broca's Aphasia

The serious language disorder known as Broca's aphasia (also called "motor aphasia") is characterized by a substantially reduced amount of speech, distorted articulation and slow, often effortful speech. What is said often consists almost entirely of lexical morphemes (e.g. nouns, verbs). The frequent omission of functional morphemes (e.g. articles, prepositions) and inflections (e.g. plural -s, past tense -ed) has led to the

characterization of this type of aphasic speech as “agrammatic.” In agram-matic speech, the grammatical markers are missing.

An example of speech produced by someone whose aphasia was not severe is the following answer to a question regarding what the speaker had for breakfast:

I eggs and eat and drink coffee breakfast

However, this type of disorder can be quite severe and result in speech with lots of hesitations and really long pauses (marked by …): my cheek … very annoyance … main is my shoulder … achin’ all round here. Some patients can also have lots of difficulty in articulating single words, as in this attempt to say “steamship”: a stail … you know what I mean … tal … stail. In Broca’s aphasia, comprehension is typically much better than production.

5.2 Wernicke’s Aphasia

The type of language disorder that results in difficulties in auditory comprehension is sometimes called “sensory aphasia,” but is more commonly known as Wernicke’s aphasia. Someone suffering from this disorder can actually produce very fluent speech which is, however, often difficult to make sense of. Very general terms are used, even in response to specific requests for information, as in this sample: I can’t talk all of the things I do, and part of the part I can go alright, but I can’t tell from the other people.

Difficulty in finding the correct word, sometimes referred to as anomia, also happens in Wernicke’s aphasia. To overcome their word-finding difficulties, speakers use different strategies such as trying to describe objects or talking about their purpose, as in the thing to put cigarettes in (for “ashtray”). In the following example (from Lesser & Milroy, 1993),

the speaker tries a range of strategies when he can't come up with the word ("kite") for an object in a picture.

> it's blowing, on the right, and er there's four letters in it, and I think it begins with a C – goes – when you start it then goes right up in the air – I would I would have to keep racking my brain how I would spell that word – that flies, that that doesn't fly, you pull it round, it goes up in the air

5.3 Conduction Aphasia

One other, much less common, type of aphasia has been associated with damage to the arcuate fasciculus and is called conduction aphasia. Individuals suffering from this disorder sometimes mispronounce words, but typically do not have articulation prob-lems. They are fluent, but may have disrupted rhythm because of pauses and hesi-tations. Comprehension of spoken words is normally good. However, the task of repeating a word or phrase (spoken by someone else) creates major difficulty, with forms such as vaysse and fosh being reported as attempted repetitions of the words "base" and "wash." What the speaker hears and understands can't be transferred very successfully to the speech production area.

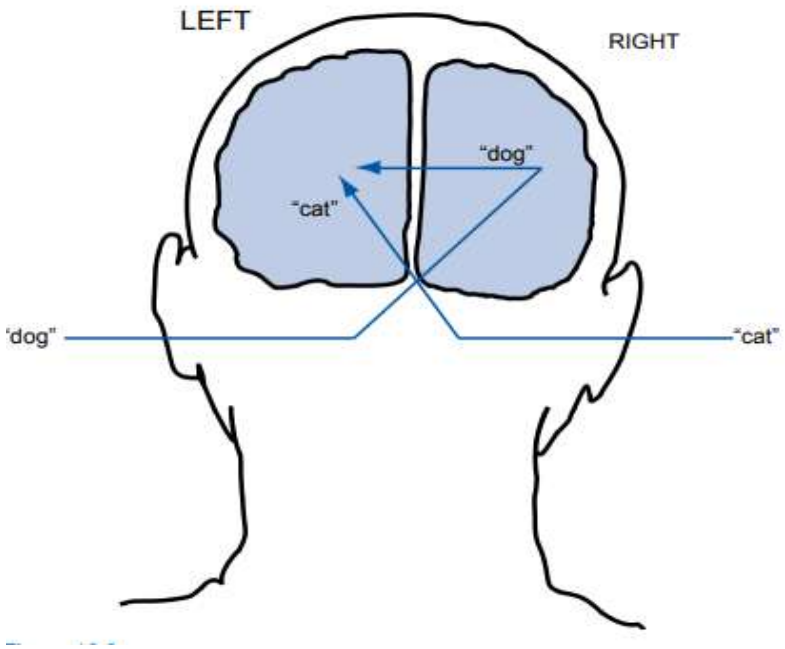
It should be emphasized that many of these symptoms (e.g. word-finding diffi-culty) can occur in all types of aphasia. They can also occur in more general disorders resulting from brain disease, as in dementia and Alzheimer's disease. Difficulties in speaking can also be accompanied by difficulties in writing. Impairment of auditory comprehension tends to be accompanied by reading difficul-ties. Language disorders of the type we have described are almost always the result of injury to the left hemisphere. This left hemisphere dominance for language has also been demonstrated by another approach to the investigation of language and the brain.

6. Dichotic Listening

An experimental technique that has demonstrated a left hemisphere dominance for syllable and word processing is called the dichotic listening test. This technique uses the generally established fact that anything experienced on the right-hand side of the body is processed in the left hemisphere, and anything on the left side is processed in the right hemisphere. As illustrated in Flaherty's (2004) description at the beginning of this chapter, a stroke in the right hemisphere resulted in paralysis of the left leg. So, a basic assumption would be that a signal coming in the right ear will go to the left hemisphere and a signal coming in the left ear will go to the right hemisphere.

With this information, an experiment is possible in which a subject sits with a set of earphones on and is given two different sound signals simultaneously, one through each earphone. For example, through one earphone comes the syllable ga or the word dog, and through the other earphone at exactly the same time comes da or cat. When asked to say what was heard, the subject more often correctly identifies the sound that came via the right ear. This is known as the right ear advantage for linguistic sounds. The process involved is best understood with the help of the accompanying illustra-tion. (You're looking at the back of this head.).

Figure 2 : Dichotic listening process



In this process, the language signal received through the left ear is first sent to the right hemisphere and then has to be sent to the left hemisphere (language center) for processing. This non-direct route takes longer than a linguistic signal received through the right ear and going directly to the left hemisphere. First signal to get processed wins.

The right hemisphere appears to have primary responsibility for processing a lot of other incoming signals that are non-linguistic. In the dichotic listening test, it can be shown that non-verbal sounds (e.g. music, coughs, traffic noises, birds singing) are recognized more often via the left ear, meaning they are processed faster via the right hemisphere. So, among the specializations of the human brain, the right hemisphere is first choice for non-language sounds (among other things) and the left hemisphere specializes in language sounds (among other things too)

These specializations may actually have more to do with the type of processing, rather than the type of material, that is handled best by each of the two hemispheres. The essential distinction seems to be between analytic processing, such as recognizing the smaller details of sounds, words and phrase structures in rapid sequence, done with the "left brain," and holistic processing, such as identifying more general structures in language and experience, done with the "right brain."

7.The Critical Period

The apparent specialization of the left hemisphere for language is usually described in terms of lateral dominance or lateralization (one-sidedness). Since the human child does not emerge from the womb as a fully articulate language-user, it is generally thought that the lateralization process begins in early childhood. It coincides with the period during which language acquisition takes place. During childhood, there is a period when the human brain is most ready to receive input and learn a particular language. This is sometimes called the "sensitive period" for language acquisition, but is more generally known as the critical period.

Though some think it may start earlier, the general view is that the critical period for first language acquisition lasts from birth until puberty. If a child does not acquire language during this period, for any one of a number of reasons, then he or she will find it almost impossible to learn language later on. In one unfortunate but well-documented case, we have gained some insight into what happens when the critical period passes without adequate linguistic input.

8.Suggested questions

- What is a more common name for the posterior speech cortex?
- Is the use of “fire distinguisher” instead of “fire extinguisher” a spoonerism or a malapropism?
- What is aphasia?
- Which type of aphasia is characterized by speech like this: speech … two times … read … wr … ripe, er, rike, er, write … ?
- What happens in a dichotic listening test?
- What is the critical period?

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7. Computational Linguistics

1. What is Computational Linguistics (CL) ?

CL refers to the scientific study of language from a computational perspective. The term “Computational Linguistics" goes back to the 1950’s. It was coined by David Hays In the United States, He was a founding member of both: Association for Computational Linguistics (ACL) and International Committee on Computational Linguistics (ICCL). Computers have been automatically used to translate texts from foreign languages, particularly Russian scientific journals into English.

Computational Linguistics is the application of computer science to the analysis, synthesis and comprehension of written and spoken language. It is considered as a branch of computer science as well as of linguistics. However; it should be cooperation between computer science and linguistics. (McGuigan, 2006).

Computational linguistics is a subfield of linguistics and computer science that is concerned with the interactions of human language and computers. (Fromkin & al., 2011).

The complexities of human language and the question over how to bring it into the working sphere of system form the core of computational linguistics. It’s an emerging field of interest among the academicians and research scholars.

Computational Linguist’s are interested in providing computational models for various kinds of Linguistic phenomena. The prime goal of Computational Linguistics is to construct computer programs for automatic processing of Text or Speech in natural language

A word on Terminology :

- *Computational Linguistics (CL)*
  - … you're a linguist!
  - … you use computers to study language
- *Natural Language Processing (NLP)*
  - … you're a computer scientist!
  - … you work on applications involving language.

    (both are in fact synonyms)

    - The term *Language Engineering* is also used as synonym

2. Computational Linguistics VS. Natural Language Processing

Computational linguistics and natural language processing are similar concepts, as both fields require formal training in computer science, linguistics and machine learning (ML). Both use the same tools, such as ML and AI, to accomplish their goals and many NLP tasks need an understanding or interpretation of language.

Where NLP deals with the ability of a computer program to understand human language as it's spoken and written and to provide sentiment analysis, CL focuses on the computational description of languages as a system. Computational linguistics also leans more toward linguistics and answering linguistic questions with computational tools; NLP, on the other hand, involves the application of processing language.

NLP plays an important role in creating language technologies, including chatbots, speech recognition systems and virtual assistants, such as Siri, Alexa and Cortana.

Meanwhile, CL lends its expertise to topics such as preserving languages, analyzing historical documents and building dialogue systems, such as Google Translate.

3. Motivations of Computational Linguistics

There are three primary motivations:

3.1 Linguistics Motivation:

It came from the thinking that adopting computational aims would cause important progress in linguistics. It opts to gain a better understanding of how humans communicate by using Natural Language.

As humans, we process language very easily many times a day in our normal communications with each-other. Hence, in our terminology, we are able to compute a meaning for a given utterance (since we understand each-other), and to compute an utterance for a given meaning (since we can express our thoughts). We want to know how humans perform this task, in order to further our understanding of natural language. In this sense, computational linguistics is part of linguistics and cognitive science

3.2 Technological Motivation

It came from the desire to produce a technology to serve the practical needs for translation, information extraction, grammar and spellchecking, etc. thus, it constructs intelligent computer systems, such as Natural Language Interface (NLI) to databases, automatic machine translation systems, text analysis systems, speech understanding systems, and computer- aided instructions systems and goes on.

Technological motivation is of a more practical nature. If we know how to compute this relation between form and meaning, then we can write computer programs which

perform this computation. Such computer programs will make a broad set of interesting natural language applications possible: spoken information systems, machine translation systems, natural language interfaces, and many others. One of the results of the NWO Priority Programme on Language and Speech Technology is a spoken dialogue system for public transport information. The system is accessible by telephone. A caller can request (in ordinary Dutch) time-table information for all Dutch train connections. The system operates automatically: if all goes well, no human interaction is required. In such a system the computer analyses the utterances of a user in order to find out what connection is being requested. Furthermore, natural language synthesis is used to produce further questions (for instance if not all information is available for a database lookup yet), and to produce the resulting connection, once the database has been consulted. From this perspective, computational linguistics is an engineering science (the term human language technology is sometimes used for this type of work).

3.3 Theoretical Motivation

Here, we are interested in the computation of the relation between form and meaning for its own sake. This computation has interesting formal properties and relates in interesting ways to theoretical aspects of the theory of computing in general. Construed in this way, computational linguistics is closely related to mathematical linguistics and theoretical computer science.

4. Applications of Computational Linguistics

Applications of CL typically include the following:

- ✓ **Machine translation.** This is the process of using AI to translate one human language to another.

- ✓ **Application clustering.** This is the process of turning multiple computer servers into a cluster.
- ✓ **Sentiment analysis.** Sentiment analysis is an important approach to NLP that identifies the emotional tone behind a body of text.
- ✓ **Chatbots.** These software or computer programs simulate human conversation or *chatter* through text or voice interactions.
- ✓ **Information extraction.** This is the creation of knowledge from structured and unstructured text.
- ✓ **Natural language interfaces.** These are computer-human interfaces where words, phrases or clauses act as user interface controls.
- ✓ **Content filtering.** This process blocks various language-based web content from reaching users.
- ✓ **Text mining.** Text mining is the process of extracting useful information from massive amounts of unstructured textual data. Tokenization, part-of-speech tagging -- named entity recognition and sentiment analysis -- are used to accomplish this process

5. Approaches and Methods of Computational Linguistics

There have been many different approaches and methods of computational linguistics since its beginning in the 1950s. Examples of some CL approaches include the following:

- ✓ **The corpus-based approach**, which is based on the language as it's practically used.

- ✓ **The comprehension approach**, which enables the NLP engine to interpret naturally written commands in a simple rule-governed environment.
- ✓ **The developmental approach**, which adopts the language acquisition strategy of a child by acquiring language over time. The developmental process has a statistical approach to studying language and doesn't take grammatical structure into account.
- ✓ **The structural approach**, which takes a theoretical approach to the structure of a language. This approach uses large samples of a language run through computational models to gain a better understanding of the underlying language structures.
- ✓ **The production approach** focuses on a CL model to produce text. This has been done in a number of ways, including the construction of algorithms that produce text based on example texts from humans. This approach can be broken down into the following two approaches:
- ✓ **text-based interactive approach** uses text from a human to generate a response by an algorithm. A computer can recognize different patterns and reply based on user input and specified keywords.
- ✓ **The speech-based interactive approach** works similarly to the text-based approach, but user input is made through speech recognition. The user's speech input is recognized as sound waves and is interpreted as patterns by the CL system.

6. Levels of Language and Areas of Computational Linguistic Research

Computational linguistic research is correlated with traditional levels of language that are commonly accepted in general linguistics. These levels are:

- Phonetics/phonology,
- Morphology,
- Syntax,
- Semantics,
- Pragmatics, and
- Discourse.

At the phonetic level, we analyze the phones (sounds), from two points of view: 1) as a physical phenomenon; here we are interested in its spectrum and other physical characteristics, 2) as an articulatory phenomenon, i.e., the position of the pronunciation organs that generate the specific sound (namely, the sound with specific physical characteristics). At the phonological level, we interpret these physical or articulatory features as phonological characteristics and their values. For example, the feature "vibration of the vocal cords" with the values "vibrating" or "not vibrating"; or the feature "mode of the obstacle" with the values like "explosive", "sibilant", "affricate", etc. By phonological features we mean the features that depend on the given phonetic system, for example, long vs. short vowels are different phonemes in English, but they are not in many other languages, for example, Spanish, Russian, etc. So, the vowel duration is phonological feature in English and it is not in the mentioned languages

The morphological level deals with word structure and grammar categories that exist in languages (or in the given language) and the expression of these grammar categories within words.

The syntactic level studies relations between words in sentences and functions of words in a sentence, like subject, direct object, etc.

The semantic level is related to the concept of meaning, its representation and description. Generally speaking, the meaning can be found at any other level, see below the discussion about the limits of the levels.

At the pragmatic level, the relationship between the meaning of the text and the real world is considered. For example, in indirect speech acts, when the phrase “Can you pass me the salt?” in fact is a polite mode of asking the salt, and it is not a question about a physical ability to pick it up.

And finally, the discourse level is related to analysis of the relationship between sentences in discourse. For example, at this level we can find the phenomenon of anaphora, when the task is to find out to which possible antecedent (noun) a pronoun refers; or phenomenon of ellipsis, when some substructure is omitted but can be restored by reader on the basis of the previous context.

Note that there are no strict criteria for level distinction: these levels are more like focus of research. That is why there are many intersections between levels, for example, the meaning, being part of the semantic level, can be observed at the syntactic or morphological levels, but still, if we focus on morphemes or syntactic constructions, though they have meaning, we will not consider them as belonging to the semantic level. If we consider the interpretation of syntactic relations or lexical meaning, then we deal with semantics.

Now, let us have a look at the computer side of computational linguistics. Among the most widely represented modern directions of research in computational linguistics we can mention:

1. Speech recognition and synthesis,
2. Morphological analysis of a variety of languages (say, morphological analysis in English is rather simple, but there are languages with much more complex morphological structure),
3. Grammar formalisms that allows for development of parsing programs,
4. Interpretation of syntactic relations as semantic roles,
5. Development of specialized lexical resources (say, WordNet or FrameNet),
6. Word sense disambiguation,
7. Automatic anaphora resolution, among others.

The correspondence between these directions of research and traditional linguistic levels is pretty obvious. For example, the research directions 4, 5, and 6 are attempts to invoke semantics in text analysis.

It should be mentioned that it is useful to distinguish between methods and areas of research. The areas of research are related to the mentioned language levels or to specific applications, see below. The methods of research are related to particular methods that are used. The tendency in modern computational linguistics as far as methods are concerned is to apply machine learning techniques accompanied with processing of huge amount of data, available usually in Internet. Note that each research area can have additional standard resources specific for this area.

Another important dichotomy is related to distinction of procedural and declarative knowledge, which in case of computational linguistics corresponds to the distinction between development of algorithms (or methods) and development of language resources (or data).

From the list of the seven mentioned research directions, number 5 (development of specialized lexical resources) represents a direct development of resources. The majority of other research directions are dedicated to methods. In case when methods are based on linguistic resources, we call these methods knowledge rich. If developed algorithms do not use any linguistic resource then we call them knowledge poor.

Note that purely statistic algorithms are knowledge poor when they use raw data (raw corpora). If a statistic algorithm uses marked data, then it uses knowledge coded into a corpus, and, thus, it becomes knowledge rich. Note that all these distinctions are basically tendencies, i.e., usually there is no clear representative of each member of a given class.

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8. Bio-linguistics

Biolinguistics is the study of the biology and evolution of language. It is a highly interdisciplinary area of research which includes biologists, neuroscientists, psychologists, mathematicians, and others.

Linguists have recently become so interested in the comprehensive scheme of language that embraces natural sciences. They seek to find a framework by which we can comprehend the fundamentals of the faculty of language. In other words, biolinguistics is the discipline that studies human languages from the viewpoint of natural science.

There is much interest today among biologists as well as linguists in the relationship between the development of language and the evolutionary development of the human species.

The biolinguistic perspective began to take shape in the mid-twentieth century.[1] Eric Lenneberg's *Biological Foundations of Language* is one of the important documents in the area of biolinguistics. In 1974, the first Biolinguistic conference was organized bringing together evolutionary biologists, neuroscientists, linguists, and others interested in the development of language in the individual, its origins, and evolution.

In trying to understand the development of language, scholars past and present have debated the role played by the vocal tract and the ear. For example, it has been suggested that speech could not have developed in nonhuman primates because their vocal tracts were anatomically incapable of producing a large enough inventory of speech sounds. According to this hypothesis, the development of language is linked to the evolutionary development of the speech production and perception apparatus. This, of course, would be accompanied by changes in the brain and the nervous system toward greater complexity.

Such a view implies that the languages of our human ancestors of millions of years ago may have been syntactically and phonologically simpler than any language.

One evolutionary step must have resulted in the development of a vocal tract capable of producing the wide variety of sounds of human language, as well as the mechanism for perceiving and distinguishing them.

A major step in the development of language most probably relates to evolutionary changes in the brain. The linguist Noam Chomsky expresses this view by claiming that it could be that when the brain reached a certain level of complexity, it simply automatically had certain properties because that's what happens when you pack 1010 neurons into something the size of a basketball[1]

The emergence of the nervous system, of the brain, of the human brain and of the language faculty added huge amounts of additional special information to feed into the fundamental equations of physics, and caused the subsequent emergence of disciplines that address these areas of complexity (neurobiology, psychology, linguistics, and other cognitive sciences). As Gell-Mann suggests, "the enterprise of science involves investigating those laws at all levels, while also working, from the top down and from the bottom up, to build staircases between them" (Gell-Mann 1994, 112). Biolinguistics has both missions: investigating the "additional information" of language structure and, at the same time, contributing to the building of staircases in search of unification and principled explanation.

[1] 3Chomsky, N., in Searchinger, G. 1994. The human language series, program 3. Video. New York: Equinox Film/Ways of Knowing, Inc.

From this point of view, it seems clear then that languages, these things that we call, for example, Russian and French, are not improper objects of study for this discipline but, on the contrary, are in fact its proper and main objects of study. Asking biolinguistics to study the human faculty of language directly while ignoring languages would be akin to asking biology to study life without studying living organisms. Obviously this would be impossible and absurd. But, curiously, the prospect does not seem as impossible and absurd to those of us in the domain of language. It could be said in principle that the biological study of language should be conducted by analysing the brain and the genes and that the study of Russian or French is a matter to be kept separate. However, this is a common mistake that the present contribution seeks to avoid. In the following we provide a number of references for those who would like to pursue particular topics in more depth.

- **Structure of the language faculty**: Several works discuss the properties of the architecture and the operations of the language faculty from a biolinguistic perspective (Chomsky 1995, 2005, 2008, 2013, 2015a,b, Jenkins 2000, 2004, Hauser et al. 2002, Di Sciullo et al. 2010, Berwick et al. 2013, Boeckx & Grohmann 2013, Piattelli-Palmarini & Vitiello 2015, Berwick & Chomsky 2016, among others).
- **Animal communication:** Biolinguistic research also covers experimental studies aiming to understand what differentiates human language from animal communication (Fitch & Hauser 2004, Jarvis 2004, Friederici 2009, Fitch 2010, Berwick et al. 2012, Bolhuis & Everaert 2013, among others).
- **Neuroscience**: Results from neuroscience point to the special properties of the human brain for language (Embick et al. 2000, Moro et al. 2001, Friedrich &

Friederici 2009, 2013, Friederici et al. 2011, Albertini et al. 2012, Blanco-Elorrieta & Pylkkänen 2015, Lewis et al. 2015, Magrassi et al. 2015, Zaccarella & Friederici 2015, Xiao et al. 2016, among others).

- **The genetic basis of normal and impaired language development**: Studies on genetically based language impairments also fall into the realm of the biology of language (Wexler 2003, Ross & Bever 2004, Bishop et al. 2005, Hancock & Bever 2013, among others). Models of language acquisition can be tested in normally developing children and in children with language disorders, as in the case of the KE family, discussed below, as well as in children with so-called specific language impairments (Bishop et al. 1995, Wexler 2003, Bishop & Snowling 2004, Di Sciullo & Agüero-Bautista 2008, Bishop 2015, Männel et al. 2015).
- **Language variation**: Language variation is another important area of biolinguistic research. While the properties of the language faculty are stable, variation is pervasive crosslinguistically. This is not surprising, given that language is a biological object and variation is a constant in the biological world (Lewontin 1974, 2000, Cavalli-Sforza & Feldman 1981, Hallgrimsson & Hall 2005, among others). The principles and parameters model (Chomsky 1981) gave rise to a systematic approach to language variation (Borer 1984, Rizzi 2000, 2009, Cinque & Kayne 2005, Biberauer 2008, Cinque & Rizzi 2010, among others). According to this model, linguistic variation arises from language acquisition and languages in contact, and follows from the setting of a limited set of options left open in UG.

- **Language phylogeny**: More recent models of parametric syntax opened new avenues for the understanding of language phylogeny (Bever 1981, Longobardi & Guardiano 2011, Longobardi et al. 2013). Yet other works address the question of why parameters emerge and why resetting of parameters occurs, as well astake into account the role of factors external to the language faculty in language variation (Longobardi & Roberts 2010, Di Sciullo 2011, 2012a, Di Sciullo & Somesfalean 2013, 2015, Biberauer et al. 2014). Some inferences about language evolution can be made on the basis of comparative studies with other species on both the anatomical level (Sherwood et al. 2003, Fitch 2010, among others) and the genetic level (Sun & Walsh 2006).
- **Language and dynamic systems**: While the poverty of the stimulus (Chomsky 2013) and the critical period (Stromswold 2007, 2008, 2010) point to the biological nature of language, theoretical approaches to language development stemming from works on dynamic systems and population genetics (Nowak et al. 2001, Niyogi 2006, Niyogi & Berwick 2009, among others) opened new horizons for the study of language variation. Other studies address interesting issues related to deterministic/probabilistic theories of language learning (Yang 2002, 2004a,b, 2008, 2011, 2013, 2015)

The topics and references provided above are by no means exhaustive. Nevertheless, they are indicative of the liveliness of biolinguistic research.

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9. Forensic Linguistics

1. What is Forensic Linguistics?

Forensic linguistics is an interdisciplinary field of applied/descriptive linguistics and an emerging sub-discipline of forensic science. Forensic linguistics analyzes and measures the language with respect to "crime, judicial procedures or disputes in law" (Danielewicz-Betz, 2012). It is believed and proved that Forensic linguistics can prove beneficial for the investigation of crimes, analysis of the judicial procedures, and particularly disputes in law. It can also be used for the analysis of courtroom discourse and interpret and translate the legal documents for their readability and comprehensibility. Moreover, the police cautions issued to the suspects can also be analyzed for their comprehensibility and the authorship attribution can be established for written or spoken texts. It, therefore, works as the interface between language, crime, and the law

Although the results obtained after forensic linguistics are not as much accurate as of the DNA results, yet when the legal complications are explained by the expertise of descriptive and applied linguists, forensic linguistics proves beneficial to disclose the hidden information and lead to a better verdict in legal cases. However, for the expert use of forensic linguistics, the analysts need to be familiar with "the broader application of linguistics as a social science, including phonetics and phonology, morphology, syntax, and semantics, discourse analysis, pragmatics, psycholinguistics, neurolinguistics, sociolinguistics, dialectology, computational linguistics, and corpus linguistics" (Danielewicz-Betz, 2012). The forensic linguist is used for the application of linguistic knowledge and techniques to the language of legal cases and proceedings (Figure 1). It is

also used to solve the private disputes arising between the parties which may result in legal action.

When Forensic Linguistics is referred to as an *application of linguistics* or, more concisely, an *applied* linguistic science, the word *applied* is not necessarily being used in the same sense as, for example, in the phrase *applied* statistics, where what is being applied is a theory underpinning a particular science to the practice of that science. Forensic Linguistics is, rather, the application of linguistic knowledge to a particular social setting, namely the legal *forum* (from which the word *forensic* is derived). In its broadest sense we may say that Forensic Linguistics is the interface between language, crime and law, where *law* includes law enforcement, judicial matters, legislation, disputes or proceedings in law, and even disputes which only potentially involve some infraction of the law or some necessity to seek a legal remedy. Given the centrality of the use of language to life in general and the law in particular, it is perhaps somewhat surprising that Forensic Linguistics is a relative newcomer to the arena, whereas other disciplines, such as fingerprint identification and shoeprint analysis, are much older, having a well-established presence in judicial processes.

The application of linguistic methods to legal questions is only one sense in which Forensic Linguistics is an application of a science, in that various linguistic theories may be applied to the analysis of the language samples in an inquiry. Thus, the forensic linguist may quote observations from research undertaken in fields as diverse as language and memory studies, Conversation Analysis, Discourse Analysis, theory of grammar, Cognitive Linguistics, Speech Act Theory, *etc*. The reason for this reliance on a broad spectrum of linguistic fields is understandable: the data the linguist receives for analysis

may require that something is said about how the average person remembers language, how conversations are constructed, the kinds of moves speakers or writers make in the course of a conversation or a written text, or they may need to explain to a court some aspects of phrase or sentence structure.

In summary, we can say that the forensic linguist applies linguistic knowledge and techniques to the language implicated in (i) legal cases or proceedings or (ii) private disputes between parties which may at a later stage result in legal action of some kind being taken.

2 . Applications of Forensic Linguistics

Applications of **forensic linguistics** include voice identification, interpretation of expressed meaning in laws and legal writings, analysis of discourse in legal settings, interpretation of intended meaning in oral and written statements (e.g., confessions), authorship identification, the language of the law (e.g., plain language), analysis of courtroom language used by trial participants (i.e., judges, lawyers, and witnesses), trademark law, and interpretation and translation when more than one language must be used in a legal context.[2]

On some occasions the linguist is asked to provide investigative assistance or expert evidence for use in Court. Within the linguistics literature there has been considerable focus on the rules for admission of authorship identification evidence to criminal prosecutions, but the role of the linguist in providing evidence is broader than this. Much of the evidence provided by linguists does not involve authorship identification,

[2] Gerald R. McMenamin, *Forensic Linguistics: Advances in Forensic Stylistics*. CRC Press, 2002

and the assistance a linguist may offer is not restricted to only providing evidence for criminal prosecution. Investigative linguists can be considered that portion of forensic linguistics which provides advice and opinions for investigative and evidential purposes." (Malcolm Coulhard, Tim Grant, and Krzystof Kredens, "Forensic Linguistics.[3]

Forensic linguists assume that every native speaker has their own special and individual language version, called idiolect, which is very difficult to ‘disguise’. Idiolects can also help with identifying persons, no matter how they can distort their voice. Everybody has their typical vocabulary, frequent use of grammar and of certain grammatical forms and dialect. It is possible to identify persons by using a comparative analysis. Forensic linguists work in three key application areas:

– interpretation of written legal texts,

– understanding language use in forensic and legal proceedings,

– linguistic analysis of the evidence.

A forensic linguist is able to achieve that someone is acquitted after the linguistic analysis of the evidence. A forensic linguist can be asked to provide an expert’s report in a wide variety of cases, including the abuse of the legal process, to identify the author of hate mails, correspondence relating to Internet child pornography, to analyse an arsonist’s diary, cell phone texts and compare texts recorded during the interrogation of the suspect.

[3] *The SAGE Handbook of Sociolinguistics*, ed. by Ruth Wodak, Barbara Johnstone, and Paul Kerswill. SAGE, 2011

Forensic texts cover a wide range of legal language texts. Any written or oral statements of any legal or criminal nature can be examined (e.g. acts, wills, judgments and writs, interrogation reports, the judge's instructions, police witness statements). The most important written texts include the following:

- ✓ **Emergency call**

It is never a calm, thoughtful phone call. It makes forensic linguistic analysis difficult that the signs of hesitation, incomplete or too short answers are typical both of those who are really in an emergency and those who just want to deceive the authorities.

- ✓ **Threatening letters, blackmail**

In the case of threatening and blackmailing letters it can be extremely difficult for forensic linguists to perform a reliable and very quick analysis.

- ✓ **Letters of suicide**

Experience has shown that a suicidal person never writes a letter longer than 300 words. Irrelevant information is never included. In almost all cases the letter is addressed to a specific person, describing the relationship between them. The writer of the letter wants that person to feel guilty and to make him or her suffer.

- ✓ **Death row statements**

Death row statements are characterized by the fact that the author does not admit the crime. He or she asserts his or her innocence, mentions dishonourable witnesses, he or she blames the authorities for having sentenced him/her to death. The language evidence may be an oral and a written one. In the first case we are speaking about a speaker, in the

second case about a drafter. The purpose of forensic analysis can be: – speaker's profiling, – draftsman's profiling, – speaker's identification, – draftsman's identification.

3. Forensic Linguistics Areas of Investigation

Forensic linguistics can usefully be divided into three distinct areas of investigation:

a) ***The language of written legal texts***: here linguists are interested in both the arcane vocabulary, complicated grammar and infrequent punctuation which typifies many legal texts and the consequent problems lay readers have with these texts (see Tiersma 1999; Stygall 2010);

b) **The spoken language of the legal process:** here linguists examine the nature of police interviews with suspects, the specialised rules which govern interaction in courts of law, the problems created for vulnerable witnesses and the difficulties experienced by those who do not speak the language of the court, (see Haworth 2010; Heffer 2005; Aldridge 2010; Hale 2010)

c) **The linguist as expert witness**: here linguists express opinions on the confusability of rival trademarks, on the authorship of documents, on the meaning of words and expressions and on the place of origin of asylum seekers to name a few (see Shuy 2002; Coulthard and Johnson 2007, chapter 6; Eades 2010).

As is evident forensic linguistics covers a very wide area and so for the rest of this article I will leave on one side all work where linguists are simply describing aspects of written and spoken legal language and I concentrate on that subset of research and report writing where s/he is trying to use description to act upon and possibly change the world. Even then I only have space for a few examples.

4.The Main Tasks of Forensic Linguistics

This is a very complex, interdisciplinary field, related to a wide variety of applied linguistic tasks that contribute to the success of a criminal investigation. Just a few examples:

- processing evidence,
- author identification,
- finding the authenticity of documents,
- identification of the linguistic profiling of offenders,
- stylistic analysis of farewell letters, e-mails,
- identification of the mobile-author texts,
- analysis of harassing letters,
- analysis of verbal and written blackmail messages,
- author identification of hate texts,
- evidence of plagiarism,
- voice identification of threatening messages,
- discourse analysis,
- investigation of language offenses,
- author identification of documents on counterfeiting,
- author identification of fraud matters,
- author identification of insurance documents,
- preparation of linguist special reports.

Of course, the list above may not be complete. It is certain that in the future this list will be expanded.

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10. Clinical Linguistics

1. What is Clinical Linguistics ?

Clinical linguistics is the branch of linguistics that applies linguistic concepts and theories to the study of language disorders. Clinical linguistics gradually emerged as a coherent sub-discipline of applied linguistics.It emerged in large measure as a result of the pioneering work of David Crystal. Linguistics known to play a major role in the study of communication disorders. Some areas of clinical linguistics include clinical phonetics, clinical phonology, clinical pragmatics.

As its name suggests, clinical linguistics is a dual-facing discipline. Although the conceptual roots of this field are in linguistics, its domain of application is the vast array of clinical disorders which may compromise the use and understanding of language. Both dimensions of clinical linguistics can be addressed through an examination of specific linguistic deficits in individuals with neurodevelopmental disorders, craniofacial anomalies, adult-onset neurological impairments and psychiatric disorders, and neurodegenerative disorders. Clinical linguists are interested in the full range of linguistic deficits in these conditions, including phonetic deficits of children with cleft lip and palate, morphosyntactic errors in children with specific language impairment, and pragmatic language impairments in adults with schizophrenia.

Like many applied disciplines in linguistics, clinical linguistics sits at the intersection of a number of areas. The relationship of clinical linguistics to the study of communication disorders and to speech-language pathology (speech and language therapy in the UK), are two particularly important points of intersection. Speech-language pathology is the area of clinical practice that assesses and treats children and adults with communication disorders.

All language disorders restrict an individual's ability to *communicate* freely with others in a range of contexts and settings. So language disorders are first and foremost communication disorders. To understand language disorders, it is useful to think of them in terms of points of breakdown on a communication cycle which tracks the progress of a linguistic utterance from its conception in the mind of a speaker to its comprehension by a hearer. This cycle permits the introduction of a number of important distinctions in language pathology, such as the distinction between a receptive and an expressive language disorder, and between a developmental and an acquired language disorder. The cycle is also a useful model with which to conceptualise a range of communication disorders other than language disorders. These other disorders, which include hearing, voice and fluency disorders, are also relevant to clinical linguistics.

Clinical linguistics draws on the conceptual resources of the full range of linguistic disciplines to describe and explain language disorders. These disciplines include phonetics, phonology, morphology, syntax, semantics, pragmatics and discourse. Each of these linguistic disciplines contributes concepts and theories which can shed light on the nature of language disorder. A wide range of tools and approaches are used by clinical linguists and speech-language pathologists to assess, diagnose and treat language disorders. They include the use of standardized and norm-referenced tests, communication checklists and profiles (some administered by clinicians, others by parents, teachers and carers), and qualitative methods such as conversation analysis and discourse analysis.

Theory and Practice: the relationship between linguistic theory and description and practical clinical concerns are mutually influential. Any clinical linguistic analysis of

clinical data will invariably raise issues that have potential theoretical implications for language in general.

2. Clinical Relevance of Linguistics

The central focus of Clinical Linguistics is the application of the principles and methodsof linguistics and phonetics to communication impairment in children and adults. Clinical linguistics plays a key role in the description, analysis and remediation of communication impairment. The study of linguistic aspects of communication development and disorder is also of relevance to linguistic theory and our understanding of language more generally.

Crystal (1984) and Grunwell (1985b, 1993) argues that the careful and systematic description of the client's communication behavior provides a means of assessing that behavior in relation to linguistic and developmental areas. They suggest that clinical linguistic analysis can reveal the systematic and communicative status of the client's linguistic patterns in their own, regardless of considerations of target norms. They further suggest that the descriptive and analytical processes should aid differential diagnosis and categorization of the client's behaviors according to different identifiable types of linguistic deficit and disorder. The information derived from analysis should also facilitate the formulation of specific treatment aims and strategies. Careful analysis carried out at different points during the assessment and management process allows identification and evaluation of changes in the client's communicative behavior over time. Thus, clinical linguistic analysis and description have an important role and developing role both inside and outside the treatment room.

1- According to Jacobson (1964), the pathology of language, far from being a random disturbance, obeys a set of rules; the rules underlying the regression of language cannot be elicited without the consistent use of linguistic techniques and methodology. An explicit knowledge of the nature of language, its grammar and its functioning would be helpful in providing adequate therapies to individuals who are suffering from various kinds of language disorders. (Ex: Brain damage due to an accident or stroke can lead to partial or complete loss of the ability to use of language. When the loss is partial, the aspect of language that gets affected might differ from one person to another person. Linguistic analysis helps to find out which component of language is affected.

3. Speech disorders can also affect the control of grammar in various ways. Study of aphasia requires the structural analysis of language. The symptoms exhibited in aphasia like a grammatism can be better understood with a thorough knowledge of linguistics. Its found that in many of these instances, the defect can be very much reduced through therapeutic intervention. But a fairly good explicit knowledge of grammar of the concerned language is necessary not only for providing such a therapeutic intervention, but also for establishing the exact type of grammatical defect that has affected the speech of a particular individual. The process of diagnosis by the linguistic analysis of disordered speech by suitably devised tests may show which abilities have been impaired.

4. Patients with congenital hearing impairment show various language deficits like phonological deficits, syntactic errors, and semantic deficits. Autistics may exhibit pragmatic deficits. For the purpose of assessment of any language deficits in such cases, various tests are required, the formulation of which

demands good knowledge inlinguistics

5. Developmental linguistics has been the basis for development of various language tests for the diagnosis of child language disorder. Ex: the Linguistic Profile Test that tests for phonology, syntax and semantics compares the language performance of children with that of the normative established to get the appropriate language age of the child tested.
6. For post therapy evaluation, concept of linguistics stands crucial. Ex: in post treatment evaluation of syntax the goal taken may be to work on the case markers and the appropriate usage may be evaluated based on linguistic knowledge.
7. Transcription, which is a part of linguistics, is used in the assessment of various speech and language disorders. Whenever a speech sample is obtained from a client for linguistic study (whether spontaneous speech, reading aloud, conversation, etc…) the first step should be to make a good transcription. This transcription can be referred to again and again and the same transcription can serve as the basis for a prosodic, grammatical, semantic, sociolinguistic or other analysis.
8. Linguistics is the basis for many diagnostic tests in speech and language. Test of articulation, like Kannada articulation test, Malayalam articulation Test, etc… which tests for articulation of various phonemes based on phonetics. Tests for diagnosing learning disability, like Early Reading Skills, tests for Phoneme-Grapheme correspondence, screening test for acquisition of syntax in Kannada, tests for syntax. Test of Emergent Expressive Morphology (TEEM), Test for knowledge of morphemes. Kannada Language Test and Malayalam language test (MLT) are used to find the language age of a child. It tests various linguistic

aspects like case markers, synonyms, homonyms, etc… Western Aphasia Battery also tests for components of language.

3. Applications of Linguistic Theory in Clinical Fields

a. **Phonetics and Phonology**: the assessment and treatment of phonological disorder have been firmly grounded on segmental linear models of phonology. Another development in theoretical phonetics and phonology which is yet to havea significant impact on speech pathology is the growing interest in models that seek to unite the areas of phonetics and phonology to produce more unified accounts of the ways in which the two areas interrelate and can inform each other. This in turn may have implications for phonological disorders and its relation to disorders of articulation and phonetics.

b. **Grammar:** the most influential theory of grammar is Chomsky's theory of Universal grammar. Using this model it has been argued, for eg. That the fact that English speaking individuals with Broca's aphasia often omit noun and verb inflections, whereas, Italian speaking individuals with Broca's aphasia never do so can be explained by attributing to each group a different initial setting for the stem parameter. Leonard (1988) described specific language impairment in children as a failure to set pragmatics appropriately.

c. **Pragmatics**: Pragmatics is playing an important role in language pathology and therapy. Ex: speech act theory (Jane Austin, 1962), discourse analysis and conversation analysis adds on the clinical practices which are very much useful for the proper assessment and therapy of any case related to pragmatic disorder.

d. **Cognitive neuropsychology**: one area of psycholinguistics that many speech language therapists have recently found useful in clinical work – particularly in

assessment and treatment of aphasia is cognitive neuropsychology. Cognitive neuropsychology models the psychological processes that underlies language production and comprehension and focuses on processing in individuals, rather than, attempting to identify properties of language that are universal.

Clinical linguistics has emerged as an identifiable sub discipline of linguistics. Its contribution to speech language therapy has been increasingly recognized. There is an assumption that the speech language pathologist should be able to do all the necessary clinical linguistic analysis and assessment incorporating an appropriate level of theoretical knowledge and practical detail across all client groups and disorders and across all areas of linguistics.

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11. Developmental Linguistics

Readers familiar with small children will know that they generally produce their first recognisable word (e.g. Dada or Mama) round about their first birthday; from then until the age of about one year, six months, children's speech consists largely of single words spoken in isolation (e.g. a child wanting an apple will typically say 'Apple'). At this point, children start to form elementary phrases and sentences, so that a child wanting an apple at this stage might say 'Want apple'. From then on, we see a rapid growth in children's grammatical development, so that by the age of two years, six months, most children are able to produce adult-like sentences such as 'Can I have an apple?'

From this rough characterisation of development, a number of tasks emerge for the developmental linguist. Firstly, it is necessary to describe the child's development in terms of a sequence of grammars. After all, we know that children become adults, and we are supposing that, as adults, they are native speakers who have access to a mentally represented grammar. The natural assumption is that they move towards this grammar through a sequence of 'incomplete' or 'immature' grammars. Secondly, it is important to try to explain how it is that after a period of a year and a half in which there is no obvious sign of children being able to form sentences, between one-and-a-half and two-and-a-half years of age there is a 'spurt' as children start to form more and more complex sentences, and a phenomenal growth in children's grammatical development. This uniformity and (once the 'spurt' has started) rapidity in the pattern of children's linguistic development are central facts which a theory of language acquisition must seek to explain. But how?

Chomsky maintains that the most plausible explanation for the uniformity and rapidity of first language acquisition is to posit that the course of acquisition is determined by biologically endowed innate language faculty (or language acquisition program, to borrow a

computer software metaphor) within the human brain. This provides children with a genetically transmitted set of procedures for developing a grammar which enables them to produce and understand sentences in the language they are acquiring on the basis of their linguistic experience (i.e. on the basis of the speech input they receive). The way in which Chomsky visualises the acquisition process can be represented schematically as in (13) below (where L is the language being acquired):

Children acquiring a language will observe people around them using the language, and the set of expressions in the language which the child hears (and the contexts in which they are used) in the course of acquiring the language constitute the child's linguistic experience of the language. This experience serves as input to the child's language faculty, which provides the child with a set of procedures for analysing the experience in such a way as to devise a grammar of ,the language being acquired. Chomsky's hypothesis that the course of language acquisition is determined by an innate language faculty is known popularly as **the innateness hypothesis**.

Invocation of an innate language faculty becoming available to the child only at some genetically determined point may constitute a plausible approach to the questions of uniformity and rapidity, but there is an additional observation which suggests that some version of the innateness hypothesis must be correct. This is that the knowledge of a language represented by an adult grammar appears to go beyond anything supplied by the child's linguistic experience. A simple demonstration of this is provided by the fact that adult native speakers are not only capable of combining words and phrases in acceptable ways but also of recognising unacceptable combinations. The interesting question this raises is: where does this ability come from? An obvious answer to this question is: that the child's linguistic

experience provides information on unacceptable combinations of words and phrases. But this is incorrect. Why do we assert this with such confidence?

Obviously, when people speak, they do make mistakes (although research has shown that language addressed to children is almost completely free of such mistakes). However, when this happens, there is no clear signal to the child indicating that an adult utterance contains a mistake, that is, as far as the child is concerned, an utterance containing a mistake is just another piece of linguistic experience to be treated on a par with error-free utterances. Furthermore, it has been shown that adults' 'corrections' of children's own speech do not take systematic account of whether children are producing syntactically acceptable or unacceptable combinations of words and phrases; parents do 'correct' their children, but when they do this, it is to ensure that children speak truthfully; grammatical correctness is not their target. Overall, there is compelling evidence that children do not receive systematic exposure to information about unacceptable sequences, and it follows that in this respect the child's linguistic experience is not sufficient to justify the adult grammar. From this poverty of the stimulus argument it follows that something must supplement linguistic experience and the innate language faculty fulfills this role.

Now, it is important to underline the fact that children have the ability to acquire any natural language, given appropriate experience of the language: for example, a British child born of monolingual English-speaking parents and brought up by monolingual Japanese-speaking parents in a Japanese-speaking community will acquire Japanese as a native language. From this it follows that the contents of the language faculty must not be specific to any one human language: if the language faculty accounts for the uniformity and rapidity of the acquisition of English, it must also account for the uniformity and rapidity of the acquisition of Japanese, Russian, Swahili, etc.; and if the language faculty makes up for the insufficiency of a child's experience of English in acquiring a grammar of English, it must

also make up for the insufficiency of a child's experience of Japanese in acquiring a grammar of Japanese, for the insufficiency of a child's experience of Russian in acquiring a grammar of Russian, for the insufficiency of a child's experience of Swahili in acquiring a grammar of Swahili, etc. This entails, then, that the language faculty must incorporate a set of UG principles (i.e. principles of Universal Grammar) which enable the child to form and interpret sentences in any natural language. Thus, we see an important convergence of the interests of the linguist and the developmental linguist, with the former seeking to formulate **UG principles** on the basis of the detailed study of the grammars of adult languages and the latter aiming to uncover such principles by examining children's grammars and the conditions under which they emerge.

In the previous paragraph, we have preceded 'language' with the modifier 'human', and genetic transmission suggests that a similar modifier is appropriate for 'language faculty'. The language faculty is species-specific and the ability to develop a grammar of a language is unique to human beings. This ability distinguishes us from even our nearest primate cousins, the great apes such as chimpanzees and gorillas, and in studying it we are therefore focusing attention on one of the defining characteristics of what it means to be a human being. There have been numerous attempts to teach language to other species, and success in this area would seriously challenge the assertion we have just made. Indeed, it has proved possible to teach chimpanzees a number of signs similar to those employed in the Sign Languages used as native languages by the deaf, and it has been 8 linguistics reported that pigmy chimpanzees can understand some words of spoken English, and even follow a number of simple commands. Such research arouses strong emotions, and, of course, we are not in a position to assert that it will never produce dramatic results. At the moment, however, we can maintain that all attempts, however intensive, to teach grammatical knowledge to apes have been spectacular failures when the apes' accomplishments are set alongside those of a normal

three-year-old child. As things stand, the evidence is firmly in favour of the species-specificity of the language faculty.

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12. Language Functions

The most basic function of language that readily comes to the mind of every one is the communicative function. This means that language is used to communicate or express the ideas in our mind. These ideas themselves emanate from the world we live in. This however is too simplistic a way of seeing the function of language. In this lecture, we have identified some major functions of language, which will be applicable to any known human language. They are given below.

1. Emotive Function

Language is used to express the state of our mind, the way our mind is working at some particular point in time. The emotive function of language focuses on the addresser and it is also referred to as expressive function. The addresser's own attitude towards the content of the message is emphasised. Each time we use certain expressions, they show how we feel. Such expression are called emotive utterances Examples are emphatic speech or interjections, such as: “hurray”, “damn it”, “oh my God”, “wow”, ouch” (English), “ye e” in Yoruba to express pain or sorrow), “aah” (to express surprise), and so forth.

2. Referential Function

Referential Function refers to the context. This function emphasises that communication is always dealing with something contextual. It is also called **representative function of language**. Speakers use language to refer to their world. The only thing that accounts for the difference in languages is the fact that speakers’ worlds differ, hence their view, which is expressed in language must equally differ. Most words used in language refer to some entity in the physical or experiential world of the speaker. For instance, the word “chair” refers to an object in the world that has four legs and is used for sitting. However, we are aware that some

words we use do not refer to anything in the world as such. For instance grammatical words, such as prepositions and articles do not refer to any concrete object.

3. Social Function

Language is used to maintain relationships between speakers. This is the social function of language. It is also referred to as **phatic** communion. It is the use of language that helps the speakers to establish contact. By mere exchange of words, ties of union are created. For instance, greetings are regarded as a way of establishing relationship in language. They come before any form of verbal interaction. This function of language signifies the basic human requirement to signal friendship. The function is more about a ritual exchange about speakers' well-being, e.g.:

Good morning - directed to someone you met in the morning

Bless you - in Nigeria, directed to someone who has just sneezed

Hello - directed to somebody one wants to talk to

4. Poetic Function

Language is used for creative purposes by some users. Sometimes, our messages convey more than just the content, and until we probe into the deeper meaning being conveyed, we may lose the whole message. Most English words have the ordinary surface day to day meaning and in addition, connotation, i.e., meaning above the ordinary meaning, which is not always directly linked to the surface usage. This function of language is commonly employed in literary works, where writers deliberately deviate in their use of language to create certain effects.

5. Other Functions

The functions discussed above are the generally stated functions of language. There are other miscellaneous functions of language functions, which we will discuss briefly below.

Language can be used as a means of expressing one's identity. Speakers' use of language is constrained by the totality of who they are in terms of their social background, age, sex, profession, and region of origin. For instance, certain expressions are generally associated with certain group of speakers. It is on the basis of this function of language that linguists study how language varies, by examining varieties of language peculiar to an individual (idiolect); variety of language peculiar to people from a particular geographical location (dialect); variety of language that reflects features of speech (pronunciation) peculiar to people from the same region (accent); variety of speech peculiar to people of the same profession (register).

Each utterance we make is designed to perform certain functions such as: informing the listener, questioning the listener about some facts, promising the listener that one will do something, and ordering the listener to do something. This language study is referred to as speech acts. This means that our utterances make us and our listeners to behave or act in a particular way. Listeners are expected to recognise the speaker's intention or else communication would not be achieved.

6. Factors of Communication and Functions of Language According to Jakobson (1960)

According to Jakobson, any act of verbal communication is composed of six elements, or factors: (1) a context (the co-text, that is, the other verbal signs in the same message, and the world in which the message takes place), (2) an addresser (a sender, or enunciator), (3) an addressee (a receiver, or enunciatee), (4) a contact between an addresser and addressee, (5) a common code and (6) a message.

Each factor is the focal point of an oriented relation, or function, that operates between the message and the factor. This yields six functions:

Factors of communication and functions of language

Target factor and function no.	**TARGET FACTOR**	**SOURCE FACTOR**	**FUNCTION**
1	Context	Message	Referential
2	Addresser	Message	Emotive
3	Addressee	Message	Conative
4	Contact	Message	Phatic
5	Code	Message	Metalingual
6	Message	Message	Poetic

Briefly, these six functions can be described as follows:

1. **The referential function** is oriented towards context and describes things or facts. It is usually expressed through descriptive statements like 'Water boils at 100 degrees'.
2. **The Emotive function** also called expressive, focuses on the addresser. It deals with his emotions, feelings, attitudes and wills. It is generally expressed by using interjections such as 'Bah!' and 'Oh!
3. **The Conative function** focuses mainly on the addressee. It is used to influence other people to make them react in a specific way. It usually employs some particular linguistic means such as imperatives, indirect questions, superlatives of quality, hyperbole, neologisms, metaphor, etc (Vestegaard and Schrøder, 1985:6).
4. **The Phatic function** is used to establish, maintain or finish the communication with the addressee.
5. **The Metalingual function** maintains mutual agreement on the code (language). It is the use of language to describe or discuss itself (for example, a definition)
6. **The Poetic function** focuses on the form of the message itself; that is how it is used. It is the operative function of poetry and advertising.

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13. Linguistic Stylistics

1. What is Stylistics?

Stylistics is a branch of linguistics which studies style in a scientific and systematic way. It is concerned with the ways linguistic features of different varieties of language are used at different levels.

Linguistic stylistics is the study of the linguistic devices in relation to literary texts; such as rhetorical figures and syntactical patterns; used to produce expressive or literary style. Leech (1981) defines stylistics as "a linguistic approach to literature, explaining the relation between language and artistic function, with motivating questions such as "why" and "how" more than "what". He specifies that these motivating questions are not so much *what* as *why* and *how*. From the linguist's angle, it is "*Why* does the author here choose this form of expression?" "From the literary critic's viewpoint, it is *How* is such-and-such an aesthetic effect achieved through language?" (Leech& short, 2007:11).

Simpson (2004:3) emphasizes the importance of stylistics as a mean to explore, specifically explore creativity in language use. He further suggests that stylistics has to be rigorous, retrievable, and replicable (ibid).

The goal of stylistics is not simply to describe the formal features of texts but also to show their functional significance by providing a detailed description of a specific style in a specific context as well as the examination of grammar, lexis, semantics, phonology, and other stylistic devices (Niazi and Guatam, 2010:109).

Although stylistics is often thought of as „the linguistic characteristics of a particular text" (Leech & Short 2007: 11). It mainly investigates how readers interact with the language of (mainly literary) texts in order to explain how weunderstand and are affected by texts when we read them.

2. The Purpose of Stylistics

Why should we do stylistics? To do stylistics is to explore language, and, more specifically, to explore creativity in language use. Therefore, doing stylistics enriches our ways of thinking about language and, as observed, exploring language offers a substantial purchase on our understanding of (literary) texts. With the full array of language models at our disposal, an inherently illuminating method of analytic inquiry presents itself. This method of inquiry has an important reflexive capacity insofar as it can shed light on the very language system it derives from; it tells us about the 'rules' of language because it often explores texts where those rules are bent, distended or stretched to breaking point. Interest in language is always at the fore in contemporary stylistic analysis which is why you should never undertake to do stylistics unless you are interested in language

3. Stylistics and Levels of Language

Language in its broadest conceptualisation is not a disorganised mass of sounds and symbols, but is instead an intricate web of levels, layers and links. Thus, any utterance or piece of text is organised through several distinct levels of language.

3.1 Levels of Language

To start us off, here is a list of the major levels of language and their related technical terms in language study, along with a brief description of what each level covers:

Level of language	**Branch of language study**
- The sound of spoken language; the way words are pronounced.	**phonology; phonetics**
- The patterns of written language;	

the shape of language on the page. **Graphology**

- The way words are constructed;

  words and their constituent structures. **morphology**

- The way words combine with other

  words to form phrases and sentences. **syntax; grammar**

- The words we use; the vocabulary

  of a language. **lexical analysis; lexicology**

- The meaning of words and sentences. **semantics**
- The way words and sentences are

  used in everyday situations;

  the meaning of language in context. **pragmatics; discourse analysis**

4. **Literary Stylistics**

Literary stylistics or literary criticism is the subjective interpretation of literary texts. It is concerned with the deciphering of the message.

5. Some Stylistic Features

1. **Parallelism:** Parallelism "consists of phrases or sentences of similar construction and meaning placed side by side, balancing each other" (Cuddon, 2013: 511). Parallelism creates a balanced flow of ideas**.** Torresi (2010: 123) argues:

> **Parallelism is recurrent syntactical similarity. Several parts of a sentence or several sentences are expressed similarly to show that the ideas in the parts or sentences are equal in importance. Parallelism also adds balance and rhyme and, most importantly clarity to the sentence.**

2. Repetition is a cohesive device responsible for linguistic cohesion and rhetorical force (Johnestone, 1991).

-**Alliteration:** repetition of consonants sounds.

3. Personification is the "impersonation or embodiment of some quality or abstraction; the attribution of human qualities to inanimate objects (Cuddon, 2013: 529). In other words, personification is to attribute human characteristics and emotions to what is non- human. Objects, abstractions and ideas can also be brought to life by personification.

4. Simile: Simile is "a figure of speech in which one thing is likened to another, in such a way as to clarify and enhance an image. It is an explicit comparison (as opposed to the metaphor, where the comparison is implicit) recognizable by the use of the words 'like' or 'as'" (Cuddon, 2013: 830). Thus, simile is a cohesive device where two different things are compared to each other in at least one way. Simile in discourse can be a device of art or a means of explanation. When a simile compares two things directly through using connectives like "as", "like" or verbs such as "resemble", "seem"; it is called an explicit simile. However, sometimes the connective is omitted, in such case, the simile is said to be implicit.

5. Metaphor Metaphor is a word of Greek origin, 'metaphora', which means carrying the word or item over or beyond (Chetia, 2015). Unlike simile which implies an explicit comparison, metaphor refers to implied and implicit comparisons where two completely different things are compared without stating any formal indicator which shows that a comparison is made. Cuddon (2013: 432) defines metaphor as "A figure of speech in which one thing is described in terms of another."

6. Hyperbole: Hyperbole is "a figure of speech which contains an exaggeration for emphasis" (Cuddon, 2013: 346). Therefore, hyperbole is using exaggeration or overstatements intentionally to achieve an effect.

7. Pun : Pun is a figure of speech which plays upon a word that has two or more different meanings. In the most general of terms, a pun is "a form of speech play in which a word or phrase unexpectedly and simultaneously combines two unrelated meanings"(Chetia, 2015: 983).

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14. Corpus Linguistics

Corpus linguistics is a recent method to carry out linguistic analyses. It has become a popular linguistic approach since the advent of personal computers in the 1990s. A simple definition of corpus linguistics is provided by McEnery and Wilson who define the approach as "the study of language based on examples of real life language use" (1996: 1). The word 'corpus' comes from the Latin word for 'body', the plural form for 'corpus' is 'corpora'[4]. Therefore, a corpus is a 'body' of language which represents a large collection of naturally occurring language (both written and spoken). Corpus linguistics is originally derived manually, but nowadays by the arrival of computer sciences, it is automatically derived from source texts. Worthy to note that because of the complexity[5] of the advertising discourse due to the sociolinguistic reality of the Algerian linguistic situation (see chapter one), the current analysis has relied on a manual linguistic analysis; no specialised software to deal with such type of Arabic discourse has been found. As it is used to tackle many various types of linguistic questions, and as it has been found to be so effective in handling interesting, fundamental, and often surprising new insights about language, corpus analysis has become one of the most widespread methods for linguistic analyses in recent years.

In fact, there is some disagreement concerning whether to consider corpus linguistics a theory of language or methodology (or both). According to McEnery and study, might occur. Systematic also means that the investigator is provided with information on the exact composition of the corpus.

[4] Even the word 'corpuses' is accepted as a plural of 'corpus' but 'corpora' is much more famous.

[5] The advertising text of the present data may appear in Algerian Arabic, Modern Standard Arabic and sometimes both.

Another characteristic of modern corpus linguistics is the use of computers. In this respect, McEnery and Gabrielatos (2006: 34) advocate that "the term 'corpus linguistics' is now synonymous with 'computer corpus linguistics'". Thus, the use of computers in corpus linguistics facilitates the collection and storage of large amounts of language data and enables scholars to quickly manage and analyse large amounts of data. Leech (1992: 106) claims that the use of computers "gives us the ability to comprehend and to account for, the contents of [...] corpora in a way which was not dreamed of in the pre-computational era of corpus linguistics".

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15. Discourse Analysis

1- Discourse: Definition

The term 'discourse' has been differently defined and understood by various theorists. Crystal (1992: 25) defines discourse as: "a continuous stretch of (especially spoken) language larger than a sentence, often constituting a coherent unit such as a sermon, argument, joke, or narrative". According to this definition, discourse is primarily seen as spoken language. Cook (1989) has a similar perspective of discourse; he defines it as "stretches of language perceived to be meaningful, unified and purposive" (Cook, 1989: 106). Moreover, Yule and Brown (1987: 1) state that:

The analysis of discourse is, necessarily, the analysis of language in use. As such, it cannot be restricted to the descriptions of linguistic forms independent of the purposes or functions which these forms are designed to serve in human affairs

In other words, discourse is produced as a social act in particular situation with the help of linguistic and non-linguistic means. It mainly conveys the notion of language use (parole).

Although a lot of studies have appeared in discourse area, there is no single approach to study discourse in linguistics. Yet, discourse can be analysed through three main perspectives: the formal, the empirical and the critical approach.

The formal approach to discourse treats discourse as text. Like 'structuralism'[6], the formal approach analyses the structure of the text. Yet, some linguists, like van Dijk (1972), refer to the formal analysis of discourse as 'text linguistics'. van Dijk (1985: 4) explains that "Structural descriptions characterise discourse at several levels or dimensions of analysis and

[6] Structuralism is a linguistic movement introduced by Ferdinand de Saussure (1857 - 1913) in the early 20th Century

in terms of many different units, categories, schematic patterns, or relations". The formal approach does not encompass aspects of context in which the discourse is used.

The empirical approach to discourse, also called 'conversational analysis' (Schegloff, 1972), studies not only the formal properties of conversational text but also the communicative competence of the speakers/writers, particularly their pragmatic knowledge of discourse.

The critical approach to discourse studies is broader than the two previous approaches. It includes all fields of social issues. A lot of scholars, such as Fairclough (1992) and van Dijk (1993) are concerned with critical discourse analysis scope. van Dijk (1993) explains that the main purpose of critical discourse analysts is to handle social problems relying on various disciplines such as sociology, linguistics and social cognition.

Text and Discourse Broadly speaking, discourse includes text. However, according to some linguists, text and discourse are two separate terms and concepts. According to Widdowson (2007), for example, a text is made up of sentences where as a discourse is the use of such sentences for communication.

Brown and Yule (1983: 06) say that "text is the representation of discourse and the verbal record of a communicative act". That is, the text refers to the physical product of a discourse.

Tannen (1983: 79) uses discourse to mean "anything beyond the sentence" which forms a text. Therefore, the terms discourse and text may be used interchangeably. Accordingly, discourse refers to a stream of any language not just individual sentences out of their contexts (Tannen, 1983).

Furthermore, psychological researches have proved that there is not a strict one to one correspondence between the way hearers understand, store and remember a discourse and what was actually said (Dooly and Levinsohn, 2001).

A more clear and comprehensive definition of the terms is given by Halliday (1985: 290) when he says: "'discourse' itself is a process and the term 'text' is usually taken as referring to the product". Therefore, a 'text' is a product or the set of sentences and 'discourse' refers to the meaning of such a text within a certain context. A discourse might be classified into two main types: transactional and interactional.

2. Types of Discourse

Discourse can be classified according to the communicative purposes they are fulfilling. Therefore, they can be divided into those discourses which are basically transactional in nature, and those which are basically interpersonal (Nunan, 1993). Some other linguists like Brown and Yule (1983) use the term interactional instead of interpersonal.

2.1 Transactional Discourse

Although language is used to perform many communicative functions, linguists and linguistic philosophers believe that the most important function is the communication of information. Lyons (1977) argues that his primarily interest will be on the intentional transmission of factual, or propositional information.

The discourse used to convey or transmit specific information is called by linguists, like Brown &Yule (1983), and Nunan (1993), the transactional discourse. The main objective of the speaker /writer is efficient transference of information. It is very important that the receiver gets the informative message detail correct. The writer/ speaker should be as clearer as possible in what he says or writes. Brown and Yule (1983) announce that there will be unfortunate results in real world if the information is not properly understood by the

speaker/writer. The example which is generally given for transactional discourse is factual questions because people need an answer for a question (keneeth, 2014).

2.2 Interactional Discourse

Sociologists and sociolinguists consider language as a means of establishing and maintaining relationship. People in such a type of discourse are particularly concerned with socializing. In this vein, Kasper (1990: 205) says: "Interactional discourse, by contrast, has as its primarily goal the establishment and maintenance of social relationships". In other words, language in interactional discourse is used to fulfil a social purpose.

It is generally believed that written language is used for transactional purposes; though it is also possible to find texts which purpose is not primarily to inform but to maintain social relationships, e.g. thank you letters, love letters, etc.

Making such a distinction between transactional and interactional values of discourses does not mean that a given text will only fulfil one or other of these functions (Nunan, 1993). Many discourses that are mainly transactional in nature also carry social functions, and essentially social discourses can contain transactional features.

3. Discourse Analysis

Many years ago, Firth (1935)[7] motivates linguists to study conversation by citing: "It is here that we shall find the key to a better understanding of what language is and how it works".

In the last few decades, discourse analysis has really been exploited as being a very important discipline because of a set of changes that have encouraged its interest (Jaworsky and Coupland, 1999).

[7] Quoted in Couthard (1977: 01).

Though discourse analysis is considered to be one of the main concerns of linguistics, other disciplines have contributed to its historical development and practices these years, such as psychology, sociology, etc (Davies and Elder, 2004: 133-134). In this sense, Brown and Yule (1983: viii) say: "Discourse analysis is used to describe activities at the intersection of disciplines as diverse as sociolinguistics, psycholinguistics, philosophical linguistics and computational linguistics".

Discourse analysis is a term which is frequently used by researchers interested in analysing language in relation to social, political, and cultural formations. Brown and Yule (1983: 1) claim that discourse analysis is "the analysis of language in use". The discourse analyst emphasises on "an investigation of what that language is used for". That is, the function and purpose of communication (ibid).

Discourse analysis sheds light on the way speakers indicate their semantic intentions as well as the way hearers interpret what they hear. Hence, what the producer means does not all the time match with the receiver's interpretation. Admittedly, Widdowson (2007: 7) states: "As we all know from our experience, no matter how explicitly we think we have textualized what we want to say, there is always the possibility that it will be interpreted otherwise". Therefore, according to Widdowson, discourse analysts deal with what a producer meant by his text and what a text means to the receiver.

Moreover, discourse analysis treats the way sentences are combined with each other to form texts and discourses, and it describes real language in social contexts. Language does not occur alone, but rather, it does in social context. Showing the importance of context, Cook (2001: 3) stresses the importance to examine "the context of communication: who is communicating, with whom and why; in what kind of society and situation, through what medium; how different types and acts of communication evolved, and their relationship to each other". Therefore, context is an important aspect to be considered in discourse analysis.

3.1 Context in Discourse Analysis

As mentioned previously, context is very important for text analysis. Thus, as Brown and Yule say: “The discourse analyst has to take account of the context in which a piece of discourse appears” (1983: 27). In fact, context, as a very broad concept, has been distinctly defined by linguists depending on their domain of interest.

Widdowson (2000), who is interested in language meaning, considers context as “those aspects of the circumstance of actual language use which are taken relevant to meaning” (p.126). He adds “in other words, context is a schematic construct [...] the achievement of pragmatic meaning is a matter of matching up the linguistic elements of the code with the schematic elements of the context” (Widdowson, 2000: 126).

In his study of the discourse of advertising, Cook (2001) provides a set of features which characterize ‘context’. The features are as follows :

1- *Substance*: it refers to the physical material that carries text.
2- *Music and pictures*
3- *Paralanguage*: non-linguistic but meaningful behaviours that accompany language, such as voice quality, gestures, facial expressions, typeface choice and size of letters, etc.
4- *Situation*: “the properties and relations of objects and people in the vicinity of the text, as perceived by the participants” (ibid: 04).
5- *Co-text*: text which precedes or follows the analysed text, and which the participants consider as belonging to the same discourse.
6- *Intertext*: text that belongs to other discourse but which is associated with the text under consideration, and which influences its interpretation.
7- *Participants*: according to Cook, the participants refer to the senders, receivers, addressers and addressees. Hence, the sender and the receiver may not be the same as the addresser and the addressee respectively. In advertisements, for example, an actor can be an addresser but the sender is an advertising company. In the same example, the addressee may be a specific group of people but the receiver is any person who sees the advertisement. According to Cook, participants’ intentions, interpretations, knowledge and beliefs, attitudes, affiliations and feeling are all part of the context.

8- *Function*: "what the text is intended to do by the senders and addressers, or perceived to do by the receivers and addressees" (ibid).

Although, the opinions vary, all linguists agree that context plays a very important role in analysing discourse. A discourse and its context are in close relationship: the discourse elaborates the context and the context helps to interpret the meaning of sentences in the discourse.

3.2 Cohesion

The term 'cohesion' refers to the words and phrases called text forming devices used by writers or speakers to establish relationships between sentences or utterances and which help to tie them in a text together (Nunan, 1993).

Therefore, with cohesion, we are concerned with the way an element- a pronoun, noun, or a conjugation-may refer backwards or forwards another clause. That is, cohesion occurs when the interpretation of some elements in the text depends on that of another.

Nevertheless, as Yule (2010) explains, cohesion alone is not sufficient for a complete understanding of a text. It is easy to produce a highly cohesive text that contains a lot of connections between the sentences but very difficult to interpret it. Therefore, there should be another factor that helps readers or listeners to distinguish connected discourses that make sense from those that do not. Such factor is generally described as "coherence".

3.3 Coherence

Yule (2010: 144) has given a key to understand the concept of coherence. The key is "everything fitting together well".

Coherence refers to those items that make a text hang together. Fairclough (1992: 83) describes coherent text as: "A text whose constituent parts (episodes, sentences) are

meaningfully related so that the text as a whole ‘makes sense’, even though there may be relatively few markers [...]”.

Therefore, coherence can be described as the relationships of different ideas in a text which are joined together to create a meaningful discourse. Those relationships may be based on people’s knowledge. Yule (2010: 144) explains this idea by saying: “It is people who ‘make sense’ of what they read and hear. They try to arrive at an interpretation that is in line with their experience of the way the world is”. It means that meaningful connections, which are really expressed by words and sentences, could be created by readers depending on their shared knowledge.

As many linguists have pointed out (for example, Brown and Yule, 1983; and Widdowson, 1978), it is possible to have coherence without cohesion. Widdowson (1978: 29) provides an example of an exchange between two persons:

A- That’s the telephone.
B- I’m in the bath.
A- Ok

This discourse does not contain formal links but can be understood as a coherent discourse: one person is requesting another to answer the telephone and the other is saying that s/he is not able to answer because s/he is having a bath. Examples like these are interesting but, in fact, most coherent texts do display a set of cohesive devices.

Therefore, we can guess that cohesion contributes to the coherence of a text though it is not a sufficient condition. The following part tries to shed light on the main principles or patterns of cohesion.

3.4 Patterns of Cohesion

Cohesive devices have been widely dealt with by linguists. However, the most comprehensive description and analysis of cohesion is to be found in Halliday and Hasan (2013).

Based on their analysis of English texts, Halliday and Hasan assume that cohesion is realized partly through grammar and partly through vocabulary. They list five types of cohesive ties: reference, substitution, ellipsis, conjunction and lexical cohesion.

3.4.1 Grammatical Cohesion

Grammatical cohesion is realized by the grammatical features each element tie each other. According to Halliday and Hasan (2013: 04), these grammatical clues make a text a text. Cohesive relationships within a text occur "where the INTERPRETATION of some elements in the discourse is dependent on that of another. The one PRESUPPOSES the other, in the sense that it cannot be effectively decoded except by resource to it" (ibid). An example of such a cohesive relationship is provided by the authors: "Wash and core six cooking apples. Put them into a fireproof dish" (ibid: 02). The word 'them' in this example presupposes 'apples' and gives semantic tie between the two sentences; thus, the function of 'them' provides cohesion to the two sentences, and therefore, to a part of text or text as a whole.

Moreover, in a cohesive relation like the one in this example, one of two items is interpreted by reference to another (Halliday and Hasan, 2013). This cohesive issue and others are going to be discussed in the following part.

3.4.1.1 Reference

Reference occurs when a linguistic element, word or phrase, in a text points to another item for its interpretation. Reference elements include personal pronouns, such as I, you ,he, her; possessive adjectives such as my, your, his, her; demonstrative references, such as this,

that, these, those; the definite article the; and comparative references expressed through adjectives like same, equal, similar, different, better, more, and adverbs like so, such, similarly, otherwise, so, more, etc.

A reference item may occur within a text and it is called *endophoric* reference which really makes cohesion ties within the text (Brown and Yule, 1993: 192), or outside the text, in the context of situation, and it is called *exophoric*[8] reference which is not considered as cohesive because it does not tie two elements together in a text (Halliday and Hasan, 2013: 18).

Endophoric relations, as shown in the diagram below, are of two types: those which point the reader or listener back in the text for their interpretation, these are called *anaphoric* relations; and those which point the reader or listener forward in the text for their interpretation, are called *cataphoric* relations (Haliday and Hasan, 2013).

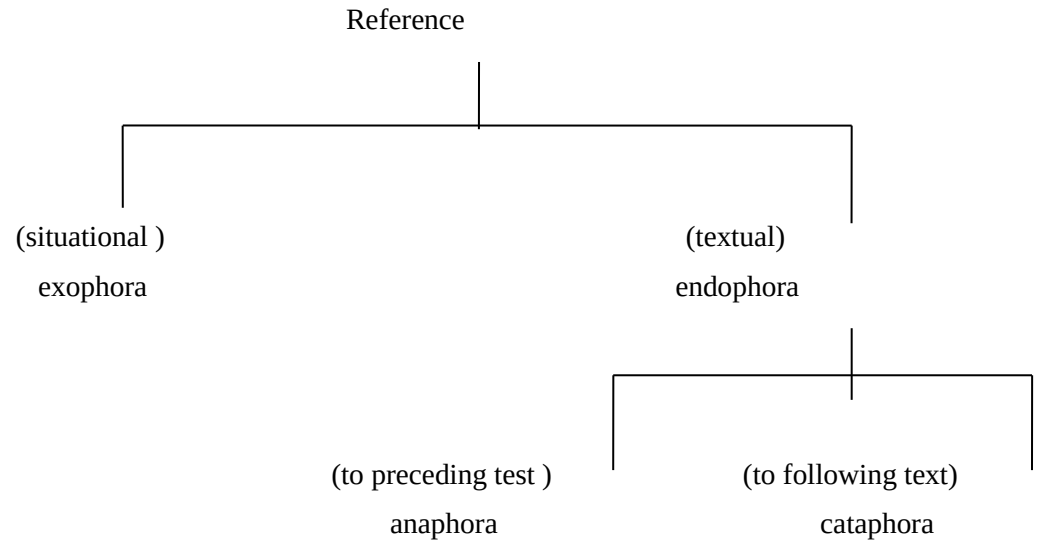
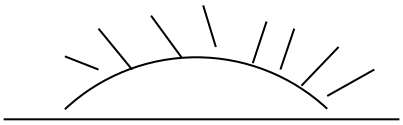


Figure 1.1 Types of references[9]

[8] In discourse analysis, the term 'deictic' is also used to refer to exophoric reference.
[9] Source: Halliday and Hasan (1976:33).

The above tree diagram shows the distinctions within the class of reference item, depending on their different uses and 'phoric'[10] tendencies.

Moreover, the relations within the reference item can be exemplified in the following:

a- exophora: Look at that. (that =  **)**

b- endophora:

(i) anaphoric – Look at the sun. It's going down quickly.
(It refers back to the sun.)

(ii) cataphoric – It is going down quickly, the sun.
(It refers forward to the sun.)

(Brown and Yule, 1983: 193)

In the first example of exophora, 'that' refers to an outside element which is not in the text; and in the last two examples the reference relationship occurs between the full lexical expression 'the sun', and the pronoun 'it'.

1.4.1.2 Substitution and Ellipsis

Substitution and ellipsis are closely related to each other because they both involve the replacement (substitution) or removal (ellipsis) of a linguistic item which would otherwise be anticipated in the text (Flowerdew, 2013).

Unlike reference relations which link semantic meanings within a text, substitution and ellipsis are considered as linguistic links at the lexico-grammatical level. It is a relation between wordings (Halliday and Hasan, 1978: 89). They are used to avoid repetition of a particular linguistic item.

a) Substitution

[10] 'Phoric' is a term used interchangeably with endophoric reference

There are three types of substitutions: nominal, verbal, and clausal. When something is substituted in text, the substituted item keeps the same structural function as the presupposed item. The examples below for each type are given by Nunan (1993: 25):

NOMINAL SUBSTITUTION
There are some new tennis balls in the bag, these ones've lost their bounce.
VERBAL SUBSTITUTION

A: Annie says you drink too much.

B: So do you!

CLAUSAL SUBSTITUTION

A: Is it going to rain?

B: I think so.

In each of these examples, 'ones', 'do' and 'so' have, respectively, replaced part of the preceding text. These words can only be interpreted in relation to what has gone before.

3.4.1.2 Ellipsis

Ellipsis is described as a form of substitution in which the original linguistic item is 'substituted by zero' (Nunan, 1993: 24), which is to say, an item is omitted. Flowerdew (2013: 37) states "Where ellipsis occurs, something is left unsaid, it is true, but, at the same time, it is nevertheless understood". Like substitution, ellipsis may operate at the level of noun, verb or complete clause. Examples of each type follow:

a) He spotted the pink ball and then the black. (nominal)
b) John played tennis and Peter football. (verbal)
c) A: Do you play tennis?
B: No. (clausal)

Flowerdew (2013: 37)

In the first example (a), the word 'ball' is omitted at the end of the second clause; in example (b), there is an ellipsis of the verb 'play' in the second clause; and in(c), the whole clause 'I don't play tennis' is omitted.

3.4.1.3 Conjunctions

Unlike reference, substitution and ellipsis which remind the reader of previously mentioned entities, actions and state of affairs, conjunction is a cohesive device which involves the use of formal markers to link sentences, clauses and paragraphs to each other. Discussing conjunction, Halliday and Hasan (1976: 226) advocate:

> **Conjunctive elements are cohesive not on themselves but indirectly, by virtue of their specific meanings; they are not primary devices for reaching out into the preceding (or following) text, but they express certain meanings which presuppose the presence of other components in the discourse.**

Therefore, conjunction is not what discourse analysts call anaphoric relation. It does not imply that the reader should search for the meaning of the element to interpret it as in reference, or the replacement of some linguistic items by a counter or by a blank, as are substitution and ellipsis. It is, rather, "a specification of the way in which what is to follow is systematically connected to what has gone before" (ibid: 227).

Sharing the same view, Christiansen (2011: 161) argues that conjunctions are *"*perhaps the most explicit and obvious cohesive devices in a text", because in such a type of cohesion, the cohesive item itself contains the meaning relation.

There are four types of conjunctions: additive, adversative, causal, and temporal: First, additive conjunctions connect or link units of semantic similarity by adding to the presupposed item, and are signalled through *and, also, too, furthermore, additionally*, etc. Additive conjunction might also be used to negate the presupposed element and is signalled by the use of *nor; and ...not, not...either, neither*. Second, conjunctive relations of the adversative type are used to indicate "contrary to expectation" (Halliday and Hasan, 1976: 250). The expressions refer to a contrary result or opinion to the previously mentioned content. Adversative relations are characterized by such conjunctions like *but, however, rather, on the contrary, though, yet*, etc. Causal conjunctions are used to express result, reason

or purpose. The connected clauses are related to each other either in the cause and effect or in terms of conditional relation. Causal relations are signalled by conjunctions like *so, thus, hence, therefore, because, consequently, accordingly,* etc. Finally, the last conjunctive category is temporal which expresses the time order of events. It is realized by the use of conjunctions like *then, previously, next, after that,* and so on. In addition, temporal relation may also express the sense of conclusiveness by such conjunctions as *finally, to sum up, in short* (ibid: 243).

1.4.2 Lexical Cohesion

Lexical cohesion deals with meaning in text. It is concerned with the ways lexical items are semantically related to each other in some way. Halliday and Hasan (1976: 274) describe it as "the cohesive device achieved by the selection of vocabulary". They further subdivide lexical cohesion into two major categories: *reinteraction* and *collocation.*

3.4.2.1 Reinteraction

It includes four types: repetition, synonym or near synonym, super-ordinate, and general word. Consider the following famous examples of reinteraction provided by Halliday and Hasan (1976: 279-278):

There is a boy climbing that tree.

a- The boy's going to fall if he doesn't take care.
b- The lad's going to fall if he doesn't take care.
c- The child's is going to fall if he doesn't take care.
d- The idiot's going to fall if he doesn't take care.

In (a), the word 'boy' is repeated; in (b), 'boy' is replaced by a synonym 'lad'; in (c), it is replaced by a superordinate term 'child'; and in (d), a general word 'idiot' is used instead of 'boy'.

3.4.2.2 Collocation

Collocation refers to lexical items that co-occur regularly to create cohesion within a text. Collocation relationships include synonyms, near synonyms, hyperonyms (superordinate), pairs of opposites (e.g. man-woman), antonyms (e.g. good-bad), converses (e.g. lend-borrow), pairs of words taken from the same ordered series (e.g. Saturday – Wednesday), pairs of words taken from unordered lexical categories, (e.g. blue- black, attic-cellar), part- whole relationships (e.g.head- eyes-mouth, nose), part to part relationship (e.g. mouth- nose), and co-hyponyms of the same more general class (e.g. tool/ cscissors, hammer), etc. (Halliday and Hasan, 1976: 284).

Collocation can cause real problems for discourse analysts because it includes all the semantically related concepts or items in a text without being coreferential[11] (which is the case of reinteraction previously explained). It is, therefore, difficult in some cases to decide whether a cohesive relationship between words exists or not. Discussing such problems caused by collocation, Nunan (1993: 30) explains that a lot of "lexical relationships are text- as well as context bound". This means that items may be related in one text but not in another. Nunan provides an example of the words *neighbour* and *scoundrel*. The words are not related at all but they are synonyms in the following: "my neighbour has just let one of his trees fall into my garden. And the scoundrel refuses to pay for the danger he has caused" (ibid). Yet, it is impossible to establish a finite number of relatable lexical items in English.

Nevertheless, despite its problematic nature, lexical cohesion is usually considered as the most interesting in discourse analysis.

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11 coreferential means: " referring to the same thing" (Flowerdew, 2013:40)

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