

# Trends in Second Language Acquisition

**Hamed Barjesteh,  
Elham Movafagh Ardestani,  
Mehdi Manoochehrzadeh and  
Mohamad Heidarzadi**



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# LIST OF ABBREVIATIONS

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ACT Model	Adaptive Control of Thought Model
ACT	Adaptive Control of Thought
ACT-R	Adaptive Control of Thought-Rational
AEM	Acculturation Extended Model
AI	Artificial Intelligence
AIT	Autonomous Induction Theory
ALM	Audiolingual Method
ASL	American Sign Language
BEV	Black English Vernacular
BICS	Basic Interpersonal Communication Skills
CA	Contrastive Analysis
CALP	Cognitive Academic Language Proficiency
CDS	Child-Directed Speech
CF	Corrective Feedback
CLT	Cognitive Load Theory
CM	Competition Model
CPH	Critical Period Hypothesis
C-R	Consciousness-Raising
CT	Complexity Theory
DT	Dialogic Teaching
EB	Epistemological Beliefs
ELL	English Language Learners
ESP	English for Specific Purposes
FDH	Fundamental Difference Hypothesis
FMRI	Functional Magnetic Resonance Imaging
FonF	Focus on Form
FonM	Focus on Meaning
FT	Foreigner Talk

---

HIGs	High Input Generators
HLP	Home Literacy Practice
IDs	Individual Differences
IH	Interaction Hypothesis
IL	Interlanguage
IP	Input Processing
ISLA	Instructed Second Language Acquisition
L	Learner
L1	First Language
L2	Second Language
LAD	Language Acquisition Device
LASS	Language Acquisition Support System
LEP	Limited English Proficient
LIGs	Low Input Generators
LMS	Learning Management System
LOT	Language of Thought
LREs	Language-Related Episodes
LTM	Long-Term Memory
MDH	Markedness Differential Hypothesis
NL	Native Language
NNS	Non-Native Speaker
NS	Native Speaker
OH	Output Hypothesis
PBL	Problem-Based Learning
PDP	Parallel Distributed Processing
PPP	Present-Practice-Produce
PT	Processability Theory
SAT	Speech Accommodation Theory
SCT	Sociocultural Theory
SDA	Second Dialect Acquisition
SLA	Second Language Acquisition
SLL	Second Language Learning
S-R	Stimulus-Response
TL	Target Language

TPR	Total Physical Method
UG	Universal Grammar
WM	Working Memory
ZPD	Zone of Proximal Distance





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# PREFACE

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This book tends to help EFL/ESL learners at the postgraduate level to cope with the main trend in second language acquisition (SLA). This book briefly introduces the main current theories in the field of SLA, outlining basic ideas in each as well as their basic claims. It offers students concise introductions to core topics in SLA in encyclopedia-like descriptions of a number of key terminologies used in the literature. It goes without saying that these terminologies are not exhaustive, and we apologize in advance for any terms we may have left out. The goal is not to be exhaustive but rather to provide a sketchy overview of the basics for the readers. We wrote this book with the intention of providing our intended readership, including MA students, PhD students, teachers, and researchers, with a substantive source by which they can acquire a first-hand, immediate experience with the ins and outs of exams and interview requirements. Citations provided within this section will lead the reader to the original. The book is helpful for readers interested in SLA and EFL/ESL teaching, and it can be used in both undergraduate and graduate courses. Its clear and concise overview of the main issues, terms, and people in SLA makes it a must-have reference for anyone in applied linguistics. The most outstanding feature of the book is its concise description and controversial topics dominating polemical debates defining the interlocking dimensions comprising the field of English language teaching. We believe that this book is well-suited for candidates in master's degree and PhD programs as well as language teachers. The organization of the book is, in fact, transparent enough to support student learning about the successful handling of their content knowledge. We hope that the reading of the book caters to the continuing process of inquiry which is the ultimate goal in the new-found reformulation of ideas evolving in the history of language teaching and learning.

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## CHAPTER 1

# SECOND LANGUAGE ACQUISITION

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## 1.1. INTRODUCTION

Second language acquisition (SLA) is a research field that focuses on learners and learning rather than teachers and teaching. In their best-selling text, Gass and Selinker (2008, p. 1) define SLA as “the study of how learners create a new language system.” As a research field, they add that SLA is the study of what is learned of a second language (L2) and what is not learned. Some make the distinction between *foreign* language learning and SLA. The former is used to refer to language learning in contexts in which the language is not normally spoken outside the classroom, such as learning French in Newcastle,

United Kingdom, or Greek in Omaha, Nebraska in the United States. SLA is used by some to refer to those contexts in which the language is used outside the classroom, as in the case of learning English in the United States or learning Spanish in Spain. While such distinctions are useful from a sociological perspective, they have little linguistic or psychological validity. The field of SLA addresses the fundamental questions of how learners come to internalize the linguistic system of another language and how they make use of that linguistic system during comprehension and speech production. Although we can draw some pedagogical implications from theories and research in SLA, the main objective of SLA research is learning and not teaching, although we will touch upon the relationship between SLA and language teaching later in this introduction.

## 1.2. SECOND-LANGUAGE ACQUISITION: A BRIEF HISTORY

As second-language acquisition began as an interdisciplinary field, it is hard to pin down a precise starting date. However, there are two publications in particular that are seen as instrumental to the development of the modern study of SLA: (1) Corder’s 1967 essay *The Significance of Learners’ Errors*, and (2) Selinker’s (1972) article interlanguage (IL). Corder’s essay rejected a behaviorist account of SLA and suggested that learners made use of intrinsic internal linguistic processes; Selinker’s article argued that second-language learners possess their own individual linguistic systems that are independent from both the first and L2s.

In the 1970s, the general trend in SLA was for research exploring the ideas of Corder and Selinker, and refuting behaviorist theories of language acquisition. Examples include research into error analysis, studies in

transitional stages of second-language ability, and the “morpheme studies” investigating the order in which learners acquired linguistic features. The 70s were dominated by naturalistic studies of people learning English as a L2.

By the 1980s, the theories of Stephen Krashen had become the prominent paradigm in SLA. In his theories, often collectively known as the Input Hypothesis, Krashen suggested that language acquisition is driven solely by comprehensible input, language input that learners can understand. Krashen’s model was influential in the field of SLA and also had a large influence on language teaching, but it left some important processes in SLA unexplained. Research in the 1980s was characterized by the attempt to fill in these gaps. Some approaches included White’s descriptions of learner competence and Pienemann’s use of speech processing models and lexical functional grammar to explain learner output. This period also saw the beginning of approaches based in other disciplines, such as the psychological approach of connectionism.

The 1990s saw a host of new theories introduced to the field, such as Michael Long’s interaction hypothesis (IH), Merrill Swain’s output hypothesis (OH), and Richard Schmidt’s noticing hypothesis. However, the two main areas of research interest were linguistic theories of SLA based upon Noam Chomsky’s universal grammar (UG), and psychological approaches such as skill acquisition theory and connectionism. The latter category also saw the new theories of processability and input processing (IP) in this time period. The 1990s also saw the introduction of sociocultural theory (SCT), an approach to explain second-language acquisition in terms of the social environment of the learner.

In the 2000s, research was focused on much the same areas as in the 1990s, with research split into two main camps of linguistic and psychological approaches. VanPatten and Benati do not see this state of affairs as changing in the near future, pointing to the support both areas of research have in the wider fields of linguistics and psychology, respectively.

### **1.3. SIGNIFICANCE OF SLA RESEARCH FOR LANGUAGE LEARNING**

The scope of SLA is broad. It encompasses basic and applied work on the acquisition and loss of second (third, etc.), languages, and dialects by children and adults, learning naturalistically or with the aid of formal instruction, as individuals or in groups, in foreign, L2, and lingua franca settings. Research

methods employed run the gamut from naturalistic observation in field settings, through descriptive and quasi-experimental studies of language learning in classrooms or via distance education, to experimental laboratory work and computer simulations. According to Doughty and Long (2005), researchers enter SLA with graduate training in a variety of fields, including linguistics, applied linguistics, psychology, communication, foreign language education, educational psychology, and anthropology, as well as, increasingly, in SLA per se, and bring with them a wide range of theoretical and methodological allegiances.

Robinson (2001) states that much current SLA research and theorizing shares a strongly cognitive orientation, while varying from nativist, both special (linguistic) and general, to various kinds of functional, emergentist, and connectionist positions. The focus is firmly on identifying the nature and sources of the underlying L2 knowledge system, and on explaining developmental success and failure. Performance data are inevitably the researchers' mainstay, but understanding underlying competence, not the external verbal behavior that depends on that competence, is the ultimate goal. Researchers recognize that SLA takes place in a social context, of course, and accept that it can be influenced by that context, both micro and macro. However, they also recognize that language learning, like any other learning, is ultimately a matter of change in an individual's internal mental state. As such, research on SLA is increasingly viewed as a branch of cognitive science.

## **1.4. THE GOAL OF STUDYING SLA**

Doughty and Long (2005) elaborate on the goal of studying SLA and say that SLA-naturalistic, instructed, or both-has long been a common activity for a majority of the human species and is becoming ever more vital as L2s themselves increase in importance. In many parts of the world, monolingualism, not bilingualism or multilingualism, is the marked case. The 300–400 million people whose native language (NL) is English, for example, are greatly outnumbered by the 1–2 billion people for whom it is an official L2. Countless children grow up in societies where they are exposed to one language in the home, sometimes two, another when they travel to a nearby town to attend primary or secondary school, and a third or fourth if they move to a larger city or another province for tertiary education or for work.



Siegel (1999) mentions that although, in some regions, literacy training or even education altogether is simply unavailable in a group's NL or there are just too many languages to make it economically viable to offer either in all of them, some federal and state governments and departments of education mandate use of a regional lingua franca or of an official national language as the medium of instruction. Such situations are sometimes recognized in state constitutions, and occasionally even in an official federal language policy. All mean that SLA is required of students, and often of their teachers, as well.

Wong (1999) showed that, sometimes, a local variety of a language may be actively suppressed or stigmatized, sometimes even by people who speak it natively themselves, resulting in a need for widespread second dialect acquisition (SDA) for educational, employment, and other purposes. In such cases, a supposedly "standard" variety may be prescribed in educational settings, despite the difficulty of defining a spoken standard objectively, and despite the notorious track record of attempts to legislate language change. The prescribed varieties are L2s or dialects for the students.

In linguistics and psychology, for example, data on SLA are potentially useful for testing theories as different from one another as grammatical nativism (Schwartz, 1992), general nativism (O'Grady, 2001), various types of functionalism (Mitchell and Miles, 1998, pp. 100–20), and emergentism and connectionism. Research on basic processes in SLA draws upon and contributes to work on such core topics in cognitive psychology and linguistics as implicit and explicit learning (Robinson, 1997), incidental, and intentional learning, automaticity (DeKeyser, 2001), attention, and memory, individual differences (IDs) (Segalowitz, 1997), variation (Johnston, 1999), language processing, and the linguistic environment for language learning (Long, 1996).

SLA data are also potentially useful for explicating relationships between language and thought; for example, through exploring claims concerning semantic and cultural universals (Dietrich, 1995), or relationships between language development and cognitive development-confounded in children, but not in SLA by adults. There is also a rich tradition of comparisons among SLA, pidginization, and creolization (Andersen and Shirai, 1996).

In neuroscience, SLA data can help show where and how the brain stores and retrieves linguistic knowledge (Ullman, 2002); which areas are implicated in acquisition (Schumann, 1998); how the brain adapts to additional burdens, such as bilingualism, or trauma resulting in bilingual or

multilingual aphasia; and whether the brain is progressively more limited in handling any of those tasks.

In what has become one of the most active areas of work in recent years, SLA researchers seek to determine whether observed differences in the success of children and adults with L2s is because the brain is subject to maturational constraints in the form of sensitive periods for language learning (DeKeyser, 2000). SLA research findings are also potentially very relevant for populations with special language-learning needs. These include certain abnormal populations, such as Alzheimer's patients (Hyltenstam and Stroud, 1993) and Down syndrome children, where research questions concerning so-called (first) "language intervention" programs are often quite similar to those of interest for (second) "language teaching." Other examples are groups, such as immigrant children, for whom it is crucial that educators not confuse L2 problems with learning disabilities; bilinguals undergoing primary language loss and deaf and hearing individuals learning a sign language, such as American sign language (ASL), as a first or L2, respectively. In all these cases, as Bley-Vroman (1990) pointed out, researchers are interested in explaining not only how success is achieved, but why-in stark contrast with almost uniformly successful child first language (L1) acquisition-at least partial failure is so common in SLA.

## 1.5. STUDIES IN SLA

Microgenesis For Vygotsky, the general principles of sociocultural learning theory apply to a range of different timescales. They apply to the learning that the human race has passed through over successive generations (*phylogenesis*), as well as to the learning that the individual human infant passes through in the course of its early development (*ontogenesis*). For the entire human race, as well as for the individual infant, *learning is seen as first social, then individual*. Consciousness and conceptual development are seen firstly as inter-mental phenomena, shared between individuals; later, individuals develop their own consciousness, which becomes an intra-mental phenomenon. For the human race, and also for the individual infant, *language is the prime symbolic mediating tool for the development of consciousness*. Throughout their life, of course, human beings remain capable of learning; and the local learning process for more mature individuals acquiring new knowledge or skills is viewed as essentially the same. That is, new concepts continue to be acquired through social or interactional means, *a process that can sometimes be traced visibly in the course of talk between expert and*

*novice*. This local, contextualized learning process is labeled microgenesis; it is central to sociocultural accounts of second language learning (SLL).

## 1.6. PROPERTY THEORY AND TRANSITION THEORY

We can only pursue a better understanding of SLL in an organized and productive way if our efforts are guided by some form of theory.

## 1.7. THE PROPERTY THEORIES OF SLA

A theory is a more or less abstract set of claims about the units that are significant within the phenomenon under study, the relationships that exist between them and the processes that bring about change. Thus, a theory aims not just a *description* but also an *explanation*. Theories may be embryonic and restricted in scope, or more elaborate, explicit, and comprehensive. They may deal with different areas of interest to us; thus, a *property theory* will be primarily concerned with modeling the nature of the language system that is to be acquired, whereas a transition theory will be primarily concerned with modeling the change or developmental processes of language acquisition (Mitchell and Myles, 2004).

## 1.8. KEY FEATURES OF A GOOD SLA THEORY

A theory of SLA includes an understanding, in general, of what language is, what learning is, and for classroom contexts, what teaching is. Knowledge of children's learning of their L1 provides essential insights to an understanding of SLA. However, a number of important differences between adult and child learning and between first and SLA must be carefully accounted for. L2 learning is a part of and adheres to the general principle of human learning and intelligence. There is tremendous variation across learners in cognitive style and within a learner in strategy choice. Personality, the way people view themselves and reveal themselves in communication, will affect both the quantity and quality of L2 learning. Learning a second culture is often intricately intertwined with learning a L2. The acquisition of communicative competence is in many ways language socialization and is the ultimate goal of learners as they deal with function, discourse, style, and nonverbal aspects of human interaction and linguistic negotiation. The linguistic contrast between the native and target language (TL) form one source of difficulty in learning a L2. But the creative process of forming an IL system involves the learner in utilizing many facilitative sources and

resources. Inevitable aspects of this process are errors, from which learners and teachers can gain further insight.

## 1.9. WHAT NEEDS TO BE EXPLAINED BY THEORIES IN SLA?

1. **Observation about the Frequency of Input:** The claim of UG theory is that *certain properties of language are not subject to frequency effects*. Indeed, the idea is the opposite: UG allows learners to acquire properties quite unrelated to frequency; children achieve certain kinds of knowledge on the basis of little or no input.
2. **The Logical Problem of L1 Acquisition:** Chomsky has consistently argued that UG principles are inherently impossible to learn, and that therefore, they must be innate. They make up the ‘initial state,’ and as such provide the basis that enables a child to acquire a language. This position is based on the view that the input to which children are exposed is degenerate. It is known as the poverty of the stimulus argument. The logical problem of language acquisition concerns how all children come to acquire with ease and complete success a rich and complex body of linguistic knowledge despite both their lack of cognitive sophistication and insufficient input.

## 1.10. DEVELOPMENTAL STAGE IN SLA

### 1.10.1. The Stages of Development

Acquisition occurs through exposure to correct use of the structure over time in many different linguistic contexts that are meaningful to the student. A good first step in understanding how to help learners become familiar with the stages of SLA. Acquisition is a natural process that involves the use of language in communicative settings, while learning is a more staged process that involves what Krashen calls ‘knowing about language.’ Acquisition occurs as we interact with others due to our need to communicate, while learning involves a more conscious manipulation of language elements, for example, in a classroom setting. Acquisition is more subconscious, informal, and based on feeling and depends on the openness or attitude of the person; learning is explicit and conscious, formal, and based on rules and depends on aptitude. The Natural Approach segments the complex process

of SLA into four basic levels or stages-preproduction, early production, speech emergence, intermediate fluency- and details student and teacher behaviors at each one (Krashen, 1988). Haynes (2005) has added one more stage, advanced fluency, to these stages. Knowing the characteristics of each level equips teachers to communicate effectively with ELLs and to select appropriate teaching strategies. A brief description of each level follows, including an abbreviated matrix of the levels for categorizing your ELL students accordingly.

**Stage 1: Preproduction or Silent Period:** This is the silent period. It is observed at the beginning of exposure to the new language. It may last from a couple of days to several months. In fact, ESL beginners who listen but rarely speak in the new language make just as much, and frequently more, progress in L2 development as their more talkative classmates, by the end of the first year of exposure to English. English language learners (ELL) may have up to 500 words in their receptive vocabulary, but they are not yet speaking. Some repeat everything you say. They are not really producing language but parroting. They listen attentively and may even be able to copy words from the board. They will be able to respond to the pictures. Total physical method (TPR) methods will work well with them, although Asher (2000) believes that TPR is useful at every stage. He states “at this point the instructor concludes, “Hey, this TPR is only good at the beginning.” Of course, this is an illusion. The tool can be used at all levels to help students internalize new vocabulary and grammatical features. But, this requires a conservative application of this powerful tool. Sure, use it in the beginning to catapult students into the TL, then withdraw the technique and save it for future use downstream in training” (p. 1).

**Stage 2: Early Production:** At this level, students have had anywhere from 3 months to a year of English. They can now begin to produce some language, in the form of 1 to 2 word responses along with the same type of non-verbal responses that they depended on in level 1. About 1,000 words form their receptive vocabulary, and as at any other level, about 10% of their vocabulary is expressive (words they regularly use). The types of questions that students can answer at this level are yes/no, “what” questions that elicit 1 to 2 word responses (what is this?), “who” questions, “either/or questions” (is this an ocean or a sea?) and “where” questions that require a simple phrase response. Formulaic chunks of language are emerging as well, with most of the elements of the chunks remaining unanalyzed. For example, they may be able to use the phrase, but they may not be able to understand the function of each word and how the words should form a sentence.

**Stage 3: Speech Emergence:** At this point, somewhere between 1- and 3-years of exposure to English, ELL students' development of proficiency increases exponentially. They use phrases and sentences, and their receptive vocabulary grows to nearly 7,000 words. Questions they are now able to answer include "how" and "why," which require fairly complex responses. Because they can understand a great deal and can express themselves fairly effectively, albeit with grammatical simplicity and developmental errors, ELLs at the speech emergence stage can participate in a variety of teaching strategies.

**Stage 4: Intermediate Fluency:** A shift occurs at this level, after about 3 to 4 years of exposure to English, because ELLs begin to develop cognitive academic language proficiency (CALP) in English (the ability to understand and use English for academic purposes, through texts and discourse). Having mastered the knowledge and skills required for social language (basic interpersonal communication skills (BICS)), ELLs have accumulated approximately 12,000 receptive words and 6000 productive word (Haynes, 2005). They have gone beyond speaking in phrases and simple sentences to being able to engage in extended discourse. They can answer complex questions (Hill and Flynn, 2006).

**Stage 5: Advanced Fluency:** Hong (2008) states gaining advanced proficiency in a L2 can be typically taken from 5 to 7 years. By this stage, students have developed some specialized content-area vocabulary and can participate fully in grade-level classroom activities if given occasional extra support. Students can speak English using grammar and vocabulary comparable to that of same-age native speakers (NSs). Although it may seem that they are able to perform the same activities as NSs in this stage, they continue to need special support until their CALP in English is fully developed and they have closed any gaps in their understanding of the subject due to concepts and skills that were taught prior to their developing adequate proficiency to master them (Hearne, 2000). These lapses can accumulate and cause students to fall farther and farther behind. Care must be taken to provide sufficient contextual support as well as to assess and build background knowledge required for learning any new topic. In addition, cultural, and linguistic biases are a factor in assessing ELL students at this an all levels of proficiency. If the ability to compare and contrast political systems is measured by a test question that requires a grammatically correct essay response, then the objective is not truly being assessed. In many cases, alternative assessments that allow ELLs at this level to demonstrate achievement of a learning objective through creating diagrams, bulleted lists,

and other less language dependent means can improve validity and fairness. The important point to remember is that students at this level are still in the process of learning academic English, and when they experience difficulty or fail to achieve at minimum levels, they require language support.

## 1.11. THE MAIN FOCUS IN SLA

SLA discipline emerged from ‘comparative studies’ of similarities and differences between languages. Such studies were carried out based on the idea that a learner’s L1 has an influence on the acquisition of the L2, originating contrastive analysis (CA) hypothesis. Nunan (2001) introduces two types of SLA research. Product-oriented research which focuses on the outcomes of the acquisition, and the process-oriented research which involves investigating classroom tasks which facilitate SLA.

Kramsch (2003) mainstream SLA research deals with issues like the role of L1 and universals in adult L2 learning, the nature of learners’ developing language system, the rules learners make for themselves as they try to reach native-like mastery, transfer of L1 structures, cognitive, linguistic, and social processes in SLA, the role of input and interaction in the development of IL, what is the role of sociocultural factors, and the optimum evaluation of competencies.

Gendrin (2002), for example, investigates the role of learners’ imagined interactions (as cognition) with NSs in real conversations, which results in the promotion of their propositional and procedural development in their L2 system. He suggests that comparing to other cognitive activities which happens out of a person’s ‘awareness’ imagined activities are ‘mindful.’

In regard to communication and interaction, Eisenchlas (2009) introduces three perspectives in SLA. The first one is a psycholinguistic perspective, which considers the cognitive variables as the main focus of investigation. The second perspective focuses on language use, which necessitates an SLA research which explores the nature of the learning environment and its impact on promoting or hindering linguistic development. Within this paradigm, the interactions between learners and the educational milieu is of critical importance. The third paradigm is an individual and societal multilingualism perspective which brings SLA phenomena into ‘multilingual’ and ‘multicultural’ societies. Abu-Rabia and Kehat (2004) call into question the validity of the critical period hypothesis (CPH) and refute it, even in the case of pronunciation and accent, and introduce talent, participants’ profession, and the amount of L2 use as rival involved in the acquisition



of pronunciation. Singleton (2001) also provides some alternative effective factors in SLA rather than CPH like motivation, environmental factors, instruction, and cognitive considerations.

Larsen-Freeman (2000), on the other hand, criticizes SLA research in that it is decontextualized and neglects social reality, it is based on NS's norms, it considers learners as 'idealized,' 'autonomous' language learners, it mostly deals with grammatical competence. Larsen-Freeman (2000) considers the following as the main focus in SLA research: The extent of L1 influence on the L2; The role of formulaic utterances, The sufficiency of comprehensible input, The existence of free variation, The necessity of noticing, The value of explicit instruction, The feasibility of a non-interface position, The need for negative evidence, The existence of an age-related critical period, The teachability of "good language learner" learning strategies, The role of metalinguistic knowledge.

The CPH is derived from studies which showed that there were biological constraints to L1 acquisition. In particular, Eric Lenneberg (1967) speculated that because the critical period ended at puberty for L1 acquisition, the same probably obtained for L2 learning. Although this account appeals to many people's intuitions and personal experiences, there is no empirical evidence to show that there is a sharp drop in language learning ability after puberty. The research evidence shows that there is no sharp or 'critical' drop-off point, instead language learning ability declines gradually with age, as shown by correlation studies. Furthermore, there is no evidence that there is a qualitative difference in the way children and adults learn a L2 that is, they make similar kinds of errors, and proceed along similar paths of development. The CPH also assumes a minimal role for environmental factors. Yet, studies show that socioeconomic status is a key variable in attaining language proficiency. Data from these studies show that students in low-SES schools attained English proficiency at a rate of about a full year slower than those in richer schools. Moreover, within the Limited English Proficient (LEP) population, a disproportionate number (80%) who come from homes with incomes below the poverty level?

## **1.12. HOW IS KNOWLEDGE OF LANGUAGE ACQUIRED BY SECOND LANGUAGE (L2) LEARNERS?**

Based on UG, and from a theoretical point of view, there are different possible scenarios open to consideration when it comes to the question,



“How is knowledge of language acquired by L2 learners?”

1. **Second Language (L2) Grammars are Constrained by Universal Grammar (UG):** The L2 is one example of a natural language, and it is constrained by UG in the same way as native grammars are. Within this view, there is a range of different possibilities. For example, some researchers believe that L2 learners start off with the parameter settings of their L1, and reset them on the basis of input. Others believe that L2 learners have available to them from the onset the full range of UG parameters, like L1 child learners, and do not resort to L1 parameter settings in the first instance. Others still believe that L2s gradually draw on UG, and that (for example) functional categories are not available to learners at the beginning of the learning process. All these approaches believe that the L2 grammar can (but does not necessarily) become native-like.
2. **Universal Grammar (UG) Does Not Constrain Second-Language Grammars or Universal Grammar (UG) is Impaired:** Some researchers believe that L2 grammars are fundamentally different from L1 grammars because they are not constrained any longer by UG, and learners have to resort to general learning mechanisms, giving rise to ‘wild’ grammars, that is, grammars which do not necessarily conform to the general rules underlying natural human languages. Other researchers believe that only the principles and parameters instantiated (activated) in the learners’ L1 will be available, and that parameter resetting is impossible. Within this view, the L2 grammar is still UG constrained in the sense that it does not violate UG principles and parameters (it is not ‘wild’), but it cannot become the same as that of L1 speakers of the same language. There is considerable controversy around all these issues, and there are many representatives of each of these positions in the literature about SLA.

### 1.13. THE SCOPE OF SECOND LANGUAGE (L2) ACQUISITION INQUIRY

Doughty and Long (2003) contend that the scope of SLA inquiry is broad: “It encompasses basic and applied work on the acquisition and loss of second (third, etc.), languages, and dialects by children and adults, learning naturalistically and/or with the aid of formal instruction, and individuals or

in groups, in foreign, L2, and lingua franca settings” (Doughty and Long, 2003, p. 3). Cook (2003) posits at the advent of SLA, it mainly focused on issues like the amount of transfer from the L1, the systematicity found within learners’ language, the variation between learners or within learners, and the ‘incomplete’ position of acquiring a L2 compared to a L1 acquisition. He also asserts that it has been attempted to employ findings in SLA research in language teaching and learning. Cook (2003) criticizes SLA on the grounds that it fails in taking into account the diversity of learners and languages, and not considering the differences between L1 acquisition and SLA. He finally asserts that considering the diverse individual and sociological variables in SLA, it is difficult to come to reliable and factual conclusions.

Ellis (2009) contends that SLA research is characterized by a rather ‘amorphous’ field of inquiry within flexible limits. Defining the scope of SLA research is problematic considering disagreement between scholars about the ‘nature’ and ‘research aims’ of the field. Eisenclas (2009) contends that “research from the interactionalist perspective views contextual factors as playing a major role in shaping the learner’s developing language system. This runs counter to traditional pedagogical practices still prevalent in language classrooms, in which ‘communication’ serves either as a way of reinforcing the lexicon, grammatical structures and rules that students need to master, or, at advanced levels, as something learners can engage in once the basic target grammar is in place (the ‘icing on the cake’ approach)” (Eisenclas, 2009, p. 49).

Tarone (2000) mentions that “the criticism of SLA research for failure to include social context has become so pronounced that, at present, some influential second/foreign language teacher trainers are even taking the position that L2 teachers do not need to know the results of current SLA research” (Tarone, 2000, p. 184). One of the reasons for such a broad field of inquiry within SLA, according to Doughty and Long (2003), can be the fact that SLA researchers come from a variety of fields of study like linguistics, applied linguistics, psychology, communication, foreign language education, educational sciences, and anthropology, each one with its own ‘theoretical’ and ‘methodological’ underpinnings.

## **1.14. SYSTEMATICITY AND VARIABILITY IN L2 USE**

There are several possible approaches that account for the apparent contradiction between variation and systematicity in learner language. The first approach is that practiced by linguists in the Chomskyan tradition, who

adopt what Tarone has called a 'homogeneous competence model.' In this approach, variation is seen as a feature of performance rather than of the learner's underlying knowledge system. The type of data often preferred by researchers who operate within the homogeneous competence paradigm consists of speakers' intuitions regarding what they think is correct in the L2 rather than actual instances of language use. In effect, then, variability is either discounted in this paradigm as simply as 'slips' or 'performance errors' or, in some case, explained in terms of multiple competencies. The second approach is sociolinguistic in orientation. Sociolinguists such as Labov view a speaker's competence as itself inherently variable. They identify two major sources of variability. Internal variation arises as a result of linguistic factors that condition which specific variant of a linguistic form a speaker selects. For example, whether syllable simplification takes place, depends in part on whether the consonant cluster is integral to a content word (e.g., *mist*) or arises as a result of a grammatical inflection (e.g., *missed*), with final consonant deletion more likely in the latter than the former. External variation arises as a result of social factors that lead a speaker to select one form rather than another. The influence of social factors such as age, gender, and social class is evident in both different varieties of language preferred by groups of speakers (i.e., in inter-speaker variation) and also in stylistic variation within the performance of a single speaker in different social contexts (i.e., in intra-speaker variation). SLA researchers who adopt a sociolinguistic orientation prefer to work with data (often multiple sets of data) that reflect actual instances of language use.

According to Troike (2006), the defining characteristic of L2 learners' language is that it is highly variable. Some changes can be attributed to the dynamic nature of IL, since learners progressively achieve higher levels of L2 proficiency. Social context, according to Troike (2006), also plays a role in L2 variations in language productions, and it is contended that sociolinguistics can account for such variations.

One of the most important contributions of sociolinguistics (beginning with Labov, 1965) has been the demonstration that much of what earlier linguists had considered unsystematic irregularity in language production can be seen to follow regular and predictable patterns when treated as variable features. These are multiple linguistic forms which are systematically or predictably used by different speakers of a language or by the same speakers at different times, with the same (or very similar) meaning or function. They occur at every linguistic level: vocabulary, phonology, morphology, syntax, discourse; they include both standard ("correct") and nonstandard options;

and they are characteristic of *all*-natural language production, whether L1 or L2. According to Tarone (1979) as one of the inherent characteristics of language, when it comes to use in human interactions, it varies with the slightest change in situation, just the way a chameleon changes its color according to the changes in its surroundings. Tarone (1990) also puts forward some arguments against rationalist approaches to IL, which consider the nature of rules as categorical, which means that we either know something categorically or we don't. Tarone (1990) contends that attempts to deal with the problem of variable output by resorting to a competence/performance categorization is contradictory, and furthers the point that the variationist approach can incorporate the view that when some aspects of language are innate and do not need to be acquired, it also explains how forms are initially assimilated into the IL system and how these forms spread over time to new and more complex linguistic context and acquire new or more particular functions.

The relevant contextual features enumerated by Troike (2006, pp. 102, 103) include:

1. **Linguistic Contexts:** Elements of language form and function associated with the variable element. In the examples given above, for instance, the phonological variable [ɪ] in *incoming* is more likely to be used before a word that begins with a back consonant or before a pause, and the variable [n] in *comin'* is more likely before a front consonant.
2. **Psychological Contexts:** Factors associated with the amount of attention that is being given to language form during production, the level of automaticity versus control in processing, or the intellectual demands of a particular task. In learners' production, for instance, the copula of *That is a big book* may be produced during a formal L2 lesson or in a writing exercise but omitted in informal conversation even at the same point of L2 development.
3. **Microsocial Contexts:** Features of setting/situation and interaction which relate to communicative events within which language is being produced, interpreted, and negotiated. These include level of formality and participants' relationship to one another, and whether the interaction is public or intimate.
4. **Macrosocial Factors:** These may also influence linguistic variation. These include features of the larger political setting within which language learning and use takes place, including

the social position and role of users (e.g., whether immigrant, international student, visiting dignitary), societal attitudes toward specific languages and multilingualism in general, and institutional organization (e.g., patterns of education, employment, and political participation). For example, standard and prestige L2 forms are more likely to be used by international students or diplomats while they are functioning within those social roles than by the same individuals while they are shopping in a market or visiting tourist sites.

Although there are strong similarities in the structure of the acquisition process for all learners acquiring a given TL, there is considerable variation in its final point, as well as in its speed. In contrast to L1 acquisition, which produces fluent speakers, there are wide differences in the outcome of the SLA process. The systems of many L2 learners maintain a degree of variability in areas where NSs show none (i.e., they maintain non-target variants such as *I no like it*). At the same time, learners do not display some of the more complex kinds of sociostylistic variation found in native varieties. Coppieters (1987) found that even highly fluent, near-NSs of French had different intuitions about grammaticality and different semantic interpretations of a range of French constructions from NSs.

According to Tarone and Liu (1995, p. 107) “Systematic IL variation occurs when a learner, at a given point in time produces different variants of a particular IL form under different social conditions (e.g., with different interlocutors, or in different physical locations). A learner may seem to have mastered a given TL form in one social context, yet in another social context systematically produce a quite different (and possibly inaccurate) variant of that form.

According to Ellis (1997), who proposes variable competence model, learner language is systematic in that learners consistently use the same grammatical form, although this is often in contrast to that of grammatical forms used by NSs, and also at the same time learner language is variable in the sense that learners sometimes employ one form and sometimes another. Ellis (1997) maintains that learners vary in their use of L2 due to linguistic, situational, and psycholinguistic context. Variable competence models, according to Jordan (2004), have a sociolinguistic approach to SLA and call into question Chomsky’s distinction between competence and performance. It takes competence as variable and not homogeneous. Tarone (cited in Jordan, 2004) maintains that capability underlies performance and that this capability consists of heterogeneous knowledge which varies by speech style.

The argument is that there exist no homogeneous competence underlying performance, but rather there is a variable competence or capacity which is the basis for certain instances of language performance.

Ellis, while not adopting the continuum of styles model, suggests that the L2 learner's IL grammar allows variable rules, whereas the target grammar does not. The observed variability of L2 learners' performance is explained by learners at early stages having a non-variable representation for a grammatical property in the L2, but then successively noticing forms in the input which are in conflict with the original representation. The learner does not initially abandon the original representation, but adds the forms to the representation so that he or she acquires more and more versions of the original rule.

## 1.15. MISCONCEPTIONS ABOUT LANGUAGE ACQUISITION

McLaughlin (1992) cites five unfounded assumptions about language learning that can give teachers unrealistic expectations of the language-acquisition process in the classroom:

- **Myth 1: Children Learn Second Languages (L2s) Quickly and Easily:** Current research indicates that children have no biological advantage in learning languages, although social factors may favor child learners. Unlike adults, however, children do not have the command of vocabulary or memory techniques to help them easily acquire proficiency in a L2.
- **Myth 2: The Younger the Child, the More Skilled He or She will be in Acquiring a Second Language (L2):** Instead, each age group has its own advantages and brings its own skills to the language-learning process. Research has found that older children are better language learners in a school setting, but younger child may have an advantage in learning correct pronunciation.
- **Myth 3: The More Time Students Spend in a Second Language (L2) Context, the Quicker They Learn the Language:** On the contrary, studies of immersion programs indicate that time on task provide no advantage in second-language acquisition. Instead, McLaughlin (1992) notes that continued support in the home language has proven beneficial to children. The use of the home language in bilingual classrooms enables children to maintain

grade-level school work, reinforces the bond between the home and the school, and allows them to participate more effectively in school activities. Furthermore, if the children acquire literacy skills in the L1, as adults, they may be functionally bilingual, with an advantage in technical or professional careers.

- **Myth 4: Children Have Acquired a Second Language (L2) Once They can Speak it:** In reality, proficiency in face-to-face communication does not imply the more complex cognitive proficiency that is required in classroom activities. McLaughlin notes, “All teachers need to be aware that children who are learning in a L2 may have language problems in reading and writing that are not apparent if their oral abilities are used to gauge their English proficiency.”
- **Myth 5: All Children Learn a Second Language (L2) in the Same Way:** Different learning styles and cultural communication methods have an impact on language learning, just as they do on other types of learning. McLaughlin says, “Effective instruction for children from culturally diverse backgrounds requires varied instructional activities that consider the children’s diversity of experience.”

## 1.16. FUTURE DIRECTION OF SLA

SLA has advanced from a number of perspectives, such as nature of the SLA. In this regards, both UG and autonomous induction theory (AIT) of B. Carroll and *UG* of Chomsky advocate innateness. A rival theory is connectionist architecture and competition model (CM) which have functionalist premises. Nick Ellis *Associative Cognitive CREED* and DeKeyser *Skill Acquisition* like Functionalist try to distance themselves from innateness. For CREED language learning is by and large implicit inductive task and therefore committed to incidental learning and unconscious representations. Some relevant issue in this respect is the *role of L1, consciousness* in SLA and *communication strategies*. Theories based on Social context include the activity theory of Vygotsky, interactional hypothesis of Long, OH of Swain.

Future direction in SLA seems to be in the area of nature of learning in which Associative cognitive CREED and Skill Acquisition seem to offer a better future for language. A second area which is predicted to attract attention in the future is complete re-evaluation of SLA theory viewing the advancement in bilingualism and the nature of bilingual competence. The

final area which is likely to develop in the future is the need to theorize experience in explanation of SLA. Learners are different, and they can afford different amount and quantities with the L2. So, one can assume that learners are heterogeneous and variable in their L2 process and outcome. So, learners are different, they process differently, and they can afford different quantities of L2.



## CHAPTER 2

# BRANCH AND PHILOSOPHICAL FOUNDATION OF SLA

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## **2.1. PHILOSOPHICAL FOUNDATION OF SLA**

### **2.1.1. Idealism**

Idealism is the oldest system of philosophy known to man. Its origins go back to ancient India in the East, and to Plato in the West. Its basic viewpoint stresses the human spirit as the most important element in life. The universe is viewed as essentially nonmaterial in its ultimate nature. Although Idealist philosophers vary enormously on many specifics, they agree on the following two points: (1) The human spirit is the most important element in life; and (2) The universe is essentially nonmaterial in its ultimate nature. The idealist concentrates on the learner's mental development. The curriculum emphasizes the study of the humanities. The proper study of mankind, history, and literature are the center of the idealist curriculum. Literary pieces considered the masterworks of humanity occupy an important place in the ideal curriculum. The Teaching Method of the Idealist relies on lectures and discussions. Students also learn by imitating the teacher or some other person who is closely attuned with the Absolute. Idealists also rely heavily on deductive logic. The idealist has little use for field trips and sensory data.

### **2.1.2. Pragmatism**

Pragmatism is based on traditional ways of thinking and finding ways to incorporate new ideas to achieve a desired result. This philosophy keeps people looking for effective methods for completing specific tasks. Because the world is constantly changing, people continue to change things of the past. The nature of pragmatism reflects a naturalistic humanism approach. It also developed a worldview through the scientific revolution. This is an American philosophy with roots from the British, Europeans, and ancient Greeks.

### **2.1.3. Essentialism**

Essentialism refers to the traditional or back to the Basics approach to education. It is so named because it strives to instill students with the essentials of academic knowledge and character development. The term essentialism as an educational philosophy was originally popularized in the 1930s by the American educator Bagley (1874–1946). The philosophy itself, however, had been the dominant approach to education in America from the beginnings of American history. Early in the twentieth century, essentialism was criticized as being too rigid to prepare students adequately for adult life.

But with the launching of Sputnik in 1957, interest in essentialism revived. Among modern supporters of this position are members of the President's Commission on Excellence in Education. Their 1983 report, *A Nation at Risk*, mirrors essentialist concerns today. Kilbeck (1982, as cited in, Clark, 1987) once made in the history of pedagogy according to the philosophy of education is divided into three categories: (a) classical humanism; (b) gradualism (progressivism); and (c) reconstructionist (reconstructionism), which are discussed in subsections.

### **2.1.3.1. Classical Humanism**

As said by Skilbeck (1982, as cited in Clark, 1987), Classical humanism that language learning is mainly to read and absorb the target language (TL) culture is the education and training in ways of thinking. Teaching Purpose: Humanistic Education; syllabus: content-oriented (content-oriented); learning and teaching materials: the theme center; teaching method: grammar-translation; testing instruments: normative frame of reference (normal-referenced). The shortcoming is that too much emphasis on language knowledge, emphasis on writing, oral neglect capacity-building, cannot guarantee the use of foreign language ability.

### **2.1.3.2. Progressivism**

Today progressivism means pedagogical progressivism. It means basing instruction on the needs, interests, and developmental stage of the child; it means teaching students the skills they need in order to learn any subject, instead of focusing on transmitting a particular subject; it means promoting discovery and self-directed learning by the student through active engagement; it means having students work on projects that express student purposes and that integrate the disciplines around socially relevant themes; and it means promoting values of community, cooperation, tolerance, justice, and democratic equality. In the shorthand of educational jargon, this adds up to child-centered instruction, discovery learning, and learning how to learn. And in the current language of American education schools, there is a single label that captures this entire approach to education: constructivism.

### **2.1.3.3. Reconstructionism**

Reconstructionism is one of the major philosophies of education. It was developed as a response to different social problems such as poverty, hunger, racism, and social injustices rampant in the modern world. The proponents

of this philosophy believed that education must prepare people to overcome the social issues of the day. According to Thomas (1994), *reconstructionism* is based on two premises: (1) education is seen as cultural transformation, and (2) democracy must be implemented in schools and society. (p. 74). Change is a key concept in *reconstructionism*. Reconstructionism was in favor of fostering democracy among people, but it can be criticized from a democratic perspective. *Reconstructionists* favored emancipation and equality among people. The methodologies developed based on *reconstructionism* reduce “people to the level of automatons who can be trained to behave in particular way and preclude such concepts as autonomy, self-fulfillment, and personal development” (Finney, 2002, p.77). Lack of concern with individual differences (IDs) in different contexts and situations are what Bazile and Nauman (2004) consider as their major flaw. To Clark (1987), the main criticism against *reconstructionist* classes is that everything is rigidly predetermined, not on the basis of learner’s subjective felt needs but based on the objective needs determined in advance outside a particular classroom context in which the learning is going to take place. Paulo Friere (1921–1997) believed in education as a *vehicle of change*. One of the other influential figures of *reconstructionism* is Paulo Friere (1921–1997), who believed in education as “a vehicle of change.” According to Day (1999) “he tirelessly espoused the cause of sociopolitical emancipation and individual empowerment through the democratic process of education” (p.43). He was against the typical mechanism and methods of education such as grading and control by the teachers which according to Clark (1987) “imposes on the peasants a passivity and subservience to authority” (p.36). One must learn to resist oppression and to make oneself a free and independent individual.

## 2.2. MAIN FOCUS

Reconstructionist curriculum focus on student experience and taking social actions on real problems. In such classes, the time and quality of instructions and learning time allowed to each learner are made appropriate to the characteristics and needs of each learner. All learners must be provided with favorable learning conditions in order to attain equality of learning outcomes. Reconstructionism in language teaching is above all concerned with “bringing about a better understanding among social groups, through teaching them to communicate with each other effectively” in order to promote international understanding and communication a cross nations (Clark, 1987, p.22).

## **2.3. MAIN CRITICISM**

To Clark (1987), the main criticism against reconstructionist classes is that everything is rigidly predetermined, not on the basis of learner's subjective felt needs but based on the objective needs determined in advance outside a particular classroom context in which the learning is going to take place. True equality is fostered if everyone is permitted to develop his abilities to the highest possible degrees, while reconstructionist classes emphasize the equality of outcome in the learning process. The focus is on the product, not the process. In identifying the communicative needs of the learners, the dynamic and creative nature of language is ignored. The essence of communication is variety depending on the specific situation, so it is not something that can be learned by role-playing based on predetermined scripts. The differences of learners in terms of affective and cognitive strategies are ignored. Things are done in accordance with what others think is best for the learner, not in accordance with the pupil's real interests, motivations, and abilities. It can be concluded a curriculum that is based on the initial analysis of the learner's need that not taking account of the difference in particular classroom context and particular learning situation is not emancipatory or democratic and cannot foster equality.

## **2.4. EMPIRICISM**

an application in linguistics of the general sense of this term in philosophy to refer to a view of language, and especially of language acquisition, in which sense experience is seen as the ultimate source of learning. It is opposed to rationalism, which asserts that knowledge about language can derive from sources other than sense experience. In empiricism, language acquisition is seen as a process of generalization from experience; in rationalism, it results from the maturation of a language faculty (organ) governed by various innate principles.

## **2.5. THE CONTENT MODEL: CLASSICAL HUMANISM**

The central focus of the curriculum in this model is the content of what is to be learned by, or transmitted to, the learner. In the Classical Humanist tradition, the content is a valued cultural heritage, the understanding of which contributes to the overall intellectual development of the learner; and, from the point of view of epistemological objectivism, the content is

knowledge which has been identified and agreed to be universal, unchanging, and absolute. This model has been the dominant philosophy underlying the history of the Western educational system for centuries, derived from theories of knowledge going back to Aristotle and Plato. Its attraction lies in the fact that most people, when challenged, would have fairly definite ideas of what they consider as essential to a ‘good’ education, for example, literature, ethics/religion, the physical sciences, the biological sciences, history, a second language (L2), with a resultant ability in the learner “to think effectively, to communicate thought, to make relevant judgments, to discriminate among values” (Hirst, 1965, p. 2).

Undoubtedly, this owes much to the power this model holds over us as products of a largely content-based curriculum. However, as Kelly (1989, pp. 45–46) points out, the model is inadequate as the basis for curriculum design because it is unable to cope with a discussion of the wider purposes of education, and does not take into account the abilities or problems of the individual learner or the complexities of the learning process itself. In the era of globalization and the growth of multicultural societies, it cannot justify the transmission of one particular culture; within the ethos of ‘education for all’ it is unable to take account of the widely differing needs of a massive student population, where the ‘educated’ are no longer an elite trained to rule the next generation of workers; as the basic premises of science no longer rest on objective, logical, value-free theories but are shaken by the discoveries and uncertainties of quantum physics, the foundations of universal knowledge are no longer secure and an educational philosophy based on these foundations is no longer acceptable.

That is not to say that ‘content’ has no role whatsoever in curriculum design, only that as a model it is too simplistic, and too much a product of an earlier, very different society, to be the central planning factor for curricula today. In the field of English language teaching, this model underpins the grammar-based curriculum, where the syllabus is concerned with the grammar and vocabulary of the language. If we return to Richards’s definition of curriculum, then the *purposes* of the program are to transmit knowledge of the language system to the learners and to ensure that they master the grammar rules and vocabulary of the language; the *content*, or the syllabus, is a selection and sequencing of individual grammar points and lexis; the *teaching procedures* and *learning experiences* will include drilling of grammatically correct sentences, explanations of theory and memorization of lists of vocabulary; and *assessment* is based on the learner’s ability to produce grammatically accurate language. The starting point for

the grammar-based curriculum, then, is the TL as a relatively fixed concept and it largely ignores factors such as context, appropriacy of use, modes of discourse, or individual learner needs; as such, it reflects an essentialist (or objectivist) approach to meaning. With the advent of the communicative approach to language learning in the late 1960s and 1970s, this approach to language curriculum design has increasingly fallen out of favor. Although it still has a place in content for syllabus design, as a basis for planning a curriculum, the grammar-based approach is not the primary factor.

## **2.6. THE PROCESS MODEL: PROGRESSIVISM**

Kelly sums up the objections to the contents and objectives models as “the fact that neither offers any real help with that decision which must precede all others, namely the choice of content and/or aims and objectives,” and proposes the process model as an approach to curriculum planning which attempts to deal with this “value issue as the prime concern in educational planning” (1989, p. 84).

The purpose of education from the point of view of the process model is to enable the individual to progress towards self-fulfillment. It is concerned with the development of understanding, not just the passive reception of ‘knowledge’ or the acquisition of specific skills. The goals of education are not defined in terms of particular ends or products, but in terms of the processes and procedures by which the individual develops understanding and awareness and creates possibilities for future learning. Content, then, is based on principles derived from research into learning development and the overall purposes of the educational process, which allows the formulation of objectives related to the procedural principles.

The model rests on concepts of learner needs, interests, and development processes and is thus open to the criticism of subjectivity in the definition of these concepts, but, as the body of research in the field of developmental psychology expands, there is an increasing acceptance of its underlying philosophy. In practice, however, as a basis for national curriculum development projects, it is less attractive than the objectives model for large-scale curriculum development and planning related to government trends in the West towards vocational training to meet employment needs. In the language teaching world, there has been a move towards the ‘learner-centered curriculum’ (Nunan, 1985, 1988; Candlin, 1984), and even towards a definition of a ‘learning centered curriculum’ (Dickinson, 1987). Although these ideas inform much of the work done in curriculum research and

development, as the central principle for curriculum design, they are, as yet, peripheral rather than mainstream. Richards and Renandya (2002, pp. 71–73).

## **2.7. BRANCHES IN SECOND LANGUAGE (L2) ACQUISITION**

### **2.7.1. Neurolinguistics and SLA**

Neurolinguistics is the branch of linguistics that is concerned with the cerebral-physiological prerequisites of language. In other words, it studies the neurological bases of the mental processes which were, traditionally, studied in psycholinguistics. Because of this similarity between the two fields, some scholars view neurolinguistics as a linguistic companion to psycholinguistics. Neurolinguistics studies the relation of language and communication to different aspects of brain function, that is, it attempts to explore how the brain comprehends and produces language and communication. In fact, neurolinguistics tries to combine theory from neurology/ neurophysiology (how the brain is structured and how it functions) with linguistic theory (how language is structured and how it functions). Neurolinguistics can still be divided into two areas: language acquisition and processing and language impairment.

The main focus of neurolinguistics is to find an answer to the following questions:

- How is language physically represented in the structure of the brain?
- How is language (or e.g., grammatical structure) factually processed?
- What is the neurological make-up or development of the brain during language acquisition?
- What happens to language and communication due to different types of damage to the brain?
- How do children learn to communicate and use language? How can we relate their acquisition of language to the development of their brains?
- How can we measure and visualize processes in the brain that are involved in language and communication?



- How can we make good models of language and communication processes that will help us to explain the linguistic phenomena that we study?
- How can we make computer simulations of language processing, language development, and language loss?
- How can we make experiments that will allow us to test our models and hypotheses about language processing?

### 2.7.2. The Relation Between Language and Brain

According to Paradis (2000), Localism stands for the differentiation of different “higher functions” that are localized in different centers of the brain, mainly the cortex. Associationism assumes that higher functions are dependent on the connections between different centers in the cortex. Linguistic ability is seen as the relation between images and words. Aphasia results from broken connections between the centers that are needed for linguistic function (Schumann and Amaral, 2009).

### 2.7.3 Dynamic Localization of Function

As Paradis (2000) states, in this type of theory, different sub-functions are seen as localized in different parts of the brain. These sub-functions must be combined in order to achieve more complex functions, which can be “put together” in a number of different alternative ways. The relation between a localized lesion and the functions that are disturbed becomes more complex in this case.

Holism is the opinion that the brain, at least concerning higher functions, works as a whole. The cortex is said to handle, for example, “higher cognitive function,” “symbolic thinking,” “intelligence” or “abstraction” and aphasia is a sign of a general cognitive loss, not a specific language loss. This view has also been called “cognitivism” (Schumann, and Amaral, 2009). According to Jacyan (1999) “unitarism” refers to one unitary function of the brain, the view that the soul is one and cannot be divided, and “equipotentiality,” means that all parts of the cortex have the same functional potential and that the size of a brain lesion determines the extent of the aphasia. Language lateralization, which is also referred to as the Cerebral Functional Asymmetry according to Paradis (1990) refers to the condition wherein one hemisphere rather than the other is relatively more active during performing a specific task. Although some scholars have considered the left-hemisphere as the key in the process of language acquisition, the observations made during a

great deal of studies have resulted in the view that the right hemisphere is necessary for language processing and that trauma to this side of the brain could result in severe linguistic discrepancies.

A sensitive period refers to any duration of time when the neuronal connections within the brain are particularly susceptible to environmental input. The critical period is a special case of sensitive periods when the brain MUST receive certain stimulation or input in order to continue to function normally. Lenneberg (1967, as cited in Paradis, 2000) defines it as “a period of time with a specific onset and offset during which language can be acquired more easily than any other time.

Birdsong (2006) states that strict either/or categorization of a true critical period as defined in biology is inappropriate to be used when it comes to SLA. To solve this problem, he prefers the term sensitive period as it allows for the existence of exceptions because it does not consider it critical to start learning the L2 in the specified bounded period. Some scholars even prefer the term ‘age effect’ to critical. Several scholars have suggested that since the different components of language-phonology, morphology, syntax, lexicon, and pragmatics are acquired relatively independently of each other, their development might follow different timetables, pointing to the possible existence of multiple critical periods for a person.

## **2.8. EPISTEMOLOGICAL BELIEFS (EB)**

*Epistemology* is a philosophical construct, which deals with the rationality of beliefs, the nature, source, and transferring of knowledge (Hofer and Pintrich, 1997). Different notions (e.g., ‘*epistemological beliefs (EB)*,’ ‘*epistemic cognition*,’ ‘*epistemic cognition*,’ ‘*epistemological resources*,’ ‘*epistemological reflection*,’ ‘*personal epistemologies*,’ ‘*reflective judgment*’) have been acknowledged in the literature to refer to EB. However, all subsumed under the term EB due to its readability (Osiochru, 2018). Originally, Piaget (1950) coined the label *genetic epistemology* to clarify the *intellectual developmental theory*. Along parallel lines, Perry (1970) was pioneered in the field who classified students in four terms of *dualism*, *multiplism*, *relativism*, and *commitment*. Perry suggested that learners go through a predictable stage of epistemic growth ranging from dualist to relativist epistemologies. Later, Hofer and Pintrich (1997) classified epistemic studies into six categories: (a) Perry’s theory of epistemological development, (b) measurement tools, (c) gender-related studies, (d) epistemic awareness, (e) dimensions of EB, and (f) examining how EBs

affects the learning process. Initially, researchers (Hofer, 2016; King and Kitchener, 1994; Schommer, 1990) theorized that EB is a unidimensional facet. They underscored that EB develops longitudinally from simple to complex thinking processes. However, there is little congruence among the researchers on the actual categories of EB. They unanimously posited that EB is a complex system comprising various independent facets. Schommer (1990) introduced three separate repertoires about the *structure and source of knowledge*. Schommer asserts that knowledge is (a) *simple*, (b) *certain*, and (c) transferred by the *authority*. Later, Schommer (1990) proposed five dimensions for EB. She studies the following aspects: *the source of learning and innate ability, the simplicity and the certainty of knowledge structures, and the rate of acquisition*. Schommer conceptualized that the EB is a personal and implicit belief attribution. It deals with students' assumptions about learning and the essence of knowledge. Similarly, Hofer and Pintrich (1997) identified four discrete constructs: *simplicity, certainty, the source of knowledge, and the rationale for knowing*. They conceived EB is the beliefs held about knowledge and understanding. Differently, Hammer and Elby (2002) suggested the importance of *domain specificity* of EB. They attested that an individual might have numerous epistemic resources that might be activated in a specific situation. They identified two discrete resources of knowledge (i.e., transmitted and fabricated stuff). Many practitioners (Aditomo, 2018; Bellad, Gu, Kim, and Turner, 2019; Osiochru, 2018; Schommer, 1990; Hofer and Pintrich, 1997) concurred that beliefs held by learners have unique impacts on the strategies they employ. Researchers acknowledged that EB comprised different autonomous dimensions, each of which can promote the learning process (Shirzad, Barjesteh, Dehqan, and Zare, 2020).

## 2.9. APPLIED LINGUISTICS

A branch of linguistics where the primary concern is the application of linguistic theories, methods, and findings to the elucidation of language problems which have arisen in other areas of experience. The most well developed branch of applied linguistics is the teaching and learning of foreign languages, and sometimes the term is used as if this were the only field involved. But several other fields of application have emerged, including the linguistic analysis of language disorders (clinical linguistics), the use of language in mother-tongue education (educational linguistics), and developments in lexicography, translation, and stylistics. There is an uncertain

boundary between applied linguistics and the various interdisciplinary branches of linguistics, such as sociolinguistics and psycholinguistics, especially as several of the latter's concerns involve practical outcomes of a plainly 'applied' kind (e.g., planning a national language policy). On the other hand, as these branches develop their own theoretical foundations, the distinction between 'pure' and 'applied' is becoming more apparent, and the characterization of research as being in 'applied psycholinguistics,' etc., is now more regularly encountered (Crystal, 2008).

## 2.10. PSYCHOLINGUISTICS AND SLA

Psycholinguistics is an interdisciplinary field that brings together linguistics and psychology (both their theories and empirical methods) to understand the mental processes and psychological mechanisms which make it possible for humans to acquire, understand, produce, and process language. The main themes in psycholinguistic research are how humans understand spoken and written language, and how we produce and acquire language. Unlike linguistics where the main focus is on understanding the structure of language and languages, in psycholinguistics, psychological techniques and methods are used to carry out studies aimed at understanding a range of issues which inform our understanding of the nature of the psychological mechanisms which allow us to acquire and use language.

There are two possible directions of study. One may use language as a means of elucidating psychological theories and processes (e.g., the role of language as it affects memory, perception, attention, learning, etc.), and for this, the term *psychological linguistics* is sometimes used. Alternatively, one may investigate the effects of psychological constraints on the use of language (e.g., how memory limitations affect speech production and comprehension). It is the latter which has provided the main focus of interest in linguistics, where the subject is basically seen as the study of the mental processes underlying the planning, production, perception, and comprehension of speech, and investigations typically proceed by examining linguistic performance through small-scale experimental tasks. A theory-driven approach is also encountered, in which evidence to support a point of linguistic theory (often in relation to *generative grammar*) accumulates using such techniques as adult grammaticality judgments. The subject now includes a large number of research domains, notably child language acquisition, second language acquisition (*SLA*), language processing, linguistic complexity, the relationship between linguistic and cognitive

universals, the study of reading, language pathology, and species specificity (Crystal, 2008).

## 2.11. DEVELOPMENTAL LINGUISTICS

A term occasionally used for the branch of linguistics concerned with the study of the acquisition of language in children. The subject involves the application of linguistic theories and techniques of analysis to child language data, in order to provide a precise description of patterns of development and an explanation of the norms and variations encountered, both within individual languages and universally. In relation to the task of explanation, particular attention is paid to the role of non-linguistic factors, such as COGNITION, social background, the nature of the experimental task, and so on, and as a consequence, there has been an increasingly multidisciplinary approach to the problem. Because of the particular relevance of psychological factors, the subject is more commonly referred to as *developmental psycholinguistics* (Crystal, 2008).

## 2.12. COGNITIVE LINGUISTICS

*Cognitive linguistics* provides detailed qualitative analyzes of the ways in which language is grounded in our *experience* and our *embodiment*, an embodiment which represents the world in a very particular way. The meaning of the words of a given language, and how they can be used in combination, depends on the perception and categorization of the real world around us. Ultimately, everything we know is organized and related to other parts of our knowledge base in some meaningful way, and everything we perceive is affected by our perceptual apparatus and our perceptual history. Language reflects this embodiment and this experience. The different degrees of *salience* or *prominence* of elements involved in situations which we wish to describe affect the selection of subject, object, adverbials, and other clausal arrangement. Figure/ground segregation and *perspective-taking*, as processes of vision and attention, are mirrored in language and have systematic relations with syntactic structure. In production, what we express reflects which parts of an event attract our *attention*; depending on how we direct our attention, we can select and highlight different aspects of the frame, thus arriving at different linguistic expressions. In comprehension, abstract linguistic constructions (like simple transitive, locatives, datives, resultatives, and passives) serve as a “zoom lens” for listeners, guiding their attention to a particular perspective on a scene while backgrounding other

aspects (Goldberg, 1995). Thus, cognitive linguistics aims to understand how the regularities of syntax emerge from the cross-modal evidence that is collated during the learner's lifetime of using and comprehending language.

## 2.13. SOCIOLINGUISTICS

A branch of linguistics which studies all aspects of the relationship between language and society. Sociolinguists study such matters as the linguistic identity of social groups, social attitudes to language, standard and nonstandard forms of language, the patterns and needs of national language use, social varieties and levels of language, the social basis of bilingualism and multilingualism, and so on. An alternative name sometimes given to the subject (which suggests a greater concern with sociological rather than linguistic explanations of the above) is the *sociology of language*. Any of the branches of linguistics could, in principle, be separately studied within an explicitly social perspective, and some use is accordingly made of such terms as *sociophonetics* and *sociophonology*, when this emphasis is present, as in the study of the properties of accents. In Hallidayan linguistics, the term *sociosemantics* has a somewhat broader sense, in which the choices available within a grammar are related to communication roles found within the speech situation, as when a particular type of question is perceived in social terms to be a threat.

The term overlaps to some degree with *ethnolinguistics* and *anthropological linguistics*, reflecting the overlapping interests of the correlative disciplines involved—sociology, ethnology, and anthropology. The study of dialects is sometimes seen as a branch of sociolinguistics and sometimes differentiated from it, under the heading of *dialectology*, especially when regional dialects are the focus of study. When the emphasis is on the language of face-to-face interaction, the approach is known as *interactional sociolinguistics*. *Sociological linguistics* is sometimes differentiated from sociolinguistics, particularly in Europe, where the term reflects a concern to see language as an integral part of sociological theory. Also sometimes distinguished is *sociohistorical linguistics*, the study of the way particular linguistic functions and types of variation develop over time within specific languages, speech communities, social groups and individuals (Crystal, 2008).

## 2.14. WITTGENSTEIN AND LANGUAGE PHILOSOPHY

Wittgenstein bases his ideas on the framework that language is acquired by children learning different “language games” in which they learn to associate objects with meaning, and that those meanings are common to all, rather than something internalized (Joseph et al., 2001, p. 80). Hence, children learn language as they learn any other game, with the words all gaining meaning from the culture around them.

*Philosophical investigations* is most compatible with the topic of language education. They are particularly relevant to the current discussions surrounding the concept of post method pedagogy because they deal with the most basic questions teachers and researchers deal with when they reflect upon the nature of language, learners, and language learning. Wittgenstein’s theory of language as it is formulated in the PI was ahead of its time and set the fields of philosophy and linguistics on the paths they took through the second half of the twentieth century. The following sections will reveal the relevance of Wittgenstein’s conceptualizations of language, the learner, and language learning to the field of SLA within a post method perspective (Crystal, 2008).

## 2.15. WITTGENSTEIN’S CONCEPT OF LANGUAGE

Wittgenstein begins his exploration of the nature of language by bringing into question the understanding of language that was dominant in his time. In the introductory paragraphs of the *PI*, he questions the view of language embodied by Augustine’s account of how he learned to speak his native language (NL) (Joseph et al., 2001, p. 80). While acknowledging the validity of language as system as described by Augustine, Wittgenstein is not completely satisfied with it and argues that one fallacy inherent in Augustine’s account of language and language learning is that meaning and language are separate entities and that meanings are universal, regardless of the language used to express them (Stoyanoff, 1998). Wittgenstein argues that meaning is constructed *within* language, because one is not able to conceive of meaning without the use of language. Hence language, according to Wittgenstein, can only be understood *as it is used*: within a given context, serving a particular language as users cannot ignore the interconnectedness of these three aspects. This view of language is very fitting for a post method conceptualization of language because it recognizes the structural, social as well as ideological nature of language function, inextricable from culture

and ideology, and often without language users' explicit awareness of its inner workings (Riddle, 1997). This view of language is highly complex and contains elements of the three views of language: System, discourse, and ideology (Kumaravadivelu, 2006, p. 3). Language is simultaneously an instrument for the expression of meaning, a means by which people communicate, and the medium through which ideology is created and disseminated (Crystal, 2008).



## CHAPTER 3

# APPROACHES IN SECOND LANGUAGE ACQUISITION

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### 3.1. BEHAVIORAL APPROACH

A psychological theory of learning dominant in the 1950s and 1960s, most closely associated with B. F. Skinner, but originating with Ivan Pavlov's well-known classical conditioning experiments with dogs. According to behaviorism, language was viewed as a process of habit formation. This process consists of three steps:

- **Stimulus:** A signal from the environment that evokes a reaction;
- **Response:** The learner's reaction to the stimulus; and
- **Reinforcement:** A reward for an appropriate response: reinforced behavior gets internalized, a behavior that is not reinforced is extinguished.

Behaviorism attempted to explain learning without reference to thinking or mental processes. Essentially, it claimed that as an organism interacts with its environment, its behavior is conditioned. Dogs that get bitten by spiders will avoid spiders in the future (negative reinforcement). Dogs that stick their paws out to shake and get a treat for doing so will stick their paws out later when told to shake (positive reinforcement). Behaviorists feel that in studying learning, the focus should be on the relationship between the environmental INPUT and an organism's behavior, since this relationship is the only measurable observable relationship. Therefore, an important tenet of behaviorist theory is that all learned behavior is based upon specific stimulus relationships in the environment.

Skinner extended his theory of Stimulus-Response (S-R) Learning in his book, *Verbal Behavior*. Skinner's theory of verbal behavior was an extension of his general theory of learning by *operant conditioning*. In the L2 context, learners were to be trained to repress L1 habits (learned from the environment in response to linguistic input, reinforcement, and contingencies) and acquire good L2 habits. Behavior was modified over time when learners were rewarded for responding correctly. Errors were a sign of failure that should be corrected immediately. Lado's contrastive analysis (CA) hypothesis was influenced by behaviorism by considering the potential difficulties encountered when replacing L1 behaviors with newly learned L2 behaviors. The pedagogical and practical implications of behaviorism resulted in the audiolingual method (ALM). The ALM was an approach to language teaching based on mechanical and pattern language practice called 'drills' (e.g., repetition and substitution/transformation drills). L2 learners had to repeat, manipulate, or transform a particular form or structure in order to complete the drill.

A behavioral approach to language acquisition was heavily criticized by Noam Chomsky, who argued against such an approach, triggering the cognitive revolution. It was strongly criticized as it did not take into account certain properties of language, especially *creativity*. Similarly, the rejection of language error was considered to be a wrong approach as empirical evidence did not prove the detrimental influence of error on language acquisition. The debate continues as to the relative role of the linguistic environment in language learning, as opposed to more innate and internally driven processes as exemplified by universal grammar (UG) (VanPatten and Benati, 2010).

### 3.2. NEOBEHAVIORISM

Neobehaviorism bridges the gap between behaviorism and cognitivism. Like Thorndike, Watson, and Pavlov, the *neobehaviorists* believe that the study of learning and a focus on rigorously objective observational methods are crucial to scientific psychology. Unlike their predecessors, however, the neobehaviorists are more self-consciously attempting to formalize the laws of behavior. They are also under the influence of the Vienna Circle of logical positivists, a group of philosophers led by Rudolph Carnap, Otto Neurath, and Herbert Feigl, who maintain that meaningful statements about the world need to be formed as statements concerning physical observations. Anything else is metaphysics or nonsense, not science, and must be rejected. Neobehaviorism is concerned with hidden variables and tries to provide formal theories of behavior and to establish the fundamental law of learning or habit-formation as a unifying factor for all social sciences. Hull-Spence's *Neobehaviorism* focuses on molecular building blocks that are described as forming sequences of connecting events between environmental stimuli and behavior. Hull's *Neobehaviorism* can be considered as functionalist in that it is interested in an organism's survival. Tolman is almost the only behaviorist who notices the problems in S-R theory, since reinforcement is not essential for learning to occur. He feels that behavior is holistic, purposive, and cognitive. Tolman's views can be summarized by saying that behavior is not a response to a stimulus but is cognitive coping with a pattern of stimuli. Tolman is similar to the behaviorists in his emphasis on objectivity and measurement. He differs in that he does not believe reinforcement is crucial for learning to take place.

### 3.3. COGNITIVE APPROACH

Cognitive approaches to the second language (L2) acquisition put more emphasis on the learning component of SLL, that is, they are interested in transition theories. They view SLL as just one instantiation (i.e., working example) of learning among many others, and they believe that we can understand the second language acquisition (SLA) process better by first understanding how the human brain processes and learns new information. The focus is very much on the learner as an individual (unlike the work of social theorists), but, unlike UG theorists who draw their hypotheses from the study of linguistic systems, the hypotheses they are investigating come from the field of cognitive psychology and neurology, and from what we know about the acquisition of complex procedural skills in general. According to Mitchell and Myles (2004), cognitive theorists fall into two main groups:

1. The theorists such as *Pienemann, or Towell and Hawkins* (1994), who believe that language knowledge might be ‘special’ in some way, but who are concerned to develop transition or processing theories to complement property theories such as UG or Lexical Functional Grammar; and
2. Theorists such as *N.C. Ellis, MacWhinney, or Tomasello*, who do not think that the separation between property and transition theories is legitimate, as they believe that you can explain both the nature of language knowledge and how it is processed through general cognitive principles.

In fact, they do not generally make the distinction between competence and performance, as they see these as being one and the same thing. In this view, the learner is seen as operating a complex processing system that deals with linguistic information in similar ways to other kinds of information. The first group of linguists belong to *processing approaches*, and the second group to *emergentist or constructionist approaches*. *Processing approaches*, as their name indicates, investigate how L2 learners process linguistic information, and how their ability to process the L2 develops over time. *They are focused primarily on the computational dimension of language learning*, and might or might not believe that language is a separate innate module.

Constructivist or emergentists views of language learning share a usage-based view of language development, which is driven by communicative needs, and they refute the need to posit an innate, language specific, acquisition device. They include approaches known as emergentism, connectionism or

associationism, constructivism, functionalism, cognitivism, competition model (CM), etc. “They emphasize the linguistic sign as a set of mappings between phonological forms and conceptual meanings or communicative intentions” (Ellis, 2003, p. 63). Learning in this view is seen as the analysis of patterns in the language input, and language development is seen as resulting from the billions of associations which are made during language use, and which lead to regular patterns that might look rule-like, but in fact are merely associations. “Constructivists believe that the complexity of language emerges from associative learning processes being exposed to a massive and complex environment” (Ellis, 2003, p. 84).

Barjesteh (2019) believes that with the advent of the constructivist approach to education, instruction takes a critical and socio-political dimension. More precisely, the constructivist school challenges teachers and students to rethink the purpose of schooling, and the role that they might play as “*cultural workers*” – a term borrowed from Freire (1998, p. 30 as cited in Barjesteh, 2019). Many researchers within emergentist frameworks believe that language develops as learners move from the learning of exemplars (words, formulae) that are committed to memory; from these, regularities emerge, giving rise to slot-and-frame patterns, such as *all gone* + referent or */ can't* + verb. As more and more of these formulae develop, they are compared and analyzed, regularities extracted and applied elsewhere. This phenomenon is well documented in early first language (L1) acquisition, and many emergentists’ L1 acquisitions believe it drives the acquisition process. “The children are picking up frequent patterns from what they hear around them, and only slowly making more abstract generalizations as the database of related utterances grows” (Ellis, 2003, p. 70). Verbs have been found to be particularly productive in allowing children to make abstract generalizations about their argument structure on the basis of the formulaic sequences they appear in (Goldberg, 1999). In SLA, chunks are also very common in the early stages, and learners have been shown to gradually analyze them into their constituents. Ellis (2003) has also argued that these processes of chunking (i.e., moving from unanalyzed chunks to abstract generalizations) are central to SLA (Mitchell and Myles, 2004, pp. 96–100).

### 3.4. COGNITIVE APPROACHES: MAIN TENETS

Cognitive approaches see the acquisition of a L2 as the acquisition of a complex skill, and here researchers believe that we can better understand the SLA process by investigating how the human brain processes and learns

new information, as well as how a learner's individual makeup impacts on this process. The focus is very much on the learning dimension of SLA, rather than on the formal properties of learners' L2s. These approaches are generally classified as *transition* theories, that is, theories which aim to understand how learners develop over time in the L2 (Gregg, 2003; Schwartz, 1998) rather than as *property* theories, which describe and explain learners' linguistic systems. As we will see below, however, the boundary is not always clear, and some cognitive approaches consider the language system and its acquisition as one and the same thing (Mitchell and Myles, 2004).

### 3.5. DOMAIN OF INQUIRY

The domain of inquiry of *cognitive approaches* is varied, but as is the case with formal linguistic approaches, they also *focus on the individual and on what happens in the human mind*. However, rather than drawing hypotheses from the study of linguistic systems, cognitivists' hypotheses originate from cognitive psychology and neurology, and from what we know about the acquisition of complex skills generally. They view SLA as one instantiation of learning, relying on the same mechanisms as other types of learning, rather than as language-specific, as the UG approach does. Consequently, processing approaches have been interested not so much in the formal properties of language, but on how learners gradually expand their linguistic knowledge and learn to access it increasingly efficiently in online production (Ellis, 2002; Harrington, 2001; Juffs, 2004; McLaughlin and Heredia, 1996; Myles, 1995; Pienemann, 2003, 2007).

The primary focus on the individual mind of the learner, regardless of context, also applies to a large extent to work on individual differences (IDs) between learners, for example, their level of intelligence or working memory (WM) capacity; the way in which constructs such as anxiety or motivation might be socially and culturally shaped has also played some part in this subfield (Dörnyei, 2009; Dörnyei and Skehan, 2002, 2003; Dörnyei and Ushioda, 2009, 2011; Robinson, 2002; Sawyer and Ranta, 2001; Skehan, 1989). Given this focus, cognitive SLA theorists' main focus of investigation has been the development of processing skills in L2 learners and the way in which these contribute to learning, and the role of IDs, both in terms of cognitive factors such as intelligence, WM or aptitude, and in terms of (socio-) affective factors such as motivation, anxiety, extroversion, learner beliefs, learning styles or learner strategies.

### 3.6. FACULTY PSYCHOLOGY

During the days of faculty psychology, theorists thought of the mind in much the same way a bodybuilder thinks of a muscle. The more it was exercised, the greater its capabilities and the larger its assets. The path to increased mental strength was to exercise the mind with difficult and complicated tasks. Problem solving in mathematics, translation in foreign language classes, memorization, and so on were recommended learning activities. Learning, like the medicine of the day could only be beneficial if it were bitter and difficult to swallow (Chastain, 1988, p. 43).

### 3.7. EMERGENTISM

A group of approaches to language and cognition have sought to direct efforts against UG fundamentals, among which is emergentism. O'Grady, Nakamura, and Yasuko (2008) maintain that despite the very considerable diversity of emergentist thought, there seems to be at least one central thesis to which all of its various proponents adhere: the complexity of language must be understood in terms of the interaction of simpler and more basic non-linguistic factors. These factors include features of human physiology, the nature of the perceptual mechanisms, the effect of pragmatic principles, the role of social interaction in communication, the character of the learning mechanisms, and limitations on processing capacity-but not inborn grammatical principles. So "the properties of grammatical phenomena arise from the interaction of factors that are not themselves inherently linguistic" (O'Grady, 2008, p. 1). In emergentist account of language, knowledge is not seen as rules, as Ellis (2008) maintains, nor is any distinction drawn between declarative and procedural knowledge. From emergentism point of view and in Ellis's term, "language is a complex adaptive system that comprises the interactions of many players: people who want to communicate and a world to be talked about." (Ellis, 2006, p. 107). It thus wishes to explain language in the course of development without the guidance of UG which would lead to defeating the 'poverty of stimulus' claim.

Based on a series of articles by Ellis from 1994–2006, the key principles of language learning from an emergentism point of view can be listed as follows:

1. **Learning is Based on Simple Learning Mechanisms:** Emergentism assumes relatively simple learning mechanisms and a massively complex environment. As MacWhinney (2001) puts it, linguistic behavior in a target domain emerges from



constraints derived from some related external domain like when phonological structures emerge from physiological constraints on the vocal tract. One of the grounds on which N. Ellis (1999) disputes the notion of genetically endowed language acquisition device (LAD) is the plasticity of the brain as auditory cortex, which is presumed potential site for UG, learns to see if provided with visual input during early experiences. When Visual functionality of brain is not hard-wired in the brain how can UG be; Gregg (2003) paraphrases. Thus the idea of simple learning mechanisms operating in and across systems when exposed to language data as a part of the human social environment through an organism eager to exploit the functionality of language is enough to cause the emergence of complex language representations (Ellis, 1998).

2. **Language is Exemplar-based Rather than Rule-Based:** Learning a language consists of sequences of sounds, words, and phrases, and on this ground emergentism rejects the symbolic account of language learning. Ellis (2003) argues that language is governed by an 'idiom principle' [Sinclair] which states that a language user has available to him a large number of semi-preconstructed phrases that constitute single choices, even though they might appear to be analyzed into segments; this principle illustrates the natural tendency to economy of effort and is motivated, in part, by the hard times of real conversation. N. Ellis further concludes that the data learners obtain from the input are in 'chunks.' Ellis (2008) thus paraphrases it as 'learning entails item-learning rather than rule-learning and involves building association between phonological (or orthographic) elements. In this respect, it can be said that emergentists have a constructivist view of learning. [constructivists hold that grammatical development is a process of gradually assembling knowledge about distributional and semantic-distributional relationship between words (Ellis, 1996, p. 98)].
3. **Learning a Language Involves Learning Constructions:** Ellis (2003, p. 66) defines constructions as "recurrent patterns of linguistic elements that serve some well-defined linguistic functions which may be at sentence level (such as imperative or yes-no questions) or below (like noun phrase, prepositional phrase, etc.)," and believes that if words are atoms of language function, then construction grammar provides the molecular level



of analysis. Constructions are symbolic as in addition to specifying the properties of an utterance's defining morphological, syntactic, and lexical form, a construction also specifies the semantic, pragmatic, and/or discourse functions that are associated with it. Ellis (2003) cites Goldberg's (1995) focusing on Complex Argument Structure Constructions that themselves carry meaning, independent of the particular words in the sentence. It is what makes '*Pat sneezed the napkin off the table*' sound good and provide for creativity and constructing unique utterances. As Ellis (2003) maintains, language production consists of piecing together the ready-made units appropriate for a particular situation, and comprehension relies on knowing which of these patterns to predict in these situations.

4. **Learning is a Process of Gradually Strengthening Associations between Elements:** Ellis (2006) attributes learning to usage and it holds true for letters, morphemes, syntactic patterns and all other types of constructions. It holds for the claim that learning consists of discovering the right connection strength that reflects NS's competence, from the input (Ellis, 2008). Through experience, a learner's perceptual system becomes tuned to expect constructions according to their probability of occurrence in the input. [case of won, one, Alice in won...-resting level of activation-threshold-the detector]. When a certain feature is 'primed' it needs less activation to be discovered in the input. The same is true about the strength of the mapping from form to interpretation.
5. **Processing is Carried Out in Parallel Rather than Serially:** Connectionism, which is, as Ellis (2008) thinks, the most influential *emergentist model* of SLA, originated in the notion of 'parallel processing.' Based on McClelland et al. (1986, as cited in Ellis, 2008) multiple constraints govern language processing, with semantic and syntactic factors constantly interacting without knowing which one is primary. They argue that when a word can constrain the syntactic and even identity of any other word, processing must be simultaneously on different levels [form-function mapping-e.g., a sand].
6. **Language Learning is Frequency Driven:** In considering the role of input frequency in language acquisition, what counts is not how many times a learner hears a particular form, it is how many times they encounter mappings between a form and its meaning.

O'Grady's (2003) case in point is determiner 'the' which is the most frequent English word but is mastered relatively late both in first and L2 learning.

7. **Learning is Governed by the Power Law of Practice:** This can be regarded as an extension to gradual strengthening association between elements. According to N. Ellis (2006a), the relationship between frequency of usage and activation threshold is not linear and follows a curvilinear 'power law of practice.' This law states that "the logarithm of the reaction time and the error rate for a particular task decrease linearly with the logarithm of the number of practice trials taken." (Ellis, 2008, p. 468). In other words, the amount of learning-induced from an experience of a form-function association depends upon the salience of the form and the function importance of the interpretation.
8. **Role of L1:** Any cognitive theory of interlanguage (IL) postulates that learners build mental grammars of the L2 which are perceived as dynamic and subject to rapid change. Ellis (2008) explains this dynamism in terms of a cycle involving usage, perception, and learning; 'usage' leads to change, 'change' affects perception [phonologically reduced cues are hard to perceive], 'perception' affects learning [low salience cues are difficult to learn because of their low contingency of their form-function association] and 'learning' affects usage [a basic variety of IL is low in grammatical complexity but communicatively effective; that's why contact languages learned naturalistically are simplified and lose grammatical intricacies] The IL consists of series of overlaps between the grammars and based on Corder (1976, as cited in Ellis, 2008) there will be several concurrent hypotheses which lead to a set of coexistent *approximative* systems. It defines the SLA being characterized by complexification as each grammar that the learner builds is more complex than the preceding one. Corder (1977; as cited in Ellis, 2008) believes that the starting point of the continuum is the same as in L1 acquisition and L2 knowledge goes through 'recreation' rather than 'restructuring' as the starting point is not a full L1 which is gradually replaced by L2 rules and items but a simple reduced system of the L1 which is gradually complexified. Ellis (2007) however, talks of 'learned attention to language' and some factors that explain the role of L1 in L2 learning. From his emergentism point of view associative

learning factors like blocking, overshadowing, cue competition and perceptual learning account for L2 learning associated with L1. L1 thus contributes to overshadowing and blocking by making those L2 forms that are more similar to L1 more salient. The salience some features of L2 will gain this way will prevent the learner from attending to some other features, and that's why most learners fail to achieve full target-language competence.

O'Grady (2003) distinguishes two emergentist approaches to language acquisition. Input-based emergentism and processor-based emergentism. Input-based approach offers a theory of how language learners come to identify and prioritize the various competing cues which are relevant to sentence comprehension. Among the earliest examples of input-based approach to language acquisition is MacWhinney's (1987) CM which emphasizes the presence of key variables in the input in terms of cue availability (how often the cue is present when pattern is being interpreted) and cue reliability (how often it points to a particular interpretation). A great deal of work in this approach revolves around recurring intuition, which holds that the frequency with which particular phenomena are encountered plays a key role in shaping the developmental process (O'Grady, 2003). Ellis is an advocate of this approach and believes that language learning, in essence, is 'gathering of information about the relative frequency of form-function mapping (Ellis, 2006).

The second emergentism approach is processor-based. The central thesis here is that a simple processor that is committed to reducing the burden on WM lies at the heart of human language faculty. O'Grady (2003) believes that this approach does not contradict the input-based approach but processor-based emergentism clearly stands against MacWhinney's claim that input is enough for learning a language. In a way, it empowers 'the poverty of stimulus' set forth by UG advocates. O'Grady (2003) accepts this point but states that this incompleteness of the input is different from what nativists talk about. He proposes that the gap between experience and a speaker's linguistic knowledge is bridged with the help of the processor, which directs learners to particular options that are not evident from information available in the input.

### **3.7.1. Criticism Against Emergentism**

Some linguists worry that emergentism can distract them from the hard work of linguistic description. They further argue that giving up a moderately

successful theory in the hope of something better is not a scientific option to choose. MacWhinney (2001) states that it would certainly be a mistake to abandon structured linguistic description without providing a solid mechanistic alternative and emergentism is fully committed to providing empirically testable, mechanistic descriptions:

1. **“Emergence from What?”:** MacWhinney himself posed the question and answered it in MacWhinney (2001). He believes that the use of emergentist theories depends heavily on the temporal level of the processing involved, yet it is essential to know which area the process accounts for; child language development, language processing or language change as different forces are at work for each type of emergence.
2. **Gregg’s (2003):** It is primarily interested in knowing what is wrong with UG/SLA or such nativist theories. He, then, proceeds to reject the grounds on which emergentists tend to reject UG nativism, namely vacuity, simplicity, neuroscience, and evolution arguments which are all against nativism and in favor of emergentism. [he uses the same logic emergentists use to reject innateness to reject empiricism; if adults were empiricist learners, they would not reliably arrive at certain kinds of L2 knowledge, but they do so they are not empiricist learners. Simplicity is not easy to measure and thus define, and moreover, it does not matter how many mechanisms you use to define a phenomena. It’s more important how many you need to provide the best explanation of the phenomena. This one is a straw man argument as nativists do not make unreasonable claims about hard coding of rules in neural tissue. They don’t make reasonable ones either.
3. **Emergentists:** These have to explain as to how the environment provides the necessary information, in all languages, for all learners to acquire a concept. The question is more what kind of environmental information could be instructive in the right way and how this information acts associatively. This criticism has been partly answered by MacWhinney’s CM.
4. **Gregg (2003) Emergentism:** This badly needs a ‘*property theory*’ of linguistic competence. Emergentists seemingly do not feel the need to explain. N. Ellis (2007) maintains that regularities of language are not pre-wired but emergent phenomena, and these rule-like regularities are achieved when learners unpack

the grammatical baggage in the formulaic sequences they have acquire. Thus, such rule-like behaviors which are captured by linguists are mere descriptions. He further quotes Bybee as ‘grammar is usage and usage is grammar.’ Ellis (2007) admits the systematicity in language developmental order and further admits that no one cause, be it frequency, perceptual salience or semantic complexity is sufficient to explain.

### 3.8. FUNCTIONALIST APPROACHES TO LANGUAGE

Functionalist approaches to language hold that language is primarily used for communication and does not exist without language users. Functionalism views language in terms of *form-to-function* and *function-to-form* mappings. Functional approaches to SLA investigate such mappings in IL and are especially interested in how these change over time in the developing IL system. Functionalist approaches to linguistics in general and to SLA in particular are not common in North America. A functionalist approach can take either a form-oriented approach or a concept-(or meaning-) oriented approach. A form-to-function approach would begin with a form such as the English past tense (-ed) and follow the use of the form to discover how it functions. If we took this approach in SLA to examine the acquisition of the simple past, we would likely discover that the first use of the simple past is as a marker of completion with a certain class of predicates. We would also discover a second function of indicating the main events in a story. Finally, we would observe that the morphological past takes the function of expressing past time regardless of predicate type or role in a story. These observations have been made under the auspices of the Aspect Hypothesis (Andersen, 1991; Bardovi-Harlig, 1998, 2000) and the *Discourse Hypothesis* (Bardovi-Harlig, 1995), examples of the *form-to-function* type of functional analysis (Ellis, 2013). A *function-to-form approach*, typically called the concept-oriented approach, identifies one function, concept, or meaning and investigates how it is expressed.

Functionalist theories of SLA share a number of concerns with variability theories. For instance, both are concerned not just with how linguistic knowledge is represented in the mind of the learner, but also with how this knowledge is used in discourse. Also, both types assume that syntax cannot be considered separately from semantics and pragmatics and, as such, are opposed to accounts of SLA based on a clear distinction between linguistic and pragmatic competence (for example, Gregg, 1989).

Rather than making the formal linguistic system their starting point, these researchers are centrally concerned with the ways in which L2 learners set about making meaning, and achieving their personal communicative goals. They argue that the great variety of IL forms produced by L2 learners cannot be sensibly interpreted unless we pay attention also to the speech acts that learners are seeking to perform, and to the ways they exploit the immediate social, physical, and discourse context to help them make meaning. Further, it is argued that these meaning-making efforts on the part of learners are a driving force in ongoing L2 development, which interacts with the development of formal grammatical systems. The reader should note that the term 'functional' is being used here in a different sense from the way it is used in recent Chomskyan theory. Here, we follow the definition offered by Rispoli (1999, p. 222).

Functionalism in linguistics is the explication and explanation of grammatical structure in which semantic and pragmatic constructs are integral.' The functionalist tradition is well established in SLL theory. Its fundamental claim is that *language development is driven by pragmatic communicative needs*, and that the formal resources of language are elaborated in order to express more complex patterns of meaning. In a *functionalist model*, learning a language is seen as a process of mastering a number of fundamental functions of language-spatial and temporal reference, for example-and the linguistic means for conveying them. Thus, from this perspective, L2 knowledge is comprised of a network of form-function mappings. Initially, the network is a relatively simple one but it gradually complexifies as the learner acquires new L2 forms, matches these to existing functions, and uses them to realize new functions. This functional view of IL development is closely associated with the work of Klein and Perdue. According to Klein (1991) language acquisition is functionally driven: It is functions which drive the learner to break down parts of the input and to organize them into small subsystems, which are reorganized whenever a new piece from the flood of input is added, until eventually the target system is reached (or more or less approximated). (p. 220) Perdue (1991) reported a study demonstrating how this takes place. As part of the European science foundation project on adult SLA, the study examined how two learners handled spatial and temporal reference. Initially, the learners acquired a few simple words to express 'essential' reference and relations (for example, 'up'/'above' and 'left'/'right'), they used transparent form-meaning relationships, they decomposed complex relations into simpler ones (for example, instead of between two chairs' they used circumlocutions

like ‘side of chair, side of other chair, middle’), and they relied on the inferencing capacities of their interlocutors. This was characteristic of a pre-basic variety. Some learners progress beyond this by grammaticalizing their IL but other learners do not.

Perdue and Klein (1992) reported on a study of two adult Italian learners of L2 English in London, who differed in the extent to which their ILs became ‘grammaticalized’ over time. Both learners began by producing very simple utterances, but whereas one of the learners, Andrea, proceeded to ‘*grammaticalize* his speech over a period of about 20 months (for example, by developing systematic verb morphology and case markings), the other, Santo, maintained the ‘basic variety’ throughout. Functionalist researchers such as Perdue and Klein also emphasize the importance of discourse-contextual constraints on linguistic representation and IL development. As Perdue (2000) put it, the learner has to learn how to reconcile the informational structure with the linguistic means available, and if this is not possible to acquire further means’ (pp. 301, 302). Like Klein and Perdue, Givón (1979) also saw syntax as inextricably linked to discourse—it is ‘a dependent, functionally motivated entity in the sense that its formal properties reflect its communicative uses. He distinguished two types of language, reflecting two different types of IL system. There are the loose, paratactic structures found in informal/unplanned discourse, which constitute the ‘pragmatic mode (later referred to as the ‘pre-grammatical mode’ in Givón, 1995). There are also the tight, grammaticalized’ structures found in formal/planned discourse, which constitute the ‘syntactic mode’ (later called the ‘grammatical mode’).

An example of the former is the topic-comment structure of an utterance like: Ice cream, I like it. while an example of the latter is the subject-predicate structure of an utterance like: I like ice cream. Givón argued that learners progressively syntacticize their ILs as they move from a pre-grammatical to a grammatical mode. However, they retain access to the pre-grammatical mode which they employ when the conditions are appropriate. Givón also argued that other aspects of language such as the historical evolution of languages and creolization—are also characterized by the same process of syntactization (Ellis, 2008, pp. 415–417; Mitchell and Myles, 2004, pp. 131, 132, 154).



### 3.9. THE SOCIOCULTURAL VIEW OF (LANGUAGE) LEARNING

Like the cognitive perspectives, sociocultural theorists assume that the same general learning mechanisms will apply to language, as apply to other forms of knowledge and skill. However, all learning is seen as first *social*, then *individual*; *first inter-mental*, then *intra-mental*. Also, learners are seen as active constructors of their own learning environment, which they shape through their choice of goals and operations. So, this tradition has a good deal to say about the *processes* of learning and has invested considerable empirical effort in describing these in action. Ohta in particular has developed a very full account of language learning that integrates a range of sociocultural concepts with cognitive ideas about learning processes (Ohta, 2001).

She sees *private speech* as giving rich opportunities for repetition and rehearsal of new language items, hypothesis testing, the manipulation of target structures during language play, and the private rehearsal of interactional routines prior to use. All this can be related to ideas of *automatization* and *proceduralization* of new knowledge. Similarly, she sees peer interaction and co-construction as providing learners with increased opportunities for noticing, selective attention to different aspects of target language (TL) production and increasing the capacity of WM. Her classroom data provides rich exemplification in support of these detailed claims. What counts as evidence of ‘learning’ in this tradition, however, is not uncontroversial. In much sociocultural discussion, the co-construction of new language and its immediate use in discourse is equated with learning:

Unlike the claim that comprehensible input leads to learning, we wish to suggest that what occurs in collaborative dialogs *is* learning. That is, learning does not happen outside performance; it occurs in performance. Furthermore, learning is cumulative, emergent, and ongoing (Mitchell and Myles, 2004, p. 221).

### 3.10. JOHNSON’S DIALOGICAL APