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Introduction

As we come to this world we all speak, it may be different language but we all speak in human language. For example,

English teacher

Russian учительница

Uzbek   o'qituvchi

These words are written and spoken in different ways, but their meanings are the same. In all language we can see grammar rules. In the past linguistics area was narrow; day by day its sphere is broadening.

I.1. The notion of language.

Language - what can we say reading or understanding this word? The word itself consists of eight letters, four of them Consonant and four of them are Vowel letters. But what is the notion of this word? Then let's look from psycholinguistics point of view. We came to this world in order to speak, but we not born speaking. Language is a tool which helps us to communicate with each other.

Psycholinguists have defined language in various ways, depending on what they should to convey by such a definition. Let us give some definition given by Psycholinguists and determine the best definition that is useful for our present purposes in this dissertation.

Yule (1996) traced the origin of language to diverse sources. While some of these sources are considered supernatural, others are viewed as natural while others are viewed further as due to pragmatic purposes. However, whatever is the purported source of the human language, the important issue here is that it has some important characteristics which scholars have tried to determine due to its functional and practical usage by humans. [1.] Yule (1996) identifies six important characteristics of the human language. These are:

a. Displacement: this means that the human language can refer to things in the past, the future and even places outside the particular physical context.

b. Arbitrariness: this suggests that a reference and the linguistic element representing it have no actual iconic link. As such, there is no link between the word food and the actual food. This may suggest why it is possible for different languages to have different names for the same reference called food. It is *food* in English, *eda* in Russian, *ovqat* in Uzbek, etc.

c. Productivity: it is possible for new words to be formed in the course of time. As noted by Yule (1996) and confirmed by Scovel (1998) above, children are especially good at this (see Unit 3 above). Creativity is essentially a part of

language learning and acquisition process. And this is why *computer* arrived into the English language when the need to name the contraption arose.

d. Cultural Transmission: language is a means of transmitting culture from one generation to another. Hudson (1980) calls language the vehicle of culture.

e. Discreteness: Each distinct sound in language is considered as being discrete. This distinctiveness is what helps to determine if a sound is actually a phoneme or not in a language. The process of doing this is mostly done through the use of minimal pairs.

f. Duality: language normally has the physical and the meaning levels.

These characteristics of language have remained at the centre of its description. Language is thus usually considered as a system of human, arbitrary, conventional symbols used for communication. All these are part of the features that language has.

Other definitions proposed include:

Hudson (1980), Chomsky (1998), and Okolo (1998) opine that language is a learned behaviour which helps us to reason and build social relationships. Language thus becomes an important carrier of cultural norms and ways of reasoning about them. It reflects attitudes and social relationships obtaining in a particular society in its use by members of such a community.

Langacker (1987: 12) posits that language is actually "an integral part of the human cognition." His argument is that, language use is dependent on "experiential factors and inextricably bound up with psychological phenomena that are not specifically linguistic in character" (p. 13). Palmer (1976, 1981), Graddol, Cheshire and Swann (1993), Halliday (1985) and Osisanwo (2003) variously describe language as a functional device to communicate meaning. Graddol, Cheshire and Swann (1993) note that it is "a highly complex system of communication" (p. 12) while Halliday (1985: xvii) calls it a system for "making meaning." 35

Chomsky's (1998) regards language as an abstract system of behaviour constituted by rules that determines the appearance and innate meaning of a prospectively indefinite number of sentences. The essential fact identified by these scholars is that language is behavioural in form and systematic in nature. While some view its nature as being psychological, some regard it as being functional. Nonetheless, the essential thing that makes language an important human possession is its ability to help them interact in the social context. Thus, both its form and function are very relevant to linguistic description.

Self-Assessment Exercise

Give your own clear definition of language that encapsulates all the possible characteristics that language possesses.

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As human beings we are able to change our behaviour. The ideal that we act as free agents is fundamental to our self-conception. Every word we say reinforces this conviction, for whenever we speak we are able to make choices. The ability to consider alternatives and opt for one is basic to intelligent life. It is restricted by our physical nature, the many things we cannot choose, such as the colour of our eyes, our IQ, or whether we are beautiful or ugly. All this may change soon, as the human species gets ready to do with itself what it has done with other species for a long time: interfere with nature's course, select, breed, grow and artificially manipulate their genetic makeup. The life sciences have made spectacular progress over the past several decades, constantly expanding the realm of culture –that which we control – at the expense of nature – that which controls us. No longer confined to science fiction novels, anthropotechnology has crossed the threshold

into the real world and become a vital concern of legislation, the paradigm of deliberate regulation of behaviour. The prospects are tempting. Before long, we are told, we will be able to safeguard our offspring against congenital diseases, if not secure immortality for ourselves. At the same time, we are confronted with new challenges, which will be a lot more serious than how to retrain all those undertakers. We will have to decide whether to go down every pathway science opens up or to erect occasional warning signs, STOP HERE, at critical junctures. In short, at the present time, we are forced to rethink our place in the universe, the confines of nature and our own nature.

Language, the inborn

Language plays a peculiar role in this regard. People are born to speak, though they are not born speaking. It is no coincidence that the scientific study of language has been thoroughly impressed by, and, some would claim, has contributed to, the revolutionary changes in the life sciences. For language is seen as an evolutionary adaptation to communicate information. It is what most distinguishes us from other beasts, chatty chimps and brainy dolphins notwithstanding. The exploration of language, therefore, is indispensable if we want to understand our own nature. For language, as cognitive scientist Steven Pinker put it, 'is a distinct piece of the biological makeup of our brains'. 'It is not something that parents teach their children or something that must be elaborated in school' (Pinker 1994: 18f.). Yet, parents around the globe do teach their children language and only a few would willingly dispense with grammar school because they think their children's language is in no need of elaboration, and not just because they have misgivings about the school's effectiveness in this regard. Pinker could of course be right. He would not be the first scientist who gets the better of popular ideas. Language has been known for a long time to have a physical base in our brain, and of late the race is on among biologists to track down the language gene. Given the overwhelming importance of language to the survival of our species it is more than

a remote possibility that it is genetically determined. Assuming that it is, we are or aren't equipped with it, and in the latter case no amount of schooling will make up for the deficit. All babies acquire language quickly because they have the ability to do so and because all societies use language. The ability to acquire language is universal and unrelated to intelligence. With the exception of some pathological cases, humans grow up to speak, the dumbest and the brightest. Evidence for that is all around us. What this suggests is that language is innate and common to the species. Those who are chasing the language gene may be on the right track, then. Language helps us survive. But does Italian, or Dutch, or Bengali? Such a proposition would be hard to defend, and no one – except for the authors of 'Survival Italian', etc. – really does. It would be jumping to conclusions if we were to instruct would-be parents that they must not waste their time teaching their children language, and teachers that they need not bother to elaborate it because the kids are born with it anyway. Thanks to the astonishing nature of language, both sides are right, the researchers who tell us that teaching children language is unnecessary and the parents and teachers who spend so much time and effort doing just that. The disagreement between them is only apparent. This is so because to acquire language both are indispensable, our brain's physical equipment and our society – represented perhaps by a single caregiver – talking to us. Brain damage or genetic deformation and social deprivation will both make language acquisition impossible. Thus, language has two sides, the biological and the social, each of which must be studied in its own right. Geneticists and other life scientists interested in language are concerned with language in the singular, invariant in space and time. Likeminded linguists and cognitive scientists are devoted to the quest for the ground plan of language that is hard-wired in the brain. They speak of 'natural language' and some of them, therefore, call their field 'biolinguistics'. Its main task is to elucidate the 'faculty of language' which Noam Chomsky, the most influential linguist of this school of thought, has defined as follows: The faculty of language can reasonably be regarded as a 'language organ' in the sense in which scientists speak of the visual system, or immune system, or circulatory systems, as

organs of the body. (2000: 4) But compare the visual systems of the French and the Fulfulde and the Fukienese, and you will find that they are virtually identical. If, however, we compare the French, Fulfulde and Fukienese languages the differences are striking. Even French French and Quebec French differ in many ways. Biolinguists take notice of this diversity only in so far as it may help to clarify aspects of the abstract system of rules and principles underlying all languages. Their focus is on general immutable properties of language. Disregarding the still remote chances of genetic engineering to design a better language, no choice is possible here. Linguistic diversity must be dealt with, but, to the great embarrassment of linguistic scholarship, cannot be explained on linguistic grounds. If the faculty of language is part of our genetic heritage and an organ of the body, why does it come in so many vastly different guises? Why are languages so much more different than lungs and adrenal glands? The sobering fact is that there is no convincing answer to this question unless we open our eyes to the other side of language, the social one.

Language, the historical

Language has been defined by Ferdinand de Saussure, another great linguist of the twentieth century, as a 'social fact' (Saussure 1959: 6). This definition has many implications. For one, language comes into focus here as a means of communication, for social facts are those that can be studied only if we look at how people associate to form groups, how they communicate and how they act collectively. Investigating single individual or the species at large cannot reveal the social disposition of humanity. Language is a social fact in that every language

is a collective product, an artifact created by its speakers which, at the same time, enables higher forms of social planning and cooperation to evolve. Society is built on language. There is no human society that does not speak and use language as its central instrument of organization. Social behaviour has instinctive components, too, but those that are learned predominate. Being socialized means learning the ways of one's society, including its language. Just by following their instinct no one will ever learn Swahili. Every language must be learnt, and it is the society that

teaches its new members how to use it properly, how to conform with established conventions. Language, from a social point of view, is conventional, which is another way of saying that it could be different. Every language could be different from what it actually is. We know this because we know that today's languages were different in the past that they have changed and will continue to change. For the conception of language as a social as opposed to a natural fact this is of utmost importance. Social facts are historical facts. They have many contingent features. Biolinguistics ignores the historicity of language because it is interested in invariance, but to sociolinguistics the historical dimension of language is central. William Labov, one of the leading figures in this field, has identified as his primary goal 'to determine what happened in the history of language or language family' because 'the fact of language change is difficult to reconcile with the notion of a system adapted to communication' (Labov1994: 9).We experience language as a stable system that works and tend to think of different languages as distinct systems. Adaptation and change happen largely unnoticed. Yet, the fact of language change forces us to look at instability, deviation and loss of comprehension across generations (see chapter 4) and dialects (see chapter 2). The existence of different languages is a historical fact, a result of language change. The historical character of language and the fact that it must be learned are closely related. It is true that all people learn to speak, as pointed out above; but it is also true that the general ability to learn does not imply that we all learn the same, and equally well. There are good learners and not so good learners, and what they learn is never an exact replica of the model. For instance, the Germans learned from the French the word baguette, 'French bread'. They spell it like the French, and the pronunciation is very close, too. But they changed the gender. The French model is feminine, the German copy neuter. Why? Ignorance, perhaps. The Germans may have been unaware that a French baguette was feminine and simply given the new word the same gender as their own word for bread, das Brot, n. Perhaps more interesting structural reasons were involved, such as the asymmetry between the dual French gender system and the tripartite German one. Perhaps morpho-

phonological rules make themselves felt here. There are many neuter nouns in German ending, like baguette, in [-et], such as Bett, Fett, Brett, Kabinett, Skelettand Sonett, but I couldn't find a single feminine one. However this may be, the gender change of baguette didn't happen naturally. Somebody performed the operation. What the example illustrates is that learning often implies change. Since French and German are different languages it is not surprising that elements of one adapted to the other will undergo modification. But the same also happens within what presumably is one language. In England, sauce and source are usually homonyms, but in some parts of the United States they are distinct, source, true to the French original, but not sauce, having an audible [r]. Differences of this sort may or may not be indicative of ongoing change. The point here is the same as above, an explanation can be found. If both pronunciations coexist and continue to coexist for a long time it is hard to argue that one is systematically more essential or sound than the other. It is also hard to argue that these differences are superficial and unimportant, because it is sets of variations of this kind that, if they pile up, can lead to linguistic divergence, mutual unintelligibility, and hence the emergence of a new language. This is so because the distribution of source with and without[r] is not random. It distinguishes not individuals but groups of speakers. Every language is transmitted from one generation to the next by learning and has its unique history. These two facts go a long way to explaining linguistic diversity. Diversity means two things: the multiplicity of human languages – 6,000 is a conventional count – and the enormous variety of coexisting forms in every language. This diversity is the result of many contingent factors working on human speech behaviour. Being open to contingencies, language is neither deterministic nor random. Without such openness, not allowing for adaptation and innovation, it would be rapidly outdated. Luckily, in the process of learning, we do not just repeat what our elders said, but recreate our languages anew adapting them to our purposes and hence bring about change.

