Psycholinguistic Perspectives and Contributions of ELL and ELT

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Abstract

The aim of the present article is to overview psycholinguistic perspectives and contributions of English language learning (ELL) and English language teaching (ELT). Psycholinguistics is the empirical and theoretical study of the mental processes that enable linguistic behavior. It means that psycholinguistics puts its consideration on two disciplines: psychology and linguistics. So it has a crucial role in language learning and teaching studies. To overview of psycholinguistic points of view on second language learning, its models of language storage and retrieval, its contributions to second language components i.e. lexis, phonology and grammar, and four language skills i.e., listening, speaking, reading and writing will be looked at. Psycholinguistic perspectives also have an essential role to build the theoretical foundations of language teaching methods, and to develop them over periods of time. So the different language teaching methods will be overviewed in terms of psychology and linguistics, two contributed disciplines to psycholinguistics.

Keywords: psycholinguistics, second language learning, second language teaching

INTRODUCTION

Language is uniquely human. No other animal has the ability to communicate with anything like the complexity that humans do. The size and complexity of the brain is also a major distinguishing feature of human beings (Randall, 2007). Thinking and language are closely connected and any study of uniqueness of human beings should involve the connection between the remarkable organ which produces thought, the brain, and the artifact that is produced, language. As Altman (2001, p. 129) asserts "psycholinguistics is as much about the study of the human mind itself as it is about the study of that mind's ability to communicate and comprehend". Modern ideas about how languages whether first, second or foreign are processed, stored, retrieved and learnt have drawn heavily on the disciplines of psychology and linguistics.

Carroll (2008) presents main points in psycholinguistics as followings: Psycholinguistic stresses the knowledge of language and cognitive processes involved in ordinary

language use. Psycholinguists are also interested in the social rules involved in language use and the brain mechanisms associated with language. In addition, as Field (2003, p.5) claims, "language is voluntary". It is under our individual control", thus, psycholinguistic is the study of how individuals comprehend, produce, and acquire language. Generally speaking (as Field, 2011 notes), psycholinguistics is the study of how the mind equips human beings to handle language and considers language as a restricted phenomenon to the human race which is knowable. The role of experts in the field is to determine how language evolved, what the precise relationship is between language and thought and whether language shares functions with general cognition or operates independently of it. In fact, the notion that language is a product of the human mind gives rise to two interconnected goals, both the concern of psycholinguistics:

a) to establish an understanding of the processes which underlie the system we call language.
b) to examine language as a product of the human mind and thus as evidence of the way in which human beings organize their thoughts and impose patterns upon their experiences (Field, 2003).

As other fields of study and disciplines psycholinguistics is about to ask questions generated by its nature and how it looks at mind and language. Psycholinguistics has six main scopes to be researched, some of which overlap: language processing, language storage and access, comprehension theory, language and the brain, language in exceptional circumstances, language acquisition and learning (Field, 2003).

Since on side of the present paper is second language learning it could be said that psycholinguistic research is often able to provide insight not only into issues of online processing, but also into issues of grammar and the intersection between grammar and processing. Addressing second language learning in psycholinguistic studies is often experimental in nature, and it is not common to use naturalistic data to answer questions regarding learners' processing of language (Gass & Mackey, 2007). In psycholinguistic approaches, there is a tendency to collect and analyze data following more positivistic approaches (Firth & Wagner, 1997). That is, data is collected under controlled and rigorous settings that resemble research conducted in laboratories. Analyses are performed using statistical measures that serve to reject or confirm the hypothesis established prior to the research (Atkinson, 2002). Such studies and the perspectives generated relied on their results of the phenomena of second language learning and teaching, here English, gradually path the way of psycholinguistics contribution to language learning and also English language teaching (ELT). But such perspectives and contributions have been changed over the periods of times.

HISTORY OF THE FIELD

The term "psycholinguistics" was introduced in 1936 by Jacob Kantor, but it was rarely used until 1946, when his student Nicholas Henry Pronko (1946) published his article Language and psycholinguistics: A review. However, "Psycholinguistics is not a young, recent science" (Levelt, 2013, p. 577).The earliest to write about language and the brain

were the ancient Egyptians. A catalog of the effects of head injury exists in what is now referred to as the Edwin Smith Surgical Papyrus, written about 1700 B.C. They believed instead that the heart was the seat of the soul and the repository for memory, a view largely shared by the Greek philosopher Aristotle (384–322 b.c.)— a somewhat surprising position to take given that he was a student at Plato's Academy and that Plato (427–347 B.C.) believed the brain to be the seat of intelligence (Altman, 2006). Altman (2006) cites that the pre-history of psycholinguistics (up until the 19th century) was dominated by philosophical conjecture. The term dominated is used loosely here, as there was no systematic and ongoing questioning of the relationship between mind and language, or indeed, brain and language—there was no community of researchers asking the questions.

The first systematic studies of the relationship between language and brain were conducted in the 19th century (Altman, 2006). During the nineteenth century some studies carried out to investigate if language is innate or acquired. We can see this interest in the psychology of adult language, with initiatives such as Broca's work on the location of language in the brain and Galton's on word association (Field, 2011). In his comprehensive book about history of psycholinguistics, Levelt (2013) asserts that psycholinguistics was established as a discipline, coherent in both method and theory. However, psycholinguistics was nothing other than what was called "the psychology of language" from the end of the nineteenth century. It then also enjoyed a certain theoretical coherence, as a mentalistic science. That science was the outcome of a full century of empirical and theoretical research in comparative linguistics, developmental and experimental psychology, brain anatomy, and pathology.

The early 20th century was a debate time for experts. Some experts such as Wilhelm Wundt and William James emphasized the importance of mental states and the relationships between utterances and language use and those internal states. And, actually, several contemporary issues in psycholinguistics were prognosticated by them. However, some experts such as J. B. Watson, as opposed to Wundt and James, argued that psychology should be concerned with behavior and behavioral observation, rather than with consciousness and introspection. In that time the debate was about mind and behavior as the absolute opposite poles of the continuum of psycholinguistics as Kantor, a behaviorist, who saw Wundt's argues wrong. Furthermore, in that debating time for psychologists, we see a new window which is opened for linguistics. The revolution was when Ferdinand de Saussure brought structure into the study of language. Altman (2001) says that within linguistics, the Bloomfieldian structural school was born. Levelt (2013, p. 11) mentions that "Bloomfield's structural linguistics had, since his Language (1933), paid lip service to an objective (i.e., behaviorist) foundation of the discipline".

Levelt (2013), based upon some expert's impact on the field mentions that it is a widely shared opinion that the new discipline of psycholinguistics emerged during the 1950s, and more precisely in 1951. He introduces three perspectives which influenced the direction of the discipline, Cornell's report of the interdisciplinary summer seminar in psychology and linguistics, George Miller's Language and communication, and Karl

Lashley's the problem of serial order in behavior. However, the behaviorist tradition had been culminated with respect to language with B. F. Skinner's publication in 1957 of Verbal Behavior. Here, Skinner sought to apply behaviorist principles to verbal learning and verbal behavior, attempting to explain them in terms of conditioning theory, Altman (2006) reviews. Charles Osgood (1952) introduced a new version of behaviorism theory as neo-behaviorism.

On the other hand, a linguistic milestone introduced by Zellig Harris's Methods in structural linguistics in 1951. Both Zellig Harris and his student Noam Chomsky worked on developing such a generative, transformational grammar during the 1950s. It was through the cooperation of George Miller and Noam Chomsky that by the end of the 1950s a crucial further landmark was erected in the history of psycholinguistics (Levelt, 2013). Levelt (2013) says that "Chomsky-and-Miller revolution turned psycholinguistics back to its historical, mentalistic roots" (p. 18). Noam Chomsky's assertion (1965) as the nativist school of thought claimed that language is an innately acquired faculty. Chomsky's current theory (Chomsky & Lasnik, 1993) posits that the innate universal grammar (UG) which enables the acquisition of a first language has two components. The first is a set of principles, which enable the infant to recognize features that are common to most or all of the world's languages. The second is a set of binary parameters, which can be set to accord with the language to which the child is exposed (as cited in Field, 2011).

In late 20th century Rumelhart and McClelland published parallel distributed processing known as PDP (1986). It was the emergence of connectionist point of view on psycholinguistics. Connectionist models are computer simulations of interconnecting cells or units which, when activated, pass that activation along to the other units to which they connect, Altman (2001) posits. The early 21st century is a grounding of language in action and the brain. The new and modern technologies applied to develop the discipline. These modern technologies such as fMRI, PET, EEG, MEG, and eye-tracking movement equipment prepare experimental neurolinguistic data to show not merely how different parts of the brain engaged in a particular linguistic process, but a sequence of images of how the brain reacts over time (Field, 2011).

CURRENT DIRECTIONS

Field (2011, p.473) asserts that "today, psycholinguistics is a multi-disciplinary field, drawing upon cognitive psychology, theoretical linguistics, speech science, phonetics, computer modelling, neurolinguistics, clinical linguistics, discourse analysis and pragmatics". Figure 1 depicts the disciplines having relationships to psycholinguistics.
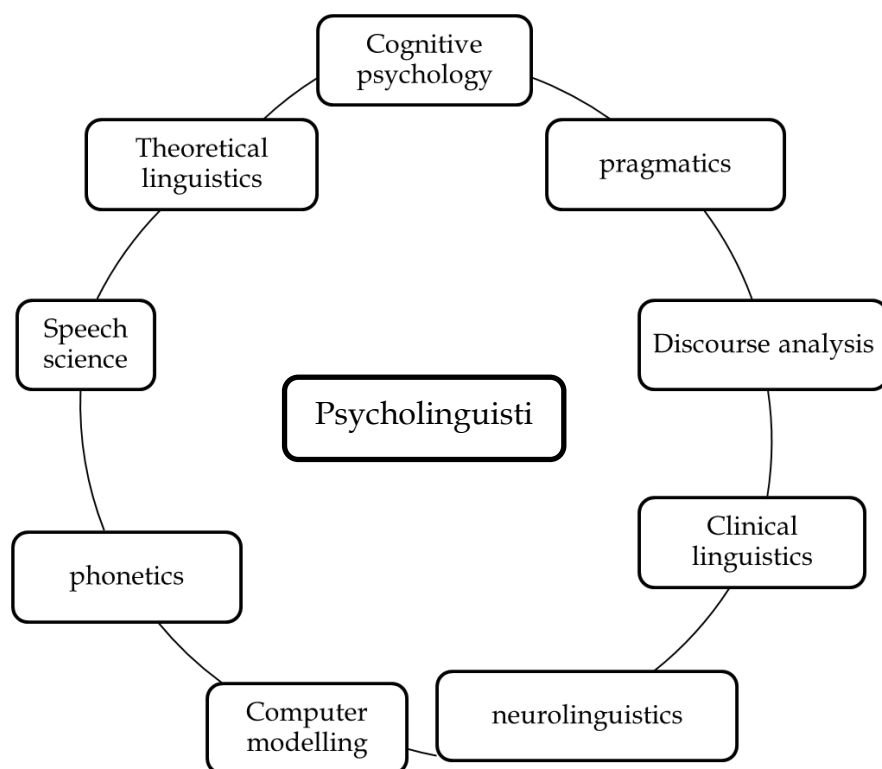
Figure 1. Psycholinguistics as a multi-disciplinary field of study

Psycholinguistics is a fast-growing field of study which has contributed enormously over the past fifty years to our understanding of language as a phenomenon (Field, 2011). Altman (2006) says that we have still to see the full influences of connectionism, statistical learning, embodied cognition, and the neuroscience of language. Levelt (2013) notes that theoretical frameworks came and went, and this was to continue till the present day. It means that many challenges have still not yet been discussed or thoroughly investigated, or many problems, duo to the paucity of comprehension of issues, have not yet been obviated. It is a characteristic of any viable science.

## PSYCHOLINGUISTIC MODELS OF LANGUAGE STORAGE AND RETRIEVAL

An area which is mainly related to psycholinguistics and is a great interest for psycholinguists to discover the myths is "memory" and how it stores linguistic data and retrieve them. Atkinson and Shiffrin (1968) posit that "memory is what we are, and what defines us as individuals" (p. 115). Studies showed that memory has a crucial role in language comprehension and learning (Baddeley & Patterson, 1971; Norman, 1972; Randall, 2007). Not only does it store information about the language used and use that information to make sense and communicate, but it also builds a framework in the brain. Atkinson and Shiffrin (1968) introduced the early model for memory storage which is called "modal model". Actually, this model is a general perspective of how human memory works and is not solely for language, but language storage, processing, controlling, and retrieval are included in it. The model comprises of a sensory store in which a reader or listener very briefly retains a trace of the linguistic input; a temporary store, named short-term, in which spoken/written input is analyzed or output is

assembled; and a more permanent store, called long-term store, holding both linguistic and world knowledge. Figure 2 depicts the structure of the memory system.
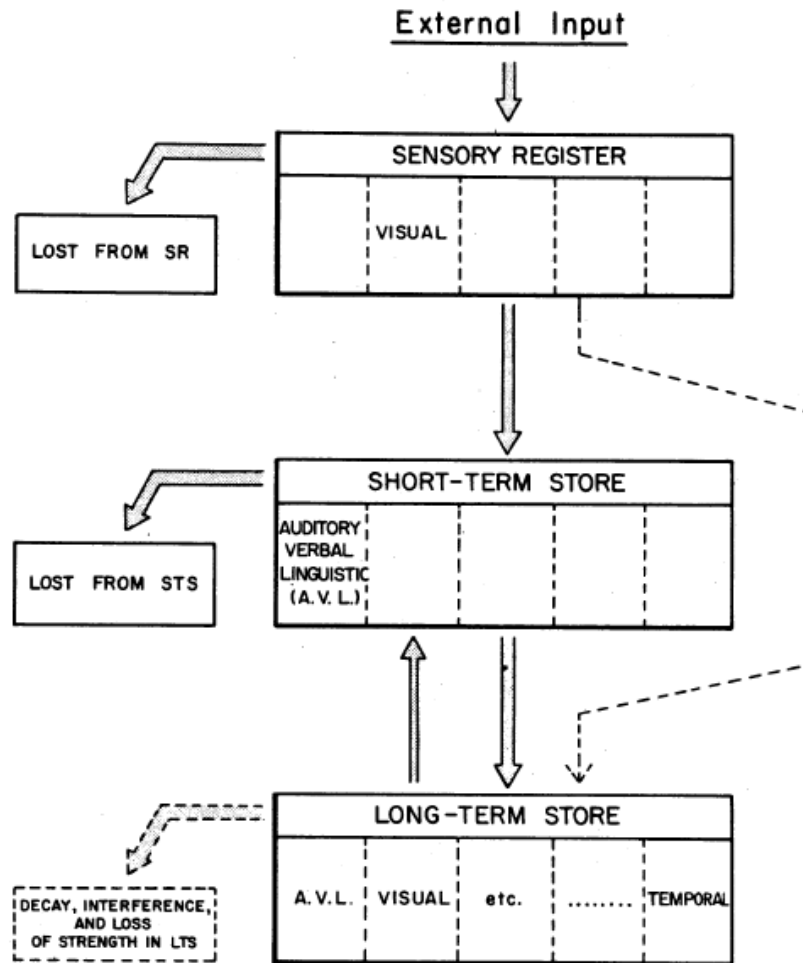

Figure 2. Structure of the memory system (adopted from Atkinson & Shiffrin, 1968, p. 93)

Current models refer to the short-term store as working memory (WM) and the durable and more permanent one as long term memory (LTM). However, two important points should be put in our consideration are firstly, constructs such as short term memory, working memory and long term memory are only models, not physical realities. Secondly, cognitive psychologists build their models on the observation of individuals working on tasks, often in laboratory settings (Randall, 2007). The major model of WM which underpins thinking about memory derives from the work of Baddeley and Hitch (1974).
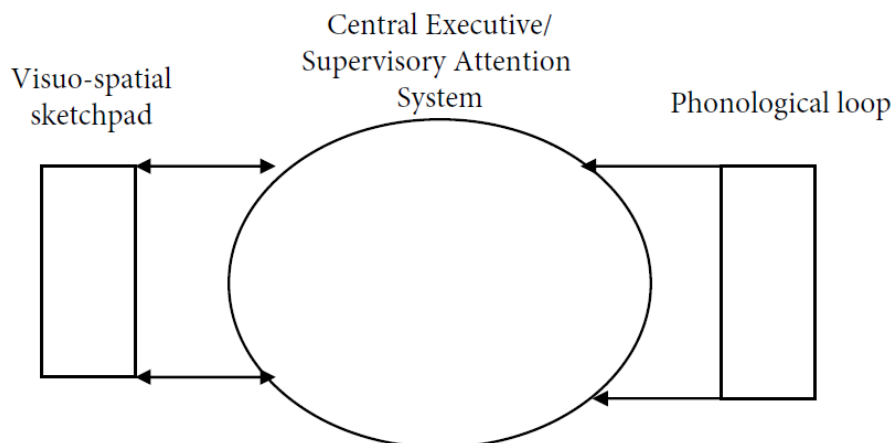
Figure 3. The components of working memory adapted from Baddeley and Hitch (1974)

What is important for language processing is that the phonological loop takes in verbal material and holds it in memory by a process of repetition/rehearsal (Randall, 2007). Baddeley (1986) introduced a three component model. Although his model which is still the most commonly accepted model in cognitive psychology, it has not been without criticisms. In response to the criticisms Baddeley (2000) has produced the following adaptation of his original model as a multi-component model of working memory.
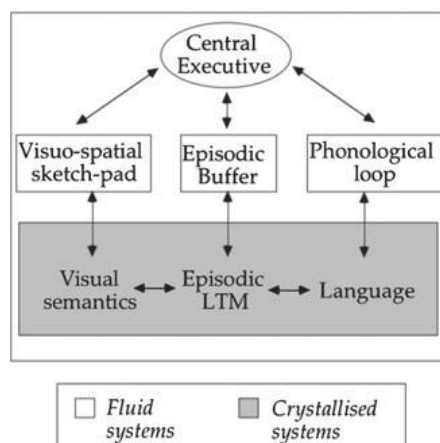
Figure 4. The revised multi-component model of working memory from Baddeley (2000, as cited in Baddeley, 2007 p.147)

Ellis's (2001) model shows how language and picture processing take place. Language input is first of all processed at a phoneme level and connections are formed between the nodes at this level and word nodes at the next level. These are again connected into established patterns at the phrase level. Through continuing exposure (in the case of the first language user), these neural pathways become more established. Language then becomes a network of interconnections between nodes at the different levels and the rules of the language are defined by these interconnections. Grammar then emerges from the recurring chunks of language to which they are exposed. The whole process is governed by a monitoring supervisory attentional system (SAS) which directs attention within the Working Memory to the significant areas of input. This is where the rules of

the language emerge. With instructed second language learners the SAS also plays a part, not only in extracting the rules, but in directing the activity happening in the phonological loop. With structured input (from a teacher) and purposeful practice (through rehearsal), the SAS is able to establish language patterns through interconnections between the different levels of language.
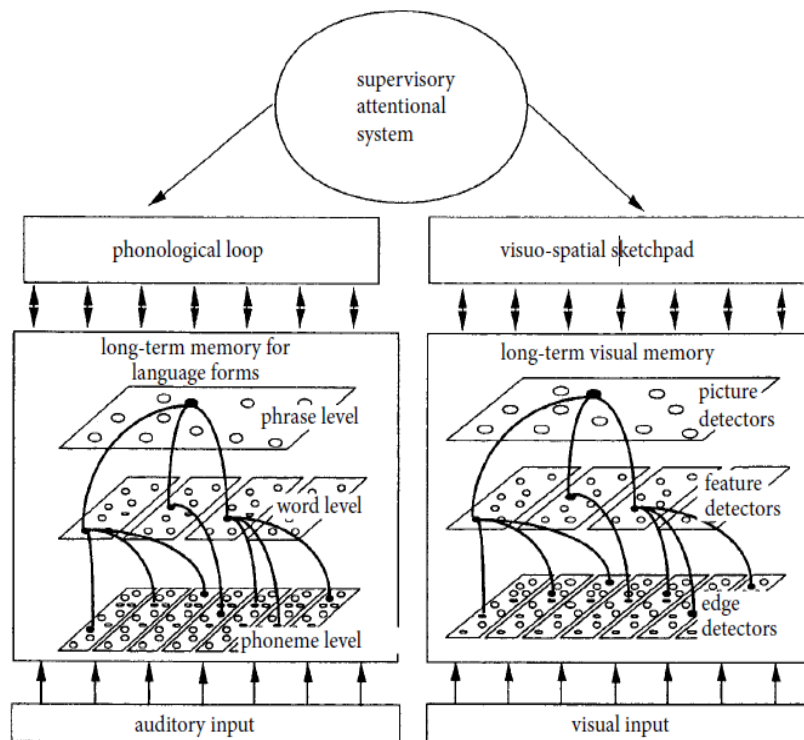
Figure 5. The model of working memory for language acquisition from Ellis (2001, p. 36)

CRITICAL PERIOD FOR SECOND LANGUAGE LEARNING

In order to discuss about critical period or age for second language learning we have to have a short glance at such period in first language acquisition. The notion of critical period for the acquisition of a first language is often associated with nativist accounts of universal grammar theory (Field, 2011). Field (2003) posits that the critical period hypothesis has it that there is a time during our early lives when we have maximum receptivity to language. If for any reason a child is not exposed to language during that period, the argument goes, it will only achieve a limited degree of competence. Lenneberg (1967) suggested a link between this theory and lateralization: that the critical period might coincide with the time when the child's brain is flexible and before language has become fully distributed between the hemispheres. The concept of a critical period has been extended to second language learning. The hypothesis is: "that the plasticity of the brain permits younger learners to acquire a second language much more successfully than adult ones; or that the universal grammar which permits us to acquire our first language is no longer available after a certain age", Field (2003, p. 100) asserts.

It is reasonable to ask a question about the acquisition of a second language. Is there any barrier to the learning of a second language and, if so, at what age does this barrier become operational? To answer this question some studies have been carried out. There are, however, studies which demonstrate a differential effect for the age at which acquisition of syntax began (Johnson and Newport, 1989; Mayberry and Lock, 2003). On the other hand, research provided data to refute the claim of a critical period for the acquisition of grammar (White & Genesee, 1996, Birdsong & Molis, 2001, Mayberry & Lock, 2003). Steinberg and Sciarini (2006, p. 136) claim that "it is safe to affirm the view that there is no critical age in terms of acquiring the syntax of a second language".

As another component of the language phonology has been under scrutiny. The question which has been generated is: Is it possible to learn a second language so well that one truly sounds like a native speaker? Actually, according to different studies, there is a challenging debate between claims and assertions. Some studies argue that adults are not able to speak like the native speaker of the target language (Sebastián-Gallés & Bosch, 2001; Perani et al., 2003). Scovel (1988) claims that "the critical period for accentless speech simply means that adults will never learn to pass themselves off as native speakers phonologically" (p. 65). On the other hand, some research criticized such view point asserting that no adult can ever be successful in acquiring pronunciation (Matsui, 2000; Yeon, 2003). So we can conclude that although for acquisition of syntax there is no evidence for existence of critical age, we cannot agree that there is an absolute critical age for pronunciation.

PSYCHOLINGUISTICS AND SECOND LANGUAGE COMPONENTS

All the languages have three components: a) lexis, b) grammar, and c) phonology. The first one is related to vocabulary items. Grammar describes the speaker's knowledge of the language. And phonology the establishment and description of the distinctive sound units of a language by means of distinctive features (Richards and Schmidt, 2002). Here, regarding to psycholinguistics interest, the emphasis is on how these components are restored and retrieved.

A recent shift in thinking has led many commentators to favor an "exemplar view" of how linguistic knowledge is stored. It challenges traditional notions of language as rule-governed behaviours or as reliant upon ideal templates of words or phonemes. Instead, the premise is that linguistic knowledge is constructed on the basis of traces of multiple encounters with the features in question, which have been stored in LTM (Bybee and Hopper, 2001).

Lexis

Psycholinguistics sees lexis in terms of reception and production. In terms of reception, current accounts of how words are identified by a listener or reader do not assume a simple one-to-one match between input and word. Competition models (Rastle, 2007) postulate that a listener or reader balances cues at many levels in order to achieve word recognition. Lexical retrieval in production is assisted by the way in which entries are

stored in the mind. Current models envisage them as linked by a complex network of interconnections (Field, 2011). Furthermore, recent commentators have preferred an exemplar view, with the category constituted by the user's ability to recall many different instances of items that belong to it.

Grammar

Wray (2002) holds that our capacity to produce speech rapidly is dependent upon frequently occurring groups of words being stored in the mind as pre-assembled chunks. Thus, one does not have to assemble afresh a sequence such as I wish I knew … or what would you say if … each time one utters it, but can draw on a unit which is, in effect, part of the lexicon. Similarly, one can recognize it as a fixed formulaic utterance when it occurs in connected speech, without having to parse its parts.

Phonology

The exemplar position rejects the long-standing assumption that there are idealized phonological representations in the mind against which variants can be matched. By assuming instead that language users store many different versions of a single phoneme (Bybee, 2001), one accounts for the way in which listeners adjust gradually to an unfamiliar variety through multiple encounters with speakers of that variety. Each speaker leaves a trace, enabling the listener to build up an increasingly detailed record of how this particular group realizes phonemes or words (Field, 2011).

PSYCHOLINGUISTICS AND FOUR SECOND LANGUAGE SKILLS

Four language skills i.e. speaking, writing, reading and listening are processes that are employed when a language learner engages in them. "Psycholinguistic models of these skills are heavily influenced by an information processing approach, which tracks a given piece of information through a number of stages, at each of which it is transformed" (Field, 2011, p.476). In the following sections the language skills will be briefly discussed based upon information processing approach and psycholinguistic approach to instruction, because of the aim of the present paper.

Listening

It seems that, based upon the information processes approach, listening, even in one's first language, is a highly tentative process, with hypotheses constantly being formed and revised. This receptive skill includes two phases: a) perceptual phase which is called decoding and, b) conceptual phase which is called encoding. For the former input is analyzed into linguistic units i.e. lexical & syntactic ones. For the latter, meaning-based representation is constructed (Field, 2011). Demirezen (2004) says that, in accordance with the instructions of the psycholinguistic approach, the intrinsic difficulty of a listening text consists of the speed of the speech, number of the unknown words (amount of intake in one class hour), interaction between previously learned topics and the new topic to be learned. There are, in addition, extrinsic difficulties

including interest, motivation of students, purpose of listening, and noise in the environment.

Reading

As with listening, it is necessary for readers to hold decoded words in their minds until the end of a clause or sentence is reached and a syntactic pattern can be imposed on them. There is evidence that the words are stored in some kind of phonological form (Perfetti, 1985) – hence the fact that readers sometimes report a 'voice in the head'. This may be a relic of how reading is acquired, but it seems more likely that it serves to separate recall of the earlier part of a sentence from the visual processing of the current word (Field, 2011). Psycholinguistic approach resorts to text-based approach as a case of bottom-up processing so as to emphasize the comprehension activity. It also advocates the use of inside-the- head model (top-down processing) to stress the fact that comprehension rests primarily on student's knowledge base. So it can be said that reading skill is mainly meaning-based activity as proven by the psycholinguistic approach (Demirezen, 2004).

Speaking

Levelt (1999) introduces a psycholinguistic model for speaking. It compromises five steps through which an utterance is produced. This model is depicted in following figure.
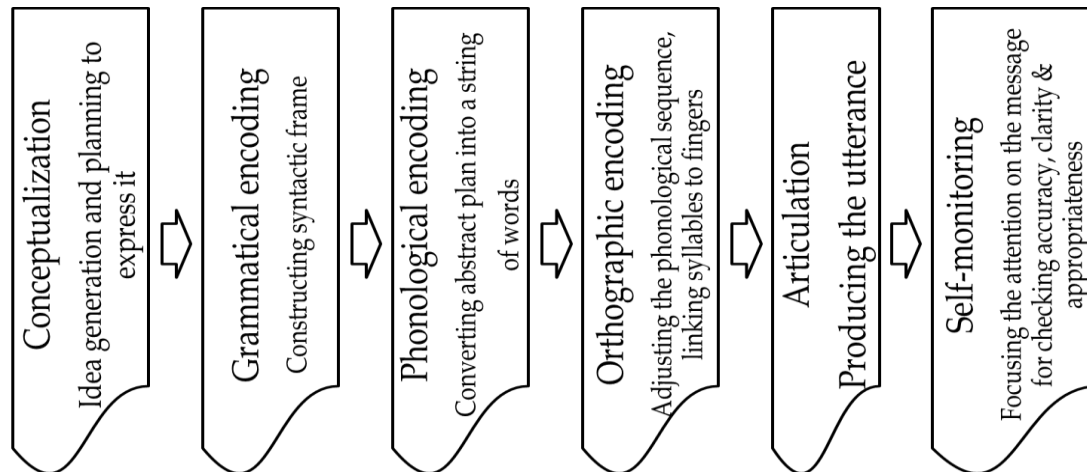
Figure 6. Levelt's (1999) psycholinguistic model for speaking

Psycholinguistic approach has a workable; control over speaking as a skill. It has specified several difficulties on speaking. Speaking defects like voice disorders, stuttering, and misarticulating are also psychological in origin caused by personality factors (Demirezen, 2004).

Writing

Accounts of writing (e.g. Kellogg 1996) have therefore tended to follow Levelt's model of speaking quite closely. However, there are major differences in the greater

opportunity allowed for planning and self-monitoring, the substitution of orthography for phonology and the fact that neural signals are sent to the fingers, not the articulators. To this, one can add that the product of writing is typically expected to be more precise, concise and polished than that of speaking–emphasizing the importance of the planning and monitoring phases. Demirezen (2004) states that the psycholinguistic approach serves decrease me level of the difficulties writing. It helps to specify the writing level and anting types. It pins down the mechanic mistakes on punctuation and1 suggests certain cures for them.

PSYCHOLINGUISTICS AND SECOND LANGUAGE TEACHING METHODS

The basic status of the psycholinguistic approach has always been disregarded in the field of foreign language teaching and learning, is a matter of fact, this field of study is the first initiator of the area of foreign language teaching and learning. The psycholinguistic approach has provided the theoretical ground for the flourishing of many second language learning theories and methods (Demirezen, 2004). It is here that we see interconnection between psycholinguistics and language teaching over the years. Steinberg and Sciarini (2006) characterize three principal dimensions for language teaching methods: a) language focus: speech communication and vs. literature, b) meaning learning: direct experience vs. translation, and c. grammar learning: induction vs. explication. This three dimensional characterization includes theories which have been realized in principal second language teaching methods.

Second language teaching and in particular, ELT, has undergone a number of radical changes over the last 150 years. Richards and Rogers (2002) say that methods of teaching derive from theoretical models of language and learning. The former is the concern of linguistics, and the latter the concern of psychology. According to the changes of method during the different periods of time, they can be categorized into three groups: a) traditional methods, b) short-lived, and c) contemporary methods. In the following paragraphs the methods briefly introduced by psycholinguistics contribution to them, meaning that they will be discussed by their theoretical foundations in different branches of psychology and linguistics, because psycholinguistics put both psychological and linguistic perspectives into its consideration. However, the deep detail such as teaching features and techniques will not be mentioned due to the nature of the article and its limitations.

Traditional Methods

In this group we see grammar-translation, natural, direct, and audio-lingual methods. Grammar–translation (GT) essentially involves two components: a) the explicit explanation of grammatical rules using the native language, and b) the use of translation, in the native language, to explain the meaning of vocabulary and structures. The teaching of grammar went hand in hand with translation for the teaching of a second language, with both relying on the use of the native language to impart knowledge (Steinberg and Sciarini, 2006). Actually, for GT there is no scientific and theoretical foundations. But Larsen-Freeman 2000 asserts that GT is related to faculty

psychology by seeing mind as a muscle. It means that the more memorization, the more language learning.

The natural method (NM) developed as a reaction to grammar–translation and was the outgrowth of scientific thought on the nature of language and language learning. NM began to be formed early in the nineteenth century and by the latter part of that century the method had become firmly established through the writings of such as Sauveur (1878) and Gouin (1892). Steinberg and Sciarini (2006) state that the approach to language learning, where 'natural is best', so to speak, led to a method of teaching that stressed the value of introducing a second language to a learner exactly as the native language had been experienced. The model for the natural method of second-language learning was the child learning its native language.

The direct method (DM), appearing in the late nineteenth and early twentieth centuries, developed from the natural method. Like the NM, it emphasized the learning of speech, acquiring meaning in environmental context, and learning grammar through induction. Harold Palmer (1922), the most eminent advocate of DM, asserts that we not merely approve the NM, but also seek to improve upon it by providing systematic procedures based on scientific knowledge of linguistics and psychology. DM theorists believed that by applying scientific knowledge from psychology and linguistics, language learning could be made more efficient, Second-language learning with the result that students would learn faster (Steinberg and Sciarini, 2006). Both NM and DM are supported by behavioristic psychology and structural linguistics theories (see below) (Randall, 2007).

Audiolingual method (ALM) was born when to the popularity of the new American linguistic and psychological theories have incorporated into its foundations. Structural linguists regarded sentences as sequences of grammatical word classes or phrases. New sentences would be created by substituting words within a word class. ALM incorporated behaviourist psychology (Watson, 1924; Thorndike, 1932; Skinner 1957), which was the dominant school of psychology in America for most of the first half of the twentieth century. Behaviourist psychology regarded mind and thinking to be irrelevant for the understanding and production of speech. Language learning was regarded as no different from other types of learning in which a stimulus and response paradigm was operating. Repetition and mechanical drills involving words as stimuli and responses were considered to be the essence of learning.

Short-lived Methods

Steinberg and Sciarini (2006) use a euphemism for the short-lived methods and call them offbeat methods which appeared then disappeared. Since the downfall of the audiolingual method in the 1960s, a number of new methods have arisen. However, only a small number have managed to survive, and fewer still have managed to thrive. Four that have not survived are cognitive code, community language learning, silent way, and suggestopedia. Nunan (1989) calls them "designer" methods and Brown (2001) says these were soon marketed by entrepreneurs as the latest and greatest applications of the multidisciplinary research findings of the day i.e. the decade of

1970s. All the short-lived methods have been supported by generative grammar linguistics and cognitive psychology. Chomsky (1957) put such linguistic trend emphasis on trying to develop an explicit theory of how language learners can, on the basis of encountering finite examples of language, come to understand and produce novel combinations in a potentially infinite number of sentences. The focus of cognitive psychology is the study of mental processes such as attention, language use, memory, perception, problem solving, creativity, and thinking (APA, 2013).

Contemporary Methods

Contemporary methods are such methods that new trends of psychology and linguistics applied to shape and make them practical in the atmosphere of language classes. They are: total physical response, communicative language teaching, natural approach, content-based instruction, task-based language teaching, computer-assisted language learning.

Total physical response (TPR) advocates believe that speech understanding precedes speech production, which, in turn, precedes reading and writing. James Asher (1966), the founder of TPR in the 1970s, considers its unique characteristic to be the learners' performance of physical actions in response to the teacher's commands in the target language. His idea is that memory will be enhanced by motor activity with the result that language will be more easily remembered and accessed. Again we have cognitive psychology as the one of the foundations of the method and generativist linguistics.

Communicative language teaching (CLT) sets as its goal the teaching of communicative competence more than grammatical or linguistic competence (Brown, 2001; Larsen-Freeman, 2000). The concern of CLT's advocates is to get people to communicate by any means possible. It is probably because of its eclecticism that CLT has become one of the most widespread of teaching methods in use today. Due to the open-minding theory behind CLT it is not so much a particular method as an eclectic method that borrows, as it does, aspects of other methods, such as grammar–translation, audiolingual, community language learning, and TPR. The psycholinguistic theory supporting CLT are cognitive psychology and cognitive and nativist linguistics points of view. Nativist linguistics claims that language is an innately acquired faculty (Chomsky, 1959).

The Natural Approach (NA) is the name given by) and Krashen and Terrell (1983) to their new philosophy of language teaching developed in the early 1980s. It is to be distinguished from the nineteenth-century natural method, although NA has a number of similarities with that and with other natural speech-based methods such as the direct method and TPR. Yet, perhaps the Natural Approach is more of an attempt to provide a theoretical description the processes involved in second-language acquisition than it is a body of innovative techniques for teaching. But it is essential to say that in the natural approach, language output is not forced, but allowed to emerge spontaneously after students have attended to large amounts of comprehensible language input. The acquisition-learning hypothesis states that there is a strict separation between

conscious learning of language and subconscious acquisition of language, and that only acquisition can lead to fluent language use (Markee,1997).

Content-based instruction (CBI) is based on the same principles and on the same psychological and linguistic orientation as CLT; therefore, it might be better to say that CBI is an approach to language instruction, rather than a separate method. CBI differs from CLT in its focus on instructional input: CBI organizes language teaching around the subject that students need to master, rather than around a linguistic syllabus, and uses the target language as a means to present the subject matter (Mohan, 1986; Richards and Rodgers, 2001).

Task-based language teaching (TBLT) is yet another offspring of CLT. Unlike other approaches, TBLT focuses more directly on the instructional factor, stressing the importance of specially designed instructional tasks as the basis of learning. The main idea is that learners learn the target language by interacting communicatively and purposefully while engaged in the activities (Feez, 1998). The corpus linguistics principles shape the linguistic side of the method. Corpus linguistic analyses of large collections of language show how there are recurrent patterns of words, collocations, phrases, and constructions, that syntax and semantics are inextricably linked, and that grammar cannot be described without lexis, nor lexis without grammar (Hoey, 2005). The psycholinguistic theories behind this approach are cognitive, and connectionist. The central connectionist principle is that mental phenomena can be described by interconnected networks of simple and often uniform units. The form of the connections and the units can vary from model to model. For example, units in the network could represent neurons and the connections could represent synapses like in the brain of a human being (Medler, 1998).

Howard Gardner's multiple intelligences theory (MIT) (1999) is an important contribution to cognitive science and constitutes a learner-based philosophy which is ''an increasingly popular approach to characterizing the ways in which learners are unique and to developing instruction to respond to this uniqueness'' (Richards & Rodgers, 2001, p. 123). MIT is a rationalist model that describes nine different intelligences. It has evolved in response to the need to reach a better understanding of how cognitive individual differences can be addressed and developed in the classroom (Arnold & Fonseca, 2004). Gardner (1999) and his research associates identified the mathematical logical, the verbal-linguistic, the musical-rhythmic, the bodily-kinaesthetic, the interpersonal, the intrapersonal, the visual-spatial, the naturalist and the existential intelligences.

CONCLUSION

Nowadays, the emphasis on the transdisciplinary nature of the science leads into outstanding contributions in humanities. Psycholinguistics (rooted in language pedagogy) as a great model of this perspective sheds more light on the clarification of the complicated human-being's language process and brain process during acquisition ,comprehension, and production of linguistic elements. And although the history of

psycholinguistics is relevant to understanding where the field is today, perhaps of greater interest is where the field will be tomorrow. It means that using high-tech devices may demystify many unresolved problems and answer so many questions about how language, and, particularly, second or foreign language processed, learned and, or produced. And eventually such finding help language pedagogy to make new methods to follow in order to teach second language better, and move learners along with them to get prosperity. Actually regarding to the multi-disciplinary nature of the psycholinguistics and ELT, Pishghadam (2011) claims that ELT as an independent field of study, has the potentiality to be applied to other domains of knowledge like psycholinguistics. I believe that since psycholinguistics and ELT interact to enrich each other they can affect themselves interactively and mutually. It means that ELT can enrich and develop psycholinguistics, and also psycholinguistics can enhance ELT by applying their findings to themselves.

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