Migration and diversity

If we want to appreciate the great diversity of human languages we need to consider another factor, migration. According to a famous dictum attributed to George Bernard Shaw, England and America are two countries separated by the same language'. Most speakers of English are aware of the hiatus between British and American speech, but find it quite unremarkable because the cause is so obvious: the Atlantic Ocean. English, French, Spanish, Portuguese and Dutch in the New World aren't quite what they are in the old. We take it for granted that over long periods of time geographic isolation brings about linguistic divergence. People living in different environments speak about different things; in the process they mispronounce words, create new ones, reinterpret morphological forms, borrow lexical items from others and put them together to form sentences in novel ways. This must have been so from the beginning (assuming that the beginning of humanity can ever be lifted out of the realm of speculation[1]). Where a substantial body of population moves out of one territory and into another, driven by demographic pressure, commerce, or the incursion of invaders, it will take its language with it, but after some time this language ceases to be the same as that spoken in its original territory. From a theoretical point of view, this is remarkable because it means that social factors are involved in language change. If language change were deterministic, thrust towards a goal and governed entirely by quasi-natural laws inherent in the language system, as in the past historical linguists have claimed,[2] we should expect it to be unaffected by migration. In the event, English should continue to change along the same lines on both sides of the Atlantic. But as it turns out, once a group splits into two, language change is no longer synchronized. Since the two groups are stripped of the opportunity to adjust their speech to each other, the transmission and recreation of their language is propelled onto different trajectories.

Desires and norms

Migration usually induces language change, but a speech community's spatial contiguity and temporal continuity are no guarantee for maintaining linguistic homogeneity or a sufficient condition for bringing uniformity about. The obvious

function of language as a marker of distinction dividing one speech community from another comes to bear within a single speech community as well. The argument that linguistic variation will decrease with intensity of communication has often been made, but there are good reasons to doubt a causal relationship in this connection. For variation serves important social functions. In highly stratified societies such as the caste societies of India, it is quite possible for people to be in constant and regular communication over long periods of time without adopting each other's speech patterns. It would seem that communication leads to uniformity only when there is both the possibility and the desire for social assimilation. Where social norms put a premium on social distinctness, linguistic symbols of such distinctness tend to be maintained. (Gumperz 1967: 228)As we will see in the course of this book, it is not at all rare that linguistic distinctions withstand ostensible forces of homogenization. Why linguistic distinctions are maintained in the face of both homogenization pressure and the opportunities offered by uniformity is one of the key questions that brought the discipline of sociolinguistics into existence. Efficiency of communication would seem to call for a reduction, if not elimination, of potentially disruptive distinctions in the speech of individuals and groups. Yet, such distinctions persist. Two important notions in the passage quoted above are 'the desire for social assimilation' and 'social norms [that] put a premium on social distinctness'. Both are invoked as causal factors in the process of language change. Whose desire he refers to Gumperz does not tell us, but it is clear that speech communities, social groups and their members are at issue. In what sense an assemblage of individual desires can be understood as a collective desire is a difficult question to which we will return later. For the present purposes the important thing to note is that mental dispositions such as the desire for assimilation (or division) influence language change. Desires and the willingness to adhere to, or breach, social norms make a difference, since it is by virtue of its members having desires and preferences that the speech community reates and perpetuates its language. This is testimony to the intrinsically mental character of language. Speakers, rather than just being the bearers of abstract

structures removed from conscious reflection which constrains their speech behaviour, are active, knowledgeable, purposeful agents who make choices whenever they use language. The ability to do so is at the heart of the nexus between language and society, and it is the vantage point of this book. Speakers make choices. The subsequent chapters will show that this holds for every level of language, structural and stylistic (chapter 6), and beyond that for the registers and languages used by different groups and in different domains of society (chapter 11). Every language represents a choice of the potential held by universal grammar, and every individual's language represents a choice of his or her collectivity's language. Social norms are restrictions on individual choices making deviations that imperil communication unacceptable, if not impossible. Speakers cannot avoid making choices, for things can always be formulated differently. People high and low have strong feelings about the intentionality of their speech and they articulate what they believe they should, although they sometimes seem to belie their own words. 'I know what I believe. I will continue to articulate what I believe and what I believe – I believe what I believe is right.' So much for beliefs and articulation. US President George W. Bush articulated these words ona visit to Italy3 near the Forum Romanum where orators used to speak. Surely, they could have been chosen more adroitly, but chosen they were. Choice is the pivotal notion of sociolinguistics, and I will have to discuss this notion in some detail to see what it means with regard to human action, in general, and to speech behaviour and language, in particular. Before doing so, let me summarize the main points discussed so far concerning the different conceptions of language as a natural fact and a social fact.

Complementary approaches

In the language sciences it is sometimes thought that the two approaches dedicated, respectively, to the natural and the social sides of language are irreconcilable. I prefer to think that they are complementary because neither of them can by itself fathom out the whole complexity of language. The language sciences all have their

own notions of language allowing them to direct their attention to certain phenomena rather than to others, and there is no reason to believe in the superiority of one over another. It is necessary to emphasize this point because the sciences of historical complexity often occupy a lowly position in comparison with 'pure' and 'experimental' disciplines. A hierarchy that ranks biolinguistics or formal linguistics, as it used to be called, with the 'hard' sciences at the top and sociolinguistics with the 'soft' sciences at the bottom is useless and unjustified for two reasons. The late Stephen Gould, a professor of palaeontology, has formulated them clearly and elegantly. One is quoted at the beginning of this chapter:' Reality does not speak to us objectively, and no scientist can be freedfrom constraints of psyche and society' (Gould 2000: 276). The other is that 'historical events do not violate general principles of matter and motion, but their occurrence lies in the realm of contingent detail' (2000: 278). Gould's conclusion is this: Historical science is not worse, more restricted, or less capable of achieving firm conclusions because experiment, prediction, and subsumption under invariant laws of nature do not represent its usual working methods. The sciences of history use a different mode of explanation, rooted in the comparative and observational richness of our data. (2000: 279) Choice Since human bodies consist of particles, their behaviour should be explained in terms of particles and the laws governing their movements. There is no room for a mind with a free will. At the same time, Language as a natural fact Language as a social fact inborn learn genetically fixed culturally varied universal variable species-specific group-specific timeless historical governed by natural law governed by convention our everyday experience is that our reasonings and choices govern our behaviour, to a significant extent at least. This is the mind–body problem in a nutshell. No attempt will be made here to solve it, but we cannot altogether sidestep it, for, as we have seen, language has both a physical and a mental side, and these are not always easily kept apart. Sociolinguistics is the linguistics of choice, and, if only for that reason, we have to come to grips with the relationship of freedom of the will,[4]human action and language, for choice is a notion which presupposes an agent rather than an

automaton. The intricacy of the problem has been pinpointed by two scholars representing as it were the two sides, the neurologist John Eccles and the philosopher Karl Popper. Interestingly, they see the very origin of language indissolubly linked with choice. Here is what they say: We could say that in choosing to speak, and to take interest in speech, man has chosen to evolve his brain and his mind; that language, once created, exerted the selection pressure under which emerged the human brain and the consciousness of self. (Popper and Eccles1977: 13)Choosing to speak before you know what to say, let alone know what language is, seems quite a feat, but, on reflection, it may be quite common. The important point is that making choices is a central part of the human condition. Interestingly, Eccles and Popper's notion of choice does not require full control and foresight. This is important, for, while I don't want to take a position here as to whether or not ontogeny repeats phylogeny, I want to argue that babies make choices, because every line we draw to show where intentionality begins is arbitrary. Our choices are subject to restrictions of various kinds from birth. The division of labour in the language sciences can be understood in terms of the restrictions on possible linguistic choices. Physical and cognitive restrictions are the field of biolinguistics and cognitive science; social restrictions on linguistic choices are for sociolinguists to investigate. For instance, our lifespan, or, less dramatically, the need to sleep, puts natural restrictions on the length of our sentences. The range of speech sounds is restricted by our auditory system which is designed to perceive and process sounds in a range between 12 and 20,000 cycles per second. Structural restrictions are the subject matter of grammar studies. Some are very general, forming the theme of universal grammar, whereas others are applicable to some languages or a single language only. Gender agreement between article, noun and adjective is a good example. French bon [bOe] and bonne [bOn] are, respectively, the masculine and feminine forms of 'good'. It is bon mot, literally a 'good word', that is, a witty remark, but bonne action 'a good deed', because mot 'word' is masculine, whereas action 'deed' is feminine. Choice between [bOe] and [bOn] is not up to the speaker's taste, but determined by

agreement rules. Agreement rules are restrictions on choices. What they mean is that, if a language has a gender system, speakers are not free in their choices of gender forms of nouns and adjectives and articles. The requirement to match adjective and noun in terms of gender could be a peculiarity of French. Comparative studies reveal that it is much more common and typical of all languages that have a gender system. The central theme of sociolinguistics is variety. To the observer, language presents itself as a seemingly infinite variety of forms, but this variety is patterned. That is, there are restrictions on choices between coexisting varieties. For instance, English words like fast have, in standard British pronunciation, a long vowel [a:]. If you want to sound a bit archaic, or Australian, you can pronounce it with a short[a], and in some American varieties it borders on [æ]. Australians living in London tend to lengthen their [a] along with other adjustments they make to blend in with their environment. Such fine-tuning has to do with preferences and social norms rather than structural rules, which is not to say that it is random. Quite the contrary, in the absence of patterning we would be unable to recognize speakers for what they are. Speech varieties are powerful markers of group membership. Outsiders, particularly children, can be observed making great efforts to use the right words and give their pronunciation the right tinge to conform with the group they are trying to join. It can be done. But as George Bernard Shaw's Eliza Doolittle under the able and loving guidance of Professor Higgins found out, discovering, in the great variety of available choices, the socially acceptable one is essential. Professor Higgins, on a whim, bet his friend that Eliza, the flower girl with that ear-piercing drawl, could be transformed into a lady. The language was the key. With determination and linguistic genius she made him win his bet, substituting her native Cockney by the unmistakable accent of the upper class. Hers was one speaker's choice, remarkable and, though fictitious, of deep significance to the relationship of language, social class, gender and upward mobility, topics that will be dealt with in chapters 2 and 3 below. Eliza Doolittle is so noteworthy because her choice is readily recognizable as such, implying as it does a change in group affiliation. It is also remarkable

because the nuances of pronunciation were raised to the level of conscious manipulation. More commonly we leave these to the automatic pilot and stay with our group, because we see no reason or opportunity to do otherwise. Strictly speaking, this is also a choice which corresponds to the above remark that everything can always be formulated differently. It implies that every speaker has the ability to change the way he or she speaks. The choices speakers make in this regard are not made in a vacuum but are constrained in many ways.

I.2. What is psycholinguistics?

Psychologists have long been interested in language, but psycholinguistics as a field of study did not emerge until the 1960s. It was motivated by Chomsky's work in linguistics, and by his claim that the special properties of language require special mechanisms to handle it (e.g., Chomsky, 1959). The special feature of language on which Chomsky focused was its productivity. Possessed with a grammar, or syntax, humans can produce and understand novel sentences that carry novel messages. We do this in a way that is exquisitely sensitive to the structure of the language. For example, we interpret *The umpire helped the child to third base* and *The umpire helped the child on third base* as conveying distinct messages, although the sentences differ in just one small word. We know that *He showed her baby the pictures* and *He showed her the baby pictures* describe quite different events, even though the difference in word order is slight. We can even make some sense of *Colorless green ideas sleep furiously* (Chomsky, 1971), which is semantically anomalous but syntactically well formed. The same kinds of abilities are found at other levels of language. We combine *morphemes* (units of meaning) in systematic ways, and so understand Lewis Carroll's (1871/1977) *slithy toves* to refer to more than one tove that has the characteristics of slithiness. And we can combine phonemes (units of sound) according to the patterns of our language, accepting *slithy* but not *tlithy* as a potential English word.

Aitchison (1990: 333) defines psycholinguistics as the study of language and mind, which "aims to model the way the mind" works in "relation to language". Looking at this definition, it is obvious that her view of psycholinguistics is that

which maps out the strategizing of language usage as well as language comprehension. To her then, anything that the mind does in relation to language is psycholinguistics. She further distinguishes between psycholinguistics and neurolinguistics. Her point of contention is that while neurolinguistics seeks to link language to brain functioning and its influence on language, psycholinguistics measures the unobservable operations of the mind as it relates to the human language experience. It is obvious then that the human brain relates to language in a physically observable manner as is seen in the language of aphasics, while psycholinguistics has many nuances in linguistic employment of humans that may not be possible to measure in a realistic manner. One could agree with this observation as the manner in which medical science could measure language related task of humans is not realistically possible in psycholinguistics. This has thus resulted in so many controversies concerning the subject as it relates to its source in the work of psychologists and linguists.

Aitchison (1990) also claims that psychologists attempt to study the language of humans in the laboratory environment has proven unrealistic. This she notes has made it obvious that language is a social phenomenon which needs to be observed beyond the walls of the laboratory. For, according to her, it is effectively frustrating to psychologists who found that a realistic state of affairs in terms of finding how the human mind works in relation to their language production and comprehension could not give the correct data in a laboratory environment.

Another important issue we need to consider here is that, while psychologists maintain that laboratory study of the human language is the best way to elicit data for psycholinguistic study, linguists continue to favour a descriptive study of the human language as they see the more naturalistic study of language as providing best evidence for trustworthy data in psycholinguistic study. Even though psychologists have always looked at laboratory experiments as the most acceptable, the reality is that linguistics that best fits and likely to show a realistic state of affairs in terms of human language usage may be best elicited from human beings in real situations. Descriptive linguistics thus provides the most sensible

manner of collecting psycholinguistic data. Having said this, one needs to also state that the linguist as a source of data is still tenable. When one considers the way language death is spreading to the languages of the world, a time may come, and as Crystal (2000) has even already reported, the time may already be with us, when there may be only one speaker of a language of the world. And clearly, it is from the assumed internal processing of the linguistic usages of the informant of that particular language that is on the verge of extinction that the psycholinguistic operations would have to be deduced. As Lang (1994) asserts, language operates in a social form even while presenting its psychological foundation. It is however this psychological foundation that psycholinguistics seeks to unravel.

To Hawkins (1994), the internal processing is an important means of unravelling the meaning content in a linguistic context. Human psychology thus retains its important 16 position in human communication process. Vygotsky (1962) actually avers that communication with language only makes meaning in relation to deciphering the communicative intentions of the speaker. This essentially refers to the psychological basis of language use by both speaker and hearer.

Even though many scholars have found Chomsky's (1965) cognitive base for language use objectionable on many fronts, especially his claims of exclusive dominance of competence over performance in language usage, the fact is that his recognition of the important role of the human mind in the psychological base for human language performatives is very insightful. Halliday's (1971) ideational concept appears to lean towards this view too even though he views the sociological foundation of language as a stronger base of human language operations. As Daniel (2009) firmly notes, the two bases are important in true linguistic inquiries. The link between the two foundations of language obviously affects the way we communicate. As such, linguistic acquisition, processing, comprehension and production are all intertwined. We may thus be able to aver that psycholinguistics is essentially about language usage of human beings and how it is affected by their psychological dispositions to its acquisition,

comprehension and production. The next section gives a graphical representation o4.0 CONCLUSION

This unit discusses the definition of psycholinguistics. It should be obvious that psycholinguistics is not an easy concept to define. Nonetheless, it is also clear that an important link between psychological studies and the linguistic studies was successfully forged to create this new field called psycholinguistics. The attempt by authors to relate the field to individuality is also apparent. However, the collective mind is also a possibility as shown by some of the authors. You may therefore ask further questions on how to resolve the issues raised in this work. This will show that you are not a passive learner in this course.

5.0 SUMMARY

This unit discusses in detail the definition of psycholinguistics. It also brings to the fore the many attempts of scholars to define the field. One sure issue that is not hidden in this work is the fact that psycholinguistics is a link between the human psychology or the human mind and the human language. f how the mind relates with language in functional terms.

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Psycholinguistics as a scientific endeavour started as far back as the 18th century. Aitchison (1990) asserts that the first known experiment in psycholinguistics was conducted by the German philosopher, Dietrich Tiedemann. He actually used his son as the experiment. In his study, he carefully recorded the linguistic development of his son along with other developmental characteristics that he exhibited. The first experimental record in psycholinguistics is nonetheless credited to the British psychologist Francis Galton (1822-1911).

However, it was only recently, precisely the middle of the 20th century, that the field got serious attention from scholars. It was believed that Noam Chomsky is the father of psycholinguistics. The general feeling and belief is that the field grew 19 out of the research efforts of Noam Chomsky in linguistics and philosophy of language (Aitchison, 1990).

 In agreement with Aitchison, Reber (1987) asserts that psycholinguistics has its beginning pre-20th century but nevertheless re-invented itself in the middle of the century. By the 1950s and 1960s, the field has grown in leaps and bounds due to the assiduous work of such scholars like Noam Chomsky, Zelig Harris, George Miller, Karl Lashley, Charles Osgood, John Carroll, Thomas Sebeok, and Herbert Simon among a host of others. Though, in his view, which appears to be Roger Brown's as noted by Reber, psycholinguistics seems an aberration as a name to call the emerging field that linked psychology to linguistics. It is better to have used such a term like psycho-linguistics, with an hyphen separating and indicating

the hybrid nature of the discipline in order for it not to seem like a 'deranged polyglot' as claimed by Roger Brown (1958) (in Reber, 1987: 326).

In Reber's view, psycholinguistics started to decline by the 1970s as many questions seemingly trail it. He nonetheless acknowledged that scholarship of Chomsky did not decline. And considering Chomsky is always in 'bold relief' when discussing the scholarship of psycholinguistics, one finds it difficult to agree with his claim that the field is in decline.

As a scholar of language, you are therefore encouraged to explore the relevance of psycholinguistics to the present linguistic studies. As much as many would like to discountenance the psychological aspect of linguistic studies and subsume it to the sociological performance, Daniel (2008) proves that the relevance of psychology to linguistic studies is without doubt paramount to the full understanding of linguistic inquiries.

You may therefore need to ask yourself some very pertinent questions as you go through this course. What actually is the relevance of psychology to linguistic studies? How much of psychology is relevant to the social study of language? What basis is there to look at psycholinguistics as a distinct course on its own? Is the course really useful to your life as a person? I am sure that by the time you have gone through this course, you should find answers that you seek.

Factors Responsible for the Emergence of Psycholinguistics

A critical look at the emergence of psycholinguistics will indicate that some important factors are responsible for its emergence. We looked at the beginning of the field. In this section, we intend to look at the factors that led to the emergence of the field. Like any academic field of study, there are always problems that require solutions. When it is said that necessity is the mother of invention, it appears the inventor of the saying did not have psycholinguistics in mind. However, it is obvious that all fields of human endeavour are always created out of 20 a need to be met. The question then is, what factors could be said to be responsible for the emergence of the psycholinguistics field.

Noam Chomsky's Work in Cognitive Linguistics

One major factor is the work of Noam Chomsky. Aitchison (1990) asserts that a direct factor that affected the development of psycholinguistics is the impactful work of Noam Chomsky in linguistics. His cognitive linguistics greatly affected the way the field of psycholinguistics developed. Reber (1987) acknowledged the influence of Chomsky in the development of psycholinguistics. It is thus obvious that the growth of Transformational Generative Grammar, with its focus on the cognitive ability of the native speaker to properly use their language brought the psychological basis of the linguistic performance into great focus. Aitchison actually used the term 'inspired' (1990: 334) to describe the impact of Chomsky's influence in directing research efforts of various scholars in this direction. In this wise, research into child language usage became popular in that period.

Nonetheless, in line with the assertions of Reber (1987), the field begin to suffer splintering and disillusionment from different scholars and thus led to a loss of focus. Aitchison notes that many of the Chomsky-inspired work could not be really given conclusive evidence to his theories and proposals (cf. Aitchison, 1989). In addition, psychologists became disillusioned with the fact that psycholinguistics focus was to test hypotheses advanced by theoretical linguistics. Naturally, the field of psycholinguistics began to suffer from such negative attitude. As such, recent years saw different people actually working with their mind on psycholinguistic study but with diverse philosophical traditions as their base of approach. Modularity of Language

Despite the varying approaches to psycholinguistic study, it is generally agreed among scholars that language is modular in nature. What this means is that the human language system is made up of a number of separate but interacting components. When one looks at Chomsky's (1981) work, a full description of the nature and manner in which these modules interact is explained in details. It is thus a firm base for psycholinguistic inquiry as it exposes the manner in which these linguistic components operate among one another. It could thus be seen that

Chomsky remains an important factor in the way the field continues to develop over the years.

Aitchison (1990) nonetheless notes that despite this apparent agreement among scholars on the modular nature of the human speech, the integration of the modules has become a point of contest among scholars of language. While some scholars believe that these components are separate with links between them, others are of the view that encapsulation is the watch word in which each module works automatically and independently, with its content sealed off from that of other modules. The issue nonetheless is that, scholarship does not have an end. You may therefore look at the two arguments above and research into that which you think is the most likely in your own language. Remember that the human language is universal in nature; this is an important point that scholars cannot dispute over. You can thus apply these principles to your own language and ascertain the veracity of these claims.

Self Assessment Exercise

Outline two important factors responsible for the emergence of psycholinguistics as a field of study.

3.3 Scholars Credited with the Development of Psycholinguistics

In this section, we will be talking about the scholars that have been given the credit of developing psycholinguistics as a field. It is important to do this because, as a scholar, it is important that you always acknowledge the contribution of others, no matter how minute you may consider it. It is after all their intellectual property. Doing otherwise will be considered stealing. And stealing people's ideas without acknowledging it as theirs is as bad as stealing a bowl of *gari* from the market.

As you would have noticed, some irreprehensible names have continued to crop up in our discussions above. We will nevertheless bring to the fore the names of as many of these linguists and psychologists that have enabled the psycholinguistic field of study to find its feet, a manner of speaking, in the comity of other disciplines.

Noam Chomsky naturally takes the lead. His series of works on Transformational Generative Grammar easily form a basis for the development of the psycholinguistic field. The work had been criticised greatly for being mentalistic (cf. Olaoye, 2007 among others). Nonetheless, the fact that this mentalistic grammar and the propounding of theories related to it gave psycholinguistics its firm base cannot be wished away. It is thus obvious that the credit for the popularisation of the psycholinguistic discipline will not be misplaced if given to Noam Chomsky. Aitchison (1990) and Reber (1987) views on the matter lend credence to this position.

It is nevertheless necessary to also state that this very mentalistic nature of Chomsky's propositions have been the major quarrel linguists and some other scholars have with his theories on grammar. As much as the discussion here is not about Chomsky's syntactic theory, it cannot be ignored that the very nature of his propositions is fundamental to the growth of the field under consideration. One may however be cautious in making assertions in the light of Reber's (1987) view that psycholinguistics as a discipline has fallen into disfavour since the early sixties when Chomsky raised the stakes of the field so high.

We will nevertheless consider other linguists that have contributed their quota to the growth of the field. Vygotsky is another scholar that may be considered such a

major contributor to the field. His study on the mind and its relation to communication easily gives us such an impression to add him to the list. Aitchison is another great contributor to the development of the field as much of her work has been in this area. Reber (1987) gives credit to such other scholars like Zelig Harris, George Miller, Karl Lashley, Herbert Simon, Charles Osgood, John Carroll, and Thomas Sebeok.

Self Assessment Exercise

Discuss the contributions of any two scholars to the development of the psycholinguistics as a field.

4.0 CONCLUSION

This unit discussed the history of psycholinguistics. It traced its history from the earliest stage of its development from the 18th century. It discussed the factors that led to its emergence. Obviously, a need to link the human mind to language development and use gave rise to the field. The way and manner Noam Chomsky's work in theoretical linguistics helped to fast track the development of the field through inspiring the spate of work in the area was also focused on. It is thus obvious that psycholinguistics as a field has a strong link with Transformational Generative Grammar developed by Chomsky.

5.0 SUMMARY

This unit presented the historical profile of psycholinguistics. It discussed its root in the work of such linguists like Dietrich Tiedemann and Francis Galton. It extensively presented the larger than life influence of Noam Chomsky's work in theoretical linguistics on the developmental process of psycholinguistics. It outlined the scholars whose works greatly helped the field to develop.

TUTOR MARKED ASSIGNMENT

1. Give a brief discussion on how psycholinguistics started.

2. Some factors could be attributed to for the emergence of the psycholinguistic field. Outline these factors in a clear manner.

3. Identify the scholars you would consider as playing major roles in the development of psycholinguistics as a field of study.

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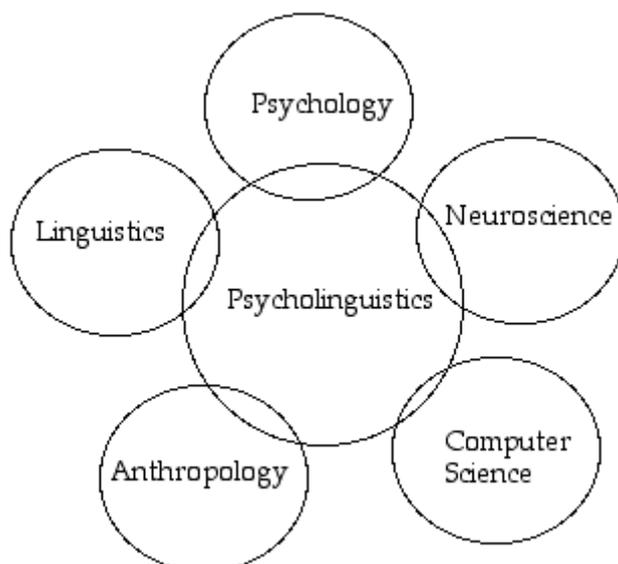
III.   2. Acquiring language.

3.3 The Speech Production Processes

Aitchinson (1990) avers that speech comprehension and speech production cannot be regarded as two sides of a coin. She opines that they actually have some dynamics operating in each of them. She also notes that there is the tendency to concentrate on the discussion of speech comprehension at the expense of speech production. However, this position seems at variance with Steinberg, Nagata and Aline (2001) who posit that comprehension is the underdog in the study of speech production and comprehension processes. Nonetheless, this debate is not the focus of this Unit. Aitchison (1990) suggests that there are two broad processes involved in speech production. These are lexical selection and assemblage.

3.3.1 Lexical Selection

The idea is that lexical selection process has been viewed as possibly an important means of determining speech production processes in that the tip of the tongue phenomenon suggest that there is an attempt to choose particular words that fit into the intended meaning but the wrong or related in terms of meaning or sound may be chosen instead. This is why someone may say *knife* instead of *wife* or as is often the case with many of us, in answering an older caller, we may say *sir* to a woman instead of *ma* or vice versa. It thus shows that there is some relationship in the choices made by speakers in their production of speech. Aitchison (1990) also reports that some scholars have suggested that all possible sounds related to what the speaker has in mind to say are activated at the same time. She nonetheless wonders at the possibility of such occurrence as it could lead to the cumbersomeness of choice on the part of the speaker. Her view is that the actual thing that happens is that the speakers of the language appear to have the ability to suppress the word not required immediately in order to select that which best fits the communication intentions of the speaker. Nevertheless, an important point made by Aitchison is her observation that verbs seem to form a fulcrum in that they get selected first and thus less liable to error in production. In addition, she notes that the speakers of the English language tend to have the ability to provide a word in the case where an existing word may not be readily available. This should clearly explain the creativity often observed in the users of the language. It affirms the reality of the dynamism of language. As such, saying that "Children use *deduceful* rules" (Aitchison, 1990:352), where one means to say the word *deductive* is a situation saving device to allow the communication process to move on without interruption. Pragmatics thus becomes a useful tool in psycholinguistic analysis as it is obvious that there will be no communication breakdown in such a situation as the cooperative principle will easily enable the co-interlocutor(s) to supply the required correct word in their minds to interpret the meaning content of the statement.

3.3.2 Assemblage

The slip of tongue phenomenon gives the easiest clue to the assemblage process. It involves words, morphemes, syllables and phonemes. There are about three possible manners in which the process occurs. These include anticipation, perseverations and transpositions (Aitchison, 1990). Anticipation has to do with when an item comes earlier than expected while perseverations is the wrong repetition of a linguistic item. Transpositions tend to involve a situation where items substitute one another.

Examples of these occurrences include:

He took *sail* out of his *winds*. (Transposition)

Aitchison (1990) outlines some tendencies that characterise the occurrence of errors in speech production. She asserts that:

a. Anticipation generally outnumbers perseverations, noting that some anticipations may actually be unfinished transpositions

b. Errors normally occur within tone-groups

c. Units of errors tend to be of approximate equal size, with equal metrical pattern

d. Sound slips are usually obedient to the rules of syllable positioning

e. They also obey the laws of English syllable structure

f. The words formed by slips of tongue are usually more patterned than chance occurrences.

All these suggest that the human speech production process is actually orderly, making anticipation prominent and giving verbs a fulcrum position that allows for other syntactic and phonemic elements to be filled in as the production process unfolds. In addition, there is a suggestion of a rhythmic patterning, following a hierarchical ordering.

The suggestion then is that the human processing of the language production tends to be that of 'scan-copying mechanism' (Aitchison, 1990). The ability to self-correct also shows that there is a monitoring mechanism in the process of speech production.

The question we need to ask ourselves at this point is: what is the difference between error and mistake? Aitchison (1990) appears to see them as same. But we hold differently that errors being fundamental and thus suggestive of perseveration are due to linguistic incompetence, mistakes are those that are possible to correct in the production process as some of the factors that predispose to slips of tongue are at the root of such slips and not incompetence on the part of the speaker. Clearly, then, it will seem that this dichotomy in the nomenclature of apparent performance fault lines need to be clearly defined.

Language Acquisition

Language acquisition is considered a normal process in development. When it is delayed or never started in children, it is usually seen as a source of concern by the adult (Scovel, 1998). Developmental psycholinguistics is considered the field that appropriately studies this phenomenon.

The assumption here is that there are stages of human speech development. Even though in their study Steinberg et al (2001) have tried to show that the stage of language learning or acquisition by children involves the neonate stage, Scovel argues for a later stage. He notes that the literature has put the stage at which children actually begin to manifest their acquisition of their mother tongue as eighteen months. The question is: what was happening before this time?

As argued by Steinberg et al (2001), it appears that the children are soaking up all the linguistic input from their environment. It thus makes it such a landmark when the child utters its first complete word. However, as noted by Scovel, the period before this time is actually foreshadowed by some kinds of communication. The author calls the initial sounds made by the child as iconic as it merely expresses signs of discomfort or sudden outbursts that may seem inexplicable. The following stage from about two months is that stage at which the child can now express some communication pattern in terms of the child being able to link randomly its expressions to its needs. This crying stage is thus considered the precursor to the

actual human speech. It thus prepares the child for the time it can effectively make use of its vocal organs among the human species.

The question is then that: did the child pick up this ability to speak from its environment or is it naturally predisposed to this skill? Chomsky (1965) has proposed that all human beings have the congenital ability to acquire language due to a naturally inbuilt mechanism called the Language Acquisition Device (LAD). Chomsky (1981) later modified this to Universal Grammar (UG) which Scovel (1998) describes as a more appropriate term. Indeed, as argued by Scovel (1998), human beings indeed possess this device as no human being actually lacks the ability to speak eventually if the linguistic inputs are provided except in a situation where a congenital malformation occurred, which could result in the inability of the person to ever master the neuromuscular skills required for speech production. Nonetheless, when the required environment is made available, the human element tends to develop speech and move from the iconic stage to the symbolic communicative stage. This turning point is usually achieved with the first words of the child (Scovel, 1998). Nonetheless, the children tend to be egocentric in doing their language initiation: their focus tend to be on their world. Anything outside that world never seems to get a labelling.

Evidence that language acquisition may actually be innate to all humans, as argued by Chomsky and his co-travellers, could be seen in the example of swimming and playing of piano or drum, as noted by Scovel (1998), is very pertinent. He points out that not everybody eventually learns to swim or to play any of the musical instruments mentioned above; but it is rare for anyone not to be able to acquire language except where the environmental linguistic input is available except there is a congenital hindrance. In addition, the fact that every attempt to teach the chimpanzee nicknamed Nim Chimsky (after Noam Chomsky) language proved abortive whereas the human child appeared already predisposed to complex linguistic structures through a regular patterning of its structures even at age two. Scovel insightfully observes that

in comparing these two sets of data, we are led to the inescapable conclusion that even at a very young age, before they have any conscious awareness of the difference between parts of speech such as nouns and verbs, young humans very rapidly acquire the notion that words do not combine randomly but follow a systematic pattern of permissible sequences (1998: 16).

This proves two things: that the language ability in the human species starts early as well as determinedly so advance that animals of the lower class are never able to attain such linguistic skill because nature did not provide for such ability in them. It also goes to show that children tend to follow the pattern of their target language in terms of the phonology and the syntax.

In addition, as noted by Scovel, creativity is also a mark of the child's acquisition of language. He notes examples such as the one from Reich (1986:142): 30

Daughter: Somebody is at the door

Mother: There's nobody at the door.

Daughter: There's *yesbody* at the door.

(Scovel, 1998: 19)

There is no evidence that the child learnt this particular word from anyone. It will appear that what the child tried to do is to insist or emphasise by bringing the syntactic initial *yes* in a tag into play and combining same to create the new word *yes body* in contrast to the mother's *nobody* as its own emphatic stress.

Scovel also gives another example of such advanced creativity that took the father of the child a bit of time to puzzle out its ungrammaticality while seeing its acceptability. *There Carlos is!* said by a child is actually a replacement of the usual pronominal with a nominal in the sentence as explained by Scovel. And following his analysis of the pattern as shown below, it shows the child's ability to create not just new words but also adapt sentence structures for its utilitarian communication purposes. The patterns are:

Pattern A: There's Carlos! [There's/Here's + Noun]

Pattern B: There he is! [There/Here Pronoun + is]

Pattern C: *There Carlos is! [There/Here + Noun + is]

(Scovel, 1998:20)

*The asterisk is used to mark ungrammaticality in structures.

Looking at the examples above, it is easy to see that the child has actually combined the structures of Patterns A and B to form a new one in Pattern C. As argued in Daniel (2012), communicative contingency at times determines linguistic choices more than grammatical correctness. It appears that children's ability to do this efficiently in their linguistic production may supersede that of adults greatly. And why not, if it serves their purposes.

Another important issue that needs to be dealt with here is the issue of stages in acquisition. Following Klima and Bellugi (1966), Scovel observes that there are about three stages in language acquisition. He notes that for both the child linguistic acquirer and the adult language learner, the stages appear fixed and cannot be jumped, even if individual ability seems to determine the rate of acquisition for each person.

The three stages are:

Stage 1: use of NO at the start of sentence

No the sun shining

No Mary do it.

Stage 2: use of NO inside the sentence but no auxiliary

Where will she go?

Why Doggy can't see?

Why you don't know?

Stage 3: use of WH word and auxiliary verb before subject

Where will she go?

Why can't Doggy see?

Why don't you know?

(Scovel, 1998:23)

One important point made by scholars here is that none of these stages are ever skipped. The length of time an individual uses in each stage is determined by the individual cognitive level. Scovel also avers that an adult learning a new language actually undergoes each of these stages. It is thus obvious that it is not age that determines the language acquisition process, but the progression ability of individuals. Eventually, keeping at it is the important thing as every faithful learner of a new language can eventually gain proficiency in it.

This brings to the fore the debate on the critical period. However, when we look at the universal stages outlined above and the fact that an adult learner of a new language can actually go through these stages and possibly attain proficiency, the question of the critical period for language learning seems suspect. Critical period is supposed to be that period after adolescence when a person can no longer master the learning of a new language. The evidence of people at very mature stages of their lives getting into new communities and linguistically integrating abound. In our view, the only thing, beyond the congenital factor, that can hinder an individual from attaining proficiency in a new language learning situation is actually more psychological than biological. Thus, when a language's relevance to the social advancement of the learning appears invisible, the learner may lack the motivation to learn such a language. If the social prestige of such a language is suspect, the learner may have no desire to master the language. A myriad of reasons could be adduced for why a learner may have low motivation for learning a new language; these reasons are however likely to be sociolinguistic rather than biological. All we are saying here is that to us the critical stage period appears fallacious and should be discarded as a factor in psycholinguistic inquiry. You may of course test the points made by looking within your environment to find out if there is stage or age in life when the members of your community lack the wherewithal to master a new language introduced into the community.

Self Assessment Exercise

1. State the role played by the Language Acquisition Device and the way it works in the modern linguistic theories.

2. Identify and exemplify with about three structures the proficiency stage in the language learning stages, contrasting the structural examples with the likely initial stage in the language acquisition process.

32

4.0 CONCLUSION

This unit discussed the three main linguistic processes involved in human language usages. These are the comprehension, the production and the language acquisition processes. It was found that the comprehension processes is the most widely discussed in the literature because it can easily be seen in terms of the reaction of the interlocutor to stimuli. However, the discussion of the production processes indicate that the seeming errors made by speakers tend to inform on them about the actual processes that the human mind engage in in producing speech. The language acquisition process is seen to enable the human being to acquire language. It reveals the innate ability of man to move to the symbolic stage of communicative ability of man. In addition, the human ability to be dynamic in linguistic usages is revealed as starting early through the young human's ability to create new words to meet particular communicative needs per time. The conclusion is thus that the whole linguistic processes end up being essentially to the end of human beings exchanging information through communication.

5.0 SUMMARY

This unit presented the three main processes involved in the language usage by the human. It discussed the language comprehension processes and how human beings have been able to capture the essence of language through interpreting the intended meaning of the speaker. It discussed the ability of man to produce speech through some systematic linking of thoughts to result in language. It shows how such involuntary acts like the slip of tongue reveal the processes involved in human

beings bringing together their thoughts to communicate. It discussed the language acquisition process engaged in by individuals in acquiring or learning a new language. It argues for the innate ability of the human specie to acquire language. It exposes the processes involved in this task and the important three stages that the human being must pass through in order to attain proficiency in language learning.

6.0 TUTOR MARKED ASSIGNMENT

1. State the three processes involved in psycholinguistic inquiry

2. Briefly discuss the comprehension process

3. Carefully outline the processes involved in the production of speech

4. Explain the language acquisition process and the essential function of Universal Grammar in the whole process.

7.0 REFERENCES/FURTHER READING

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II. 3. Language comprehension.

LANGUAGE COMPREHENSION

Spoken Word Recognition

The perception of spoken words would seem to be an extremely difficult task. Speech is distributed in time, a fleeting signal that has few reliable cues to the

boundaries between segments and words. The paucity of cues leads to what is called the *segmentation problem*, or the problem of how listeners hear a sequence of discrete units even though the acoustic signal itself is continuous. Other features of speech could cause difficulty for listeners as well. Certain phonemes are omitted in conversational speech, others change their pronunciations depending on the surrounding sounds (e.g., /n/ may be pronounced as [m] in *lean bacon*), and many words have "everyday" pronunciations (e.g., *going to* frequently becomes *gonna*). Despite these potential problems, we usually seem to perceive speech automatically and with little effort. Whether we do so using procedures that are unique to speech and that form a specialized speech module (Liberman & Mattingly, 1985; see also Chapter 9), or whether we do so using more general capabilities, it is clear that humans are well adapted for the perception of speech. Listeners attempt to map the acoustic signal onto a representation in the mental lexicon beginning almost as the signal starts to arrive. The *cohort model*, first proposed by Marslen-Wilson and Welsh (1978), illustrates how this may occur. According to this theory, the first few phonemes of a spoken word activate a set or cohort of word candidates that are consistent with Treiman et al., Psycholinguistics, that input. These candidates compete with one another for activation. As more acoustic input is analyzed, candidates that are no longer consistent with the input drop out of the set. This process continues until only one word candidate matches the input; the best fitting word may be chosen if no single candidate is a clear winner. Supporting this view, listeners sometimes glance first at a picture of a candy when instructed to "pick up the candle" (Allopenna, Magnuson, & Tanenhaus, 1998). This result suggests that a set of words beginning with /k{n/ is briefly activated. Listeners may glance at a picture of a handle, too, suggesting that the cohort of word candidates also includes words that rhyme with the target. Indeed, later versions of the cohort theory (Marslen- Wilson, 1987; 1990) have relaxed the insistence on perfectly matching input from the very first phoneme of a word. Other models (McClelland & Elman, 1986; Norris, 1994) also advocate continuous mapping between spoken input and lexical representations,

with the initial portion of the spoken word exerting a strong but not exclusive influence on the set of candidates. The cohort model and the model of McClelland and Elman (1986) are examples of interactive models, those in which higher processing levels have a direct, "top-down" influence on lower levels. In particular, lexical knowledge can affect the perception of phonemes. A number of researchers have found evidence for interactivity in the form of lexical effects on the perception of sub lexical units. Wurm and Samuel (1997), for example, reported that listeners' knowledge of words can lead to the inhibition of certain phonemes. Samuel (1997) found additional evidence of interactivity by studying the phenomenon of *phonemic restoration*. This refers to the fact that listeners continue to "hear" phonemes that have been removed from the speech signal and replaced by noise. Samuel discovered that the restored phonemes produced by lexical activation lead to reliable shifts in how listeners labeled ambiguous phonemes. This Treiman et al., finding is noteworthy because such shifts are thought to be a very low-level processing phenomenon. Modular models, which do not allow top-down perceptual effects, have had varying success in accounting for some of the findings just described. The race model of Cutler and Norris (1979; see also Norris, McQueen, & Cutler, 2000) is one example of such a model. The model has two routes that race each other -- a pre-lexical route, which computes phonological information from the acoustic signal, and a lexical route, in which the phonological information associated with a word, becomes available when the word itself is accessed. When word-level information appears to affect a lower-level process, it is assumed that the lexical route won the race. Importantly, though, knowledge about words never influences perception at the lower (phonemic) level. There is currently much discussion about whether all of the experimental findings suggesting top-down effects can be explained in these terms or whether interactivity is necessary (see Norris et al., 2000, and the associated commentary). Although it is a matter of debate whether higher-level linguistic knowledge affects the initial stages of speech perception, it is clear that our knowledge of language and its patterns facilitates perception in some ways. For example, listeners use

phonotactic information such as the fact that initial /tl/ is illegal in English to help identify phonemes and word boundaries (Halle, Segui, Frauenfelder, & Meunier, 1998). As another example, listeners use their knowledge that English words are often stressed on the first syllable to help parse the speech signal into words (Norris, McQueen, & Cutler, 1995). These types of knowledge help us solve the segmentation problem in a language that we know, even though we perceive an unknown language as an undifferentiated string.

Printed Word Recognition

Speech is as old as our species and is found in all human civilizations; reading and writing are newer and less widespread. These facts lead us to expect that readers would use the visual representations that are provided by print to recover the phonological and linguistic structure of the message. Supporting this view, readers often access phonology even when they are reading silently and even when reliance on phonology would tend to hurt their performance. In one study, people were asked to quickly decide whether a word belonged to a specified category (Van Orden, 1987). They were more likely to misclassify a homophone like *meet* as a food than to misclassify a control item like *melt* as a food. In other studies, readers were asked to quickly decide whether a printed sentence makes sense. Readers with normal hearing were found to have more trouble with sentences such as *He doesn't like to eat meet* than with sentences such as *He doesn't like to eat melt*. Those who were born deaf, in contrast, did not show a difference between the two sentence types (Treiman & Hirsh-Pasek, 1983). The English writing system, in addition to representing the sound segments of a word, contains clues to the word's stress pattern and morphological structure. Consistent with the view that print serves as a map of linguistic structure, readers take advantage of these clues as well. For example, skilled readers appear to have learned that a word that has more letters than strictly necessary in its second syllable (e.g., *-ette* rather than *-et*) is likely to be an exception to the generalization that English words are typically stressed on the first syllable. In a *lexical decision task*, where participants must quickly decide whether a letter string is a real word, they perform better with

words such as *cassette*, whose stressed second syllable is spelled with *-ette*, than with words such as *palette*, which has final *-ette* but first-syllable stress (Kelly, Morris, & Verrekia, 1998). Skilled readers also use the clues to morphological structure that are embedded in English orthography. For example, they know that the prefix *re-* can stand before free morphemes such as *print* and *do*, yielding the two-morpheme words *reprint* and *redo*. Encountering *vive* in a lexical decision task, participants may wrongly judge it to be a word because of their familiarity with *revive* (Taft & Forster, 1975). Although there is good evidence that phonology and other aspects of linguistic structure are retrieved in reading (see Frost, 1998 for a review), there are a number of questions about how linguistic structure is derived from print. One idea, which is embodied in dual-route theories such as that of Coltheart, Rastle, Perry, Langdon, and Ziegler (2001), is that two different processes are available for converting orthographic representations to phonological representations. A lexical route is used to look up the phonological forms of known words in the mental lexicon; this procedure yields correct pronunciations for exception words such as *love*. A nonlexical route accounts for the productivity of reading: It generates pronunciations for novel letter strings (e.g., *tove*) as well as for regular words (e.g., *stove*) on the basis of smaller units.

This latter route gives incorrect pronunciations for exception words, so that these words may be pronounced slowly or erroneously (e.g., *love* said as /lov/) in speeded word naming tasks (e.g., Glushko, 1979). In contrast, connectionist theories claim that a single set of connections from orthography to phonology can account for performance on both regular words and exception words (e.g., Plaut et al., 1996; Seidenberg & McClelland, 1989). Another question about orthography-to-phonology translation concerns its grain size. English, which has been the subject of much of the research on word recognition, has a rather irregular writing system. For example, *ea* corresponds to /i/ in *bead* but /E/ in *dead*; *c* is /k/ in *cat* but /s/ in *city*. Such irregularities are particularly common for vowels. Quantitative analyses have shown, however, that consideration of the consonant that follows a vowel can often help to specify the vowel's pronunciation (Kessler & Treiman,

2001; Treiman, Mullennix, Bijeljac- Babic, & Richmond-Welty, 1995). The /E/ pronunciation of *ea*, for example, is more likely before *d* than before *m*. Such considerations have led to the proposal that readers of English often use letter groups that correspond to the syllable *rime* (the vowel nucleus plus an optional consonantal coda) in spelling-to-sound translation (see Bowey, 1990; Treiman et al., 1995, for supporting evidence). In more regular alphabets, such as Dutch, spelling-to-sound translation can be successfully performed at a small grain size and rime-based processing may not be needed (Martensen, Maris, & Dijkstra, 2000). Researchers have also asked whether a phonological form, once activated, feeds activation back to the orthographic level. If so, a word such as *heap* may be harder to process than otherwise expected because its phonological form, /hip/, would be consistent with the spelling *heep* as well as with the actual *heap*. Some studies have found evidence for feedback of this kind (e.g., Stone, Vanhoy, & Van Orden, 1997), but others have not (e.g., Peereman, Content, & Bonin, 1998). Because spoken words are spread out in time, as discussed earlier, spoken word recognition is generally considered a sequential process. With many printed words, though, the eye takes in all of the letters during a single fixation (Rayner & Pollatsek, 1989). The connectionist models of reading cited earlier maintain that all phonemes of a word are activated in parallel. Current dual-route theories, in contrast, claim that the assembly process operates in a serial fashion such that the phonological forms of the leftmost elements are delivered before those for the succeeding elements (Coltheart et al., 2001). Still another view (Berent & Perfetti, 1995) is that consonants, whatever their position, are translated into phonological form before vowels. These issues are the subject of current research and debate (see Lee, Rayner, & Pollatsek, 2001; Lukatela & Turvey, 2000; Rastle & Coltheart, 1999; Zorzi, 2000). Progress in determining how linguistic representations are derived from print will be made as researchers move beyond the short, monosyllabic words that have been the focus of much current research and modeling. In addition, experimental techniques that involve the brief presentation of stimuli and the tracking of eye movements are contributing useful information.

These methods supplement the naming tasks and lexical decision tasks that are used in much of the research on single word reading (see Chapter 20 for further discussion of eye movements and reading). Although many questions remain to be answered, it is clear that the visual representations provided by print rapidly make contact with the representations stored in the mental lexicon. Once this contact has been made, it matters little whether the initial input was by eye or by ear. The principles and processing procedures are much the same. The mental lexicon So far, in discussing how listeners and readers access information in the mental lexicon, we have not said much about the nature of the information that they access. It is to this topic that we now turn. One question, which relates to the trade-off between computation and storage in language processing, is whether the mental lexicon is organized by morphemes or by words. Under a word-based view, the lexicon contains representations of all words that the language user knows, whether they are single-morpheme words such as *cat* or polymorphemic words such as *beautifully.* Supporting this view, Tyler, Marslen-Wilson, Rentoul, and Hanney (1988) found Treiman et al., Psycholinguistics, 13

that spoken word recognition performance was related to when the word began to diverge from

other words in the mental lexicon, as predicted by the cohort model, but was not related to

morphemic predictors of where recognition should take place. Under a morpheme-based view,

in contrast, the lexicon is organized in terms of morphemes such as *beauty*, *ful*, and *ly*. In this

view, complex words are processed and represented in terms of such units.

The study by Taft and Forster (1975) brought morphological issues to the attention of

many psychologists and pointed to some form of morpheme-based storage. As mentioned

earlier, these researchers found that nonwords such as *vive* (which is the stem of *revive*) were

difficult to reject in a lexical decision task. Participants also had trouble with items such as

dejuvenate which, although not a real word, consists of genuine prefix together with a genuine

root. Taft and Forster interpreted their results to suggest that access to the mental lexical is

based on root morphemes and that obligatory decomposition must precede word recognition for

polymorphemic words.

More recent studies suggest that there are in fact two routes to recognition for

polymorphemic words, one based on morphological analysis and the other based on whole-word

storage. In one instantiation of this dual-route view, morphologically complex words are

simultaneously analyzed as whole words and in terms of morphemes. In the model of Wurm

(1997, Wurm & Ross, 2001), for instance, the system maintains a representation of which

morphemes can combine, and in what ways. A potential word root is checked against a list of

free roots that have combined in the past with the prefix in question. In another instantiation of

the dual-route view, some morphologically complex words are decomposed and others are not.

For example, Marslen-Wilson, Tyler, Waksler, and Older (1994) argued that semantically

Treiman et al., Psycholinguistics, 14

opaque words such as *organize* and *casualty* are treated by listeners and readers as

monomorphemic and are not decomposed no matter how many morphemes they technically

contain. Commonly encountered words may also be treated as wholes rather than in terms of

morphemes (Caramazza et al., 1988; Schreuder & Baayen, 1995). Although morphological

decomposition may not always take place, the evidence we have reviewed suggests that the

lexicon is organized, in part, in terms of morphemes. This organization helps explain our ability

to make some sense of *slithy* and *toves*.

Ambiguous words, or those with more than one meaning, might be expected to cause

difficulties in lexical processing. Researchers have been interested in ambiguity because studies

of this issue may provide insight into whether processing at the lexical level is influenced by

information at higher levels or whether it is modular. In the former case, comprehenders would

be expected to access only the contextually appropriate meaning of a word. In the latter case, all

meanings should be retrieved and context should have its effects only after the initial processing

has taken place. The original version of the cohort model (Marslen-Wilson & Welsh, 1978)

adopts an interactive view when it states that context acts directly on cohort membership.

However, later versions of cohort theory (Marslen-Wilson, 1987; 1990; Moss & Marslen-

Wilson, 1993) hold that context has its effects at a later, integrative stage.

Initially, it appears, both meanings of an ambiguous morpheme are looked up in many

cases. This may even occur when the preceding context would seem to favor one meaning over

the other. In one representative study (Gernsbacher & Faust, 1991), participants read sentences

such as *Jack tried the punch but he didn't think it tasted very good*. After the word *punch* had

been presented, an upper-case letter string was presented and participants were asked to decide Treiman et al., Psycholinguistics, 15

whether or not it was a real word. Of interest were lexical decision targets such as *HIT*, which

are related to an unintended meaning of the ambiguous word, and *DRINK*, which are related to

the intended meaning. When the target was presented immediately after the participant had read

punch, performance was speeded on both *HIT* and *DRINK*. This result suggests that even the

contextually inappropriate meaning of the ambiguous morpheme was activated. The initial lack

of contextual effects in this and other studies (e.g., Swinney, 1979) supports the idea that lexical

access is a modular process, uninfluenced by higher-level syntactic and semantic constraints.

Importantly, Gernsbacher and Faust (1991) found a different pattern of results when the

lexical decision task was delayed by a half second or so but still preceded the following word of

the sentence. In this case, *DRINK* remained active but *HIT* did not. Gernsbacher and Faust

interpreted these results to mean that comprehenders initially access all meanings of an

ambiguous word but then actively suppress the meaning (or meanings) that does not fit the

context. This suppression process, they contend, is more efficient in better comprehenders than

in poorer comprehenders. Because the inappropriate meaning is quickly suppressed, the reader

or listener is typically not aware of the ambiguity.

Although all meanings of an ambiguous word may be accessed initially in many cases,

this may not always be so (see Simpson, 1994). For example, when one meaning of an

ambiguous word is much more frequent than the other or when the context very strongly favors

one meaning, the other meaning may show little or no activation. It has thus been difficult to

provide a clear answer to the question of whether lexical access is modular.

The preceding discussion considered words that have two or more unrelated meanings.

More common are *polysemous* words, which have several senses that are related to one another. Treiman et al., Psycholinguistics, 16

For example, *paper* can refer to a substance made of wood pulp or to an article that is typically

written on that substance but that, nowadays, may be written and published electronically.

Processing a polysemous word in one of its senses can make it harder to subsequently

comprehend the word in another of its senses (Klein & Murphy, 2001). That one sense can be

activated and the other suppressed suggests to these researchers that at least some senses have

separate representations, just as the different meanings of a morpheme like *punch* have separate

representations.

Problems with ambiguity are potentially greater in bilinguals than in monolinguals. For

example, *leek* has a single sense for a monolingual speaker of English, but it has another

meaning, *layperson*, for one who also knows Dutch. When asked to decide whether printed

words are English or not, and when the experimental items included some exclusively Dutch

words, Dutch-English bilinguals were found to have more difficulty with words such as *leek*

than with appropriate control words such as *zuivel* (*dairy*) (Dijkstra, Timmermans, & Schriefers,

2000). Such results suggest that the Dutch lexicon is activated along with the English one in this

situation. Although optimal performance could be achieved by deactivating the irrelevant

language, bilinguals are sometimes unable to do this. Further evidence for this view comes from

a study in which Russian-English bilinguals were asked, in Russian, to pick up objects such as a

marku (a stamp) (Spivey & Marian, 1999). When a marker was also present -- an object whose

English name is similar to *marku* -- people sometimes looked at it before looking at the stamp

and carrying out the instruction. Although English was not used during the experimental session,

the bilinguals appeared unable to ignore the irrelevant lexicon.

Information about the meanings of words and about the concepts that they represent is Treiman et al., Psycholinguistics, 17

also linked to lexical representations. Chapter 22 includes a discussion of conceptual

representation.

Comprehension of sentences and discourse

Important as word recognition is, understanding language requires far more than adding

the meanings of the individual words together. We must combine the meanings in ways that

honor the grammar of the language and that are sensitive to the possibility that language is being

used in a metaphoric or nonliteral manner (see Cacciari & Glucksberg, 1994). Psycholinguists

have addressed the phenomena of sentence comprehension in different ways. Some theorists

have focused on the fact that the sentence comprehension system continually creates novel

representations of novel messages, following the constraints of a language's grammar, and does

so with remarkable speed. Others have emphasized that the comprehension system is sensitive to

a vast range of information, including grammatical, lexical, and contextual, as well as

knowledge of the speaker/writer and of the world in general. Theorists in the former group (e.g.,

Ford, Bresnan, & Kaplan, 1982; Frazier & Rayner, 1982; Pritchett, 1992) have constructed

modular, serial models that describe how the processor quickly constructs one or more

representations of a sentence based on a restricted range of information that is guaranteed to be

relevant to its interpretation, primarily grammatical information. Any such representation is then

quickly interpreted and evaluated, using the full range of information that might be relevant.

Theorists in the latter group (e.g., MacDonald, Pearlmutter & Seidenberg, 1994; Tanenhaus &

Trueswell, 1995) have constructed parallel models, often of a connectionist nature, describing

how the processor uses all relevant information to quickly evaluate the full range of possible

interpretations of a sentence (see Pickering, 1999, for discussion). Treiman et al., Psycholinguistics, 18

Neither of the two approaches just described provides a full account of how the sentence

processing mechanism works. Modular models, by and large, do not adequately deal with how

interpretation occurs, how the full range of information relevant to interpretation is integrated,

or how the initial representation is revised when necessary (but see J.D. Fodor & Ferreira, 1998,

for a beginning on the latter question). Parallel models, for the most part, do not adequately deal

with how the processor constructs or activates the various interpretations whose competitive

evaluation they describe (see Frazier, 1995). However, both approaches have motivated bodies

of research that have advanced our knowledge of language comprehension, and new models are

being developed that have the promise of overcoming the limitations of the models that have

guided research in the past (Gibson, 1998; Jurafsky, 1996; Vosse & Kempen, 2000).

Phenomena common to reading and listening comprehension. Comprehension of written

and spoken language can be difficult, in part, because it is not always easy to identify the

constituents (phrases) of a sentence and the ways in which they relate to one another. The place

of a particular constituent within the grammatical structure may be temporarily or permanently

ambiguous. Studies of how people resolve grammatical ambiguities, like studies of how they

resolve lexical ambiguities, have provided insights into the processes of language

comprehension. Consider the sentence *The second wife will claim the inheritance belongs to*

her. When *the inheritance* first appears, it could be interpreted as either the direct object of

claim or the subject of *belongs*. Frazier and Rayner (1982) found that readers' eyes fixated for

longer than usual on the verb *belongs*, which disambiguates the sentence. They interpreted this

result to mean that readers first interpreted *the inheritance* as a direct object. Readers were

disrupted when they had to revise this initial interpretation to the one in which *the inheritance* is Treiman et al., Psycholinguistics, 19

subject of *belongs*. Following Bever (1970), Frazier and Rayner described their readers as being

led down a garden path. Readers are led down the garden path, Frazier and Rayner claimed,

because the direct object analysis is structurally simpler than the other possible analysis. These

researchers proposed a principle, *minimal attachment,* which defined "structurally simpler," and

they claimed that structural simplicity guides all initial analyses. In this view, the sentence

processor constructs a single analysis of a sentence and attempts to interpret it. The first analysis

is the one that requires the fewest applications of grammatical rules to attach each incoming

word into the structure being built; it is the automatic consequence of an effort to get some

analysis constructed as soon as possible. Many researchers have tested and confirmed the

minimal attachment principle for a variety of sentence types (see Frazier & Clifton, 1996, for a

review).

Minimal attachment is not the only principle that has been proposed as governing how

readers and listeners use grammatical knowledge in parsing. Another principle that has received

substantial support is *late closure* (Frazier, 1987a). Frazier and Rayner (1982) provided some

early support for this principle by showing disruption on the phrase *seems like* in *Since Jay*

always jogs a mile seems like a very short distance to him. Here, *a mile* is first taken to be the

direct object of *jogs* because the processor tries to relate it to the phrase currently being

processed. Reading is disrupted when *a mile* must be reanalyzed as the subject of *seems*.

Another principle is some version of *prefer argument* (e.g., Abney, 1989; Konieczny,

Hemforth, Scheepers & Strube, 1997; Pritchett, 1992). Grammars often distinguish between

arguments and *adjuncts*. An argument is a phrase whose relation to a verb or other argument

assigner is lexically specified; an adjunct is related to what it modifies in a less specific fashion Treiman et al., Psycholinguistics, 20

(see Schütze & Gibson, 1999). With the sentence *Joe expressed his interest in the car*, the prefer

argument principle predicts that a reader will attach *in the car* to the noun *interest* rather than to

the verb *express*, even though the latter analysis is structurally simpler and preferred according

to minimal attachment. *In the car* is an argument of *interest* (the nature of its relation to *interest*

is specified by the word *interest*) but an adjunct of *express* (it states the location of the action

just as it would for any action). There is substantial evidence that the argument analysis is

preferred in the end (Clifton, Speer, & Abney, 1991; Konieczny et al., 1997; Schütze & Gibson,

1999). However, some evidence suggests a brief initial preference for the minimal attachment

analysis (Clifton et al., 1991).

Long-distance dependencies, like ambiguities, can cause problems in the parsing of language. Language gains much of its expressive power from its recursive properties: Sentences

can be placed inside sentences, without limit. This means that related phrases can be distant

from one another. Many linguists describe constructions like *Whom did you see t at the zoo* and

The girl I saw t at the zoo was my sister as having an empty element, a *trace* (symbolized by *t*),

in the position where the moved element (*whom* and *the girl*) must be interpreted.

Psycholinguists who have adopted this analysis ask how the sentence processor discovers the

relation between the moved element (or *filler*) and the trace (or *gap*). One possibility, J.D. Fodor

(1978) suggested, is that the processor might delay filler-gap assignment as long as possible.

However, there is evidence that the processor actually identifies the gap as soon as possible, an

active filler strategy (Frazier, 1987b).

The active filler strategy is closely related to minimal attachment, for both strategies

attempt to find some grammatical analysis of a sentence as soon as possible (see De Vincenzi, Treiman et al., Psycholinguistics, 21

1991). But the active filler strategy may not be the whole story. Pickering and Barry (1991) and

Boland, Tanenhaus, Garnsey, and Carlson (1995) proposed what the latter called a *direct*

assignment strategy, according to which a filler is semantically interpreted as soon as a reader or

listener encounters the verb to which it is related, without waiting for the gap position. Evidence

for this strategy comes from a study in which Boland et al. presented sentences word by word,

asking readers to indicate when and if a sentence became unacceptable. An implausible sentence

like *Which public library did John contribute some cheap liquor to t last week* tended to be

rejected right on the word *liquor*, before the position of the gap.

Most of the phenomena discussed so far show that preferences for certain structural

relations play an important role in sentence comprehension. However, as syntactic theory has

shifted away from describing particular structural configurations and toward specifying lexical

information that constrains possible grammatical relations, many psycholinguists have proposed

that the human sentence processor is primarily guided by information about specific words that

is stored in the lexicon. The research on comprehenders' preference for arguments discussed

earlier is one example of this movei.

Spivey-Knowlton and Sedivy (1995) demonstrated effects of particular categories of

lexical items, as well as effects of discourse structure, in the comprehension of sentences like

The salesman glanced at a/the customer with suspicion/ripped jeans. The prepositional phrases

with suspicion or *with ripped jeans* could modify either the verb *glance* or the noun *customer*.

Minimal attachment favors the former analysis, but Spivey-Knowlton and Sedivy showed that

this held true only for action verbs like *smash down*, not for perception verbs like *glance at*. The

researchers further noted that an actual preference for noun phrase modification only appeared Treiman et al., Psycholinguistics, 22

when the noun had the indefinite article *a.* This outcome, they suggested, points to the

importance of discourse factors (such as whether an entity is newly referred to or not) in

sentence comprehension.

Some theorists (e.g., Altmann & Steedman, 1988) have proposed that contextual appropriateness guides parsing and indeed is responsible for the effects that have previously

been attributed to structural factors such as minimal attachment. The basic claim of their

referential theory is that, for a phrase to modify a definite noun phrase, there must be two or

more possible referents of the noun phrase in the discourse context. For instance, in the sentence

The burglar blew open a safe with the dynamite, treatment of *with the dynamite* as modifying *a*

safe is claimed *to* presuppose the existence of two or more safes, one of which contains

dynamite. If multiple safes had not been mentioned, the sentence processor must either infer the

existence of other safes or must analyze the phrase in another way, for example as specifying an

instrument of *blow open.* Supporters of referential theory have argued that the out-of-context

preferences that have been taken to support principles like minimal attachment disappear when

sentences are presented in appropriate discourse contexts. In one study, Altmann and Steedman

examined how long readers took on sentences like *The burglar blew open the safe with the*

dynamite/new lock and made off with the loot in contexts that had introduced either one safe or

two safes, one with a new lock. The version containing *with the dynamite* was read faster in the

one-safe context, where the phrase modified the verb and thus satisfied minimal attachment. The

version containing *with the new lock* was read faster in the two-safe context, fitting referential

theory.

Many studies have examined effects like the one just described (see Mitchell, 1994, for a

III.1. Content-process controversy.

1.0 INTRODUCTION

In the previous unit such current issues in psycholinguistics like nativism, modularity, processing and structure were examined. In this unit, we shall look at the controversial issues in psycholinguistics. The field is full of many topics that

have been debated for ages. These areas have influenced language studies and development and more data are still being assembled to learn more about human language behaviour. This unit thus discusses the stand of the cognitivist/mentalist and the behaviourist schools of thought. While the former holds that language is innate, the latter believes that it is environmental. We will try to draw a middle line between them. We shall also assess the species – specific trait of man in possessing language. Some have argued whether animal communication like the 'dance language' of the bees actually constitutes language in the same sense like that of the human language. The unit will also give an insight into the controversy regarding the relationship between language and thought and we shall see whether children actually imitate adult in their speech or they possess creative instinct to generate what has been labelled as 'child grammar'.

2.0 OBJECTIVES

At the end of this unit, you should be able to:

1. Examine the cognitivist/mentalist and behaviourist theories of language acquisition

2. Describe the role of imitation in language learning

3. Explain the Critical Age Hypothesis (C. A. H.)

4. Discuss how thought interrelate with language

5. Distinguish between human language and animal communication

3.0 MAIN CONTENT

3.1 General Overview

The field of psycholinguistics is varied and complex. The issues being discussed range from the most profound to the most trivial. Topics being debated include: How do we acquire language? Is language related to thought? Do children imitate adults when learning to speak? Do animals possess language in the same sense as we talk of human language? All these and many more have generated a lot of controversies that researchers have come to the conclusion that more still needs to

be done to determine what really happens when psychology, sociology and philosophy come in contact with human language. Kayami (2001) expresses deep concern when he says that "the topic of human language acquisition implicates the most profound questions about our understanding of the human mind and its subject matter, the speech of children, is endlessly fascinating. But the attempt to understand it scientifically is guaranteed to bring on a certain degree of frustration."

Controversies abound in psycholinguistics because it deals, not only with language study, but also the psychological aspects involved. These include language acquisition and behaviour as well as the psychological mechanisms responsible for them. Implicit in the explanations are questions to be determined. Since psycholinguistics has to do with the human mind, a lot of assumptions must be scrutinized to avoid arriving at the wrong conclusions. Psycholinguists want to know how language structures are acquired by children and how they are used in the process of speaking, understanding and remembering.

Arguments also arise whether animal communication differs from that of man. Though they appear the same because they both have fixed systems of signals, this similarity is vague and generalized since it cannot explain adequately human linguistic complexities. For example, the popular "bees dance" often touted as a form of communication is used to communicate the location of food by means of a dance done in the hive. However, this message is limited just like the message of higher primates like gibbons and chimpanzees, which are credited with communication signals similar to human whereas a closer look reveals serious limitation. A cry may indicate 'impending danger' and a grunt may mean desire for food or request for care towards the infants. All these do not constitute language because there is restriction and any message beyond the immediate cannot be conveyed.

Moreover, the relationship between language and thought is still steeped in controversy. The subject has been of considerable interest over the years. Since the Whorfian hypothesis, which claimed total dependence of thought on language

generated so much debate, new insights are now given that such a position is extremist and that, as far as cognition is concerned, children can think before they talk. A better perspective is that language is vital to interaction and therefore affects the way we think and which in turn affect the way we speak. Language and thought is thus integrative and cannot be perceived differently.

Catania (2012) aptly submits that, sometimes, when participants in a controversy have something to say, they merely say the same things in different ways. This underlies the cognitivist/mentalist and the behaviourist debate on language acquisition. While the cognitivists are concerned with the structure of language, the behaviourists emphasize the function. However, the two can overlap. The controversy between the two schools of thought is in part simply a matter of speaking of the same things in different ways. Sometimes, when we fail to identify the problems appropriately, controversies arise because we mistakenly speak of different things as if they were the same (Catania, 2012).

3.2 Issues in Psycholinguistics (1)

Perhaps there is hardly any field of language study that entertains so much controversy like psycholinguistics. This is not unexpected because it is an area that examines in full detail the relationship between language and the mind. Many areas combine together to furnish it with a corpus of data that still require much scrutiny. These include but not limited to psychology, sociology, philosophy and biology. Carroll (1994) explains that controversial issues abound in psycholinguistics because it has a rich heritage that includes contributions from diverse intellectual tradition of how best to describe language study and language process. Some pertinent questions we ask are:

1. What knowledge of language is needed by human beings to use language?

2. What cognitive processes come to play in language behaviour?

Attempts to answer questions like the above, among other complex questions, require an interdisciplinary approach, which psycholinguistics offers. Psycholinguistics is primarily a sub-discipline of psychology and linguistics but it

is also related to developmental psychology, cognitive psychology, neuro-linguistics and speech science (Carroll, 1999).

We can now understand why there is a debate on what happens when a child acquires a language. The two schools of thought involved in this debate have been labelled as the cognitivist/mentalist and the behaviourist theorists. The mentalists argue that children are born with a mental biological structure that is genetically wired to process language.

Chomsky (1965) asserts that a child possesses the capacity to generate an infinite set of utterances because of a device termed Language Acquisition Device (LAD), which is a property of the child's brain that endows it to aggregate linguistic information. During language acquisition, children pick a number of words spontaneously and combine them into a structured sequence by assigning each word its natural role. There is thus no need for any explicit instruction as propounded by the behaviourist school of thought.

Mentalists propose that what the child needs is a tacit knowledge of a language as they begin to formulate endless sentences of their own. They argue that a child's mind is not a blank slate (tabula rasa) and that language acquisition is dependent on an innate species – specific module different from general intelligence. 60

On the other hand, we have the behaviourists who hold that language learning depends wholly on the environment and that imitation is central to language learning. However, the controversy here should not be seen from an extremist position. The assertion by the cognitivists does not really rule out environmental input. They only argue that environment is a catalyst and not the nucleus of language acquisition and learning. They do not actually say that we acquire language without experience. Their assertion is that language acquisition requires environmental input to trigger and stimulate language development. An example is given that deaf children cannot acquire language because when they cannot experience speech, they cannot possess spoken language. It is not possible for children language acquisition to take place in a vacuum. During language

acquisition, exposure and stimulation by their caregivers are important factors in language enrichment. Mentalists also support their position by citing the creativity of human language. How come children produce utterances they never heard before? Even the preceding ten lines of this write-up have probably never been written by these authors. Almost every sentence that you hear or speak every day is a brand new event not previously experienced. Yet, you create them effortlessly from your mental faculty without imitating or depending on anybody. The environment merely serves to stimulate and not to create those bits of language for you. Everyone who knows a language knows a relatively small number of principles, a small number of sounds put together to create words and a large but finite vocabulary. This finite knowledge provides the person who knows a language with infinite creativity (Fernandez & Cains, 2011).

The relationship between language and thought also constitutes a veritable source of controversy in psycholinguistics. We have one school of thought that says thought depends on language and another school says that thought is independent of language. Whorf (1956) claims that we dissect the world through our particular language and that speakers of different languages perceive the world differently in what is usually referred to as linguistic relativity theory. With the increasing complexity of the modern world, we have realized that the Whorfian hypothesis is seriously flawed. Pinker (1995) argued that Whorf's assertion is extremist because, as far as cognition is concerned, children can think before they talk. It has been shown that people think, not only in words but also in images. Studies in semantics and pragmatics have shown words having more than two meanings but still perfectly understood in various contexts. For example, the word 'spring' can be understood to mean (weather, sudden jump, pool and a metal object). There are also individuals who can think but cannot communicate through language. These are people suffering from neurological disorder and language impairment like 'aphasia'. This occurs where there is damage to the left hemisphere of the brain responsible for language processing.

Fodor (1975) also argues that general intelligence is the system responsible for generating the language of thought, which in turn is translated into speech by our linguistic system. This implies that any thought can be conveyed in any human language, thus contradicting the Whorfian position. Current studies, like Leva (2011), however, suggest that language and thought are integrated and therefore cannot be processed separately. Studies reveal that how people talk changes how they think and learning new colour words enhances a person's ability to discriminate colour. Learning new ways of talking about time imparts a new way of thinking about it (Leva, 2011).

Jones (2010) counters that speakers of a certain language do understand a concept even if it is not in their language. For example, the German word "schandenfrende" which has no equivalent in English is still understood by English speaker, to mean "rejoicing from the bad luck of others." He however concedes that language influences and enforces our thought process.

Ogbulogo (2005) explains that as the environment changes, culture and language typically respond by creating new terminologies to describe it. The terminologies used by a culture primarily reflect that culture's interests and concern. While Indians in Canada's Northwest Territories have 13 terms for different types and conditions of snow, the non-skiing native Southern Californians make do with only 2 terms. These are 'ice' and 'snow'. Nevertheless, they also have other terms in English for different stages of frozen water. These include: blizzard, frost, sleet, slush, etc. In Nigeria, we only talk of dry and wet seasons, which in Yoruba means 'o gbele ' and 'o gi nni nti n' respectively. But do you know that the Yoruba language has other weather terminologies like 'ku ruku ru' (fog), 'oye ' (harmattan), etc? Cassava variants in Nigerian ethnic terminologies include 'akpu', 'e ba ', 'ga ri ', 'oka', 'abacha', kpakpo etc. Encarta (2012) says the evidently close connection between language and thought does not imply that there is no thought without language. Pre-linguistic infants and higher primates can solve quite complex problems involving spatial memory, which indicates thinking.

Artistic and musical thoughts do not require specific linguistic expressions, which may be purely visual or auditory.

We can deduce from the foregoing arguments that all thoughts require representation of one kind or another but are not solely dependent on it. However, there is enough evidence that any representation, linguistic or otherwise, is immensely increased by the use of language.

3.3 Issues in Psycholinguistics (II)

Perhaps, no other controversy has generated more interest than that which holds that

animals could communicate in the same sense as we have it in the human language. Can we actually speak of animal language? The answer is no. This is because language is species-specific to man and a large number of evidence suggests that only man has the capacity for language. This is so because of the mechanism in the human brain and the physiological make-up of the vocal track. This genetic make-up endows humans with special adaptability to language behaviour. Encyclopedia (2012) reveals that "other members of the animal kingdom have the ability to communicate through vocal noises but the distinguishing characteristics of human language are its infinite productivity and creativity." Some have argued that the bees dance constitutes language but such an assertion does not consider that nectar sources are the only known theme of this communication system. Erroneously described as 'dance language', bees are only able to carry out conventionalized movement to indicate the locations of nectar and no other message. Even the way parrots mimic human sounds could only be possible because they are kept in the company of human beings. Such behaviour could not be taken to be a spoken language because it is wholly derivative and serves no independent communicative function.

We can deduce from the above that animal communication differs considerably from that of man. Though they may appear the same when seen as a fixed system of signals, this similarity is vague and generalized because it is inadequate to explain human linguistic complexities. Higher primates such as gibbons and

chimpanzees are credited with communication signals similar to humans but a closer look will reveal serious limitations. A cry which may indicate an impending danger is hardly distinguishable from that which is used for anger. While a low sounded grunt may be for care and attention, a similar sound may be taken to be a murmur of delight. While the human language can convey an unlimited set of discrete signals, animal communication revolves around a limited set of signals. No language study has come up to show how any animal can say to another animal "I have found your missing infant being carried away by the hunter who is sleeping under the tree." Animal vocalism remains where it was before civilization whereas the human language is dynamic.

The role of imitation in language behaviour still constitutes an area of controversy in psycholinguistics. Some linguists believe that imitation plays a critical role in language behaviour while others claim otherwise. The major issue is, to what extent does imitation affect language learning and development?

Studies have shown that what is called imitation is just exposure to the adult model while will guide the child to formulate their own sentences and create novel utterances. Psycholinguists based their idea of universal grammar (UG) on the assumption that children do not imitate blindly the adult language forms. All children everywhere no matter the race, colour or location are born with a brain ready to equip them with language. As the child grammar develops, it has all the universal properties similar to all other languages elsewhere. The linguistic components of the child grammar at the phonological, syntactic and lexical levels are complete and conform to the rules of the speakers. When you observe a child acquiring language, there is a systematic unfolding of linguistic complexity from one-word stage to multi-word level. When sufficient exposure is given to the child, they will be attuned genetically to produce their own speech independently. 63

You may be surprised that language is not taught to children. Researchers have revealed that it is only the encouragement from the caregiver interaction and the peer group relationship from the environment that trigger the child's language

production. This interaction will engender their linguistic creativity. When you attempt to correct the child's error, it will be of little or no effect since they will learn the correct pattern on their own without imitation. McNeil (1966) reports of a child who was corrected to say 'ate' when he was saying 'eated' due to generalization of the 'ed' past tense form. The effort proved futile as the child made no attempt to imitate the adult model. Therefore children's errors often go unnoticed and even when noticed are not corrected because the correction does absolutely no good.

Fernandez and Cairns (2011) argue that the word 'imitation' cannot actually be used to describe what goes on in child/caregiver interaction. He contends that "imitation occurs where a child repeats what an adult has said or at least produces a child's version of it immediately an adult has said it." Where a caregiver says: "This is a big blue ball" and the child responds "Blue ball", we cannot actually term such as imitation because there seems to be a great deal of individual variation in the production of such an utterance. A good illustration that imitation plays little or no role in a child's language acquisition is reported in Fernandez and Cairns (2011) where an adult and a child engaged in this conversation:

Child: Want other one spoon, Daddy.

Adult: You mean, you want the other spoon.

Child: Yes, I want other one spoon, please, Daddy.

Adult: Can you say "the other spoon"?

Child: Other … one … spoon

Adult: Say "other".

Child: Other.

Adult: Say "spoon".

Child: Spoon

Adult: Other … spoon

Child: Other … spoon. Now can I have other one spoon?

It is obvious that the 'teacher' has only succeeded in wasting his time as the child still repeats what he said from the beginning.

Another area of controversy is the one that says that at certain age language learning and language acquisition will begin to decline. Some psycholinguists hold that a learner reaches their linguistic plateau whereby attempt to learn a language becomes more difficult. Studies still continue whether such an assertion is true or not.

Slobin (1972) posits that by the time a child is five years old, all the basic structures of the language are in place while fine-tuning will continue till late childhood. This corroborates Lenneberg's (1967) assertion of a critical stage when language 64

acquisition is crucial. Known as the Critical Age Hypothesis (CAH), it presents the optimal period for first language acquisition as at "the early teen years after which a fully complex linguistic system will not develop." This appears plausible because placidity of the brain is being put to test after a certain age. At a certain critical period, the brain cannot properly process cognitive demands of the language in the same way that it did during infancy. Researches also confirm that some wild children who acquire language very late after childhood found it difficult to learn well. A case was reported of Genie, a Californian girl locked in a closet for the first thirteen years of her life by an abusive father. She acquired words and the ability to communicate verbally but she never acquired the full morphological and syntactic system of English despite the efforts of her rescuers who were from the University of California in Los Angeles. Samples of her speech include: Genie, full stomach
Want Curtiss play piano
(Curtiss, 1988)
In addition, whereas a child experiences little difficulty in acquiring more than one language, older learners do not find it easy or they possess little proficiency in such language when diligently learnt. This is easy to explain because children do not have a language to lean on whereas a second language L2 learner can interact in one language and merely use the second one as a back-up. Furthermore, the language learning circuitry of the brain is more elastic in childhood than that of an

adult learner who speaks with a foreign accent when they pick up a second language. 4.0 CONCLUSION

In the unit, we discussed some controversial issues in the field of psycholinguistics. These range from very serious issues to those of simple assumptions. We now know that psycholinguistics is an interdisciplinary field consisting of linguistics, psychology, philosophy and speech science among others. A lot of questions need to be answered in such a plethora of studies. Controversial issues that have arisen include whether language is acquired or learnt. What is the role of environment in language learning? Do human beings possess a mental mechanism that predisposes them to acquire language seamlessly? We have examined to what extent the mentalists and the behaviourists can hold their grounds and that the two schools of thought should find a middle point. The study also explained the debate regarding the relationship between language and thought. We have seen the extremist position of the Whorfian hypothesis and that animal communication cannot be on the same platform as human language. We also mentioned the role of imitation in language behaviour and conclude that children are not blind imitators. Finally, we talked on the Critical Age Hypothesis (CAH) debate and explained that at a certain age, learning a language becomes a challenge because the plasticity of the brain function better during childhood for easier language acquisition and learning. 5.0 SUMMARY

In this unit, you learnt about the complex nature of psycholinguistics and why it is a field steeped in controversy. Many debates are still ongoing in the field because the issues involved have to do with the human mind and various themes in linguistics, sociology, psychology biology and even speech science. Such a multi-disciplinary field of study requires many researches to make conclusions on language behaviour and language development. In this unit, we tried to explain the controversy between the cognitivist/mentalist and the behaviourist theorists with a view to finding a common ground. The unit also looked at the debate whether language depends on thought and vice versa. You also learnt that animal communication differs considerably from human language because the elements of

creativity and species-specificity which characterize human language are absent in that of animal. The unit further examines the role of imitation in language behaviour and we now know that children do not imitate the adult model wholesale. The unit was rounded off by talking of the Critical Age Hypothesis (CAH) debate which holds that there is a critical age after which language acquisition becomes difficult. You are now better informed that children learning a language can do it better because their brain is still better predisposed to language acquisition than older learners. 6.0 TUTOR MARKED ASSIGNMENT

1. Examine the controversy of the Mentalist and the Behaviourist schools of thought.

2. 'Psycholinguistics is an interdisciplinary field of study steeped in controversy.' Discuss.

3. Discuss the relationship between language and thought.

4. Distinguish between animal communication and human language.

5. Explain the Critical Age Hypothesis (CAH).

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III. 2. The relationship of psycholinguistics to personal life.

In the previous unit, you learnt about the nature of language. The different characteristics as well as the definitions of language are discussed. The processes of the human minds are discussed as well as how they combine environmental factors to the human cognition and language are discussed. The relationship between language and the human mind are also discussed. This unit discusses the practical way that psycholinguistics can be related with human ways of life. You should thus be able to see that psycholinguistics is not merely an abstract issue but that which has practical application to the human life, your own life.

2.0 OBJECTIVES

At the end of this unit, you should be able to:

1. Identify the specific ways in which psycholinguistics has practical application to our lives.

2. Relate psycholinguistics to your personal linguistic experiences.

3.0 MAIN CONTENT

3.1 Practical Ways that Psycholinguistics Relate to the Human Ways of Life

You may be wondering right now that in what ways can psycholinguistics affect your life practically. In the first place, it studies the way the human mind works as it relates to language. This shows that the human thinking process is closely connected to language. Language is not independent of the things that go on in our minds. It is quite obvious that language essentially express what is going on in our minds. This can be seen quite clearly expressed by scholars in the past. Chomsky view is that language is rooted in the ability of the user. It is also obvious that when we look at Halliday's argument of ideational function of language, psycholinguistics becomes more relevant to our practical life experiences.

In the famous Chomsky argument, grammaticality is highly rooted in the ability of the speaker to control language usage. It is also obvious that the things we talk about are 41 rooted in the things that we think about. This makes real the issue of the linguistic reality of the experiences of language users. Halliday's discussion, using the lost tribe in Golding's *The Inheritor* and how their linguistic choices mainly reflect their personal experiences, shows clearly that the issue of practical usages of psycholinguistics to the human life is very practical.

In addition, psycholinguistics undoubtedly makes obvious, through such practical occurrences like slips of the tongue and the anticipation of the next phoneme in the course of discussing, easily reveals that psycholinguistics has a practical application in our lives. For example, I am sure that you've had occasion to say 'ma' instead of 'sir', then self-correcting, you end up with 'sir' and laugh at your own seeming incompetence. The question then is: is the speaker here actually unable to know the correct response to have given to the interlocutor or are there other factors responsible for this sort of response? It appears that the other will be the most appropriate answer. Why did I say so? Because the speaker was able to self-correct immediately. It shows that, unlike Chomsky's idea of linguistic incompetence as propounded in his Transformational Generative Grammar theory,

this particular scene is not due to that but mainly a psychological situation that could have been rooted in a mind probably occupied with something else. This comes to reason as the interlocutor is able to self-correct.

Psycholinguistics also helps us to study how human beings comprehend language. Steinberg, Nagata and Aline (2001) assert that meanings which underlie speech comprehension are concepts that are in a person's mind. This shows that, within the mind of a person, there must be underlying ideas that give meaning to the language of communication. This could be seen as the basis of Halliday's linguistic theory as noted above.

The slip of tongue phenomenon also easily reveals another way that psycholinguistics can easily be linked to our lives. It shows how human beings anticipate the next item of production in their speeches. When someone thus says 'se shaid', we can easily relate that the person has only interchange the initial sounds in the two words. Aitchison (1989) argues that this is one of the structural patterns in the production process and that it is not haphazard in nature. The parsing process in structural production thus shows that there is a pattern of production in human speech and the English language makes use of its pattern even in the mistakes made. Scovel (1998) fully agrees with this postulation.

The fact that thought processes are important to interpreting what is being said also reveals how the psycholinguistic studies affect our lives. In addition, as Arokoyo (2012) found out in her study, even children that are in the language acquisition process tend to make a whole lot of assumptions in their communication process, especially, with close family members.

In another sense, our environment as input to the thought processes of human beings can also be seen as another thing that underlies the psycholinguistic study. Concepts 42

don't grow on trees; they are gotten from the experiences of the interlocutor. Psycholinguistics also helps us to uncover the nuances of the relationship of these

experiences to our linguistic choices. Daniel (2008) has argued that deep seated in the linguistic choices of the way women are described in Nigerian newspapers have a lot to do with the perception of the power level of women in the Nigerian society. It is thus not surprising that women are more often regarded as appendages of men. The experience of women to become fulfilled in being seen as the wife or mother of someone (Oriaku, 1996) appears to be rooted in a psychological disposition that exalts wifehood and motherhood above the personhood of the woman within the Nigerian society. This thus clearly shows that even within the social set up, social psychology has a lot of influence on our linguistic life (cf. Lang, 1994).

It should be obvious by now then that psycholinguistics has a lot of practical influence upon our lives, whether privately or socially.

Self Assessment Exercise

Identify some important areas of the human life in which psycholinguistics has Φpractical impact and influence.

3.2 Relate Psycholinguistics to Your Personal Linguistic Experiences

In this section, as the saying goes, you are the boss. You are expected to be able to relate the instances from your own life in which psycholinguistics appears to be manifesting in practical terms.

We are going to help you to be able to deal with this section practically. How, you may ask? You are going to be given some leading questions that will guide you into giving practical realisation of how psycholinguistics has had practical effects in your life.

Scenario A

Have you ever had to remember some things happening around you in order to interpret the meaning of a language event? Let us look at a scenario like this:

Policeman: This man, stop wasting my time

Driver: Oga, I beg now! [Prostrating] Just manage am like that [hand
stretched to the policeman]

Policeman: [angrily] Let's go to the station. Can't you hear me?

Passenger: *Settle the man* now and let us go.

The italicised portion of this exchange will require some contextual or environmental factors to understand. Have you ever thought of the fact that an American that is new in Nigeria may find it difficult to easily interpret this statement? But can you find it difficult to interpret this statement or the whole scene itself? Explain why you think you can interpret this scene or statement without much difficulty? Try to write down your explanation to clarify your thoughts.

Scenario B

Malapropism, tip of the tongue phenomenon and the slip of the tongue are features common with the speech production process. How do these relate to your life in practical terms? Slips of the tongue are a common feature of the sometimes unsuccessful attempts by human beings to communicate. However, they are called slips of tongue because they are produced through unwitting release by the speaker. For you, can you find instances of such occurrences? If yes, describe them. What do you say of the tip of the tongue phenomenon? I agree with you that it can be very frustrating. You know you have the word right there at the edge of your mind but your tongue can't seem to be able to actualise it. Then, sometime late in the night or when you have gone far away from the scene of the discussion, bingo! with a snap of the finger, probably in the most unrelated environment, the word comes crashing into your world. How about that for an examination setting? You can understand why I said it can be most frustrating. This is part of the things the psycholinguist is expected to provide explanation for. Why did the word decide to elude you? And why must it be at that particular time when you are in desperate need of it? Why did it come back and descend into your consciousness and subsequently your tongue when the crucial moment is probably forever lost (your final year examination? It happened to me when I was writing my essay examination in my final year in the secondary school. Imagine that the spelling of

already eluded me until after I had submitted my script to the examiner. What a shame!) Describe your experience. I know you will have one.

Self Assessment Exercise

Discuss two practical ways that you have experienced a situation in which you think psycholinguistics could really help to explain the phenomenon of what happened to you.

4.0 CONCLUSION

This unit discusses the practical application of what psycholinguistics has to do with the human life. It reveals the fact that psycholinguistics may appear like an abstract discipline but that it actually has practical application to the human life.

5.0 SUMMARY

This unit outlines some practical ways that psycholinguistics affect the individual and social life of people. It reveals some important ways that it has practical application in the life of each individual and the social cognition. It leads the learner to see the practical application of the psycholinguistics study to the life of the individual and their society. It describes the very way the psycholinguistics brings to the fore the individual and social cognition to the way their linguistic choices are made. It also exposes the individual to the very personal unravelling of their own encounter with the psycholinguistic operations in their everyday life experiences.

6.0 TUTOR MARKED ASSIGNMENT

1. Identify some important ways that psycholinguistics can be practically applied to the individual's life.

2. Describe one important way you have practically seen in your life that the psycholinguistic study will give a clear explanation of your experience.

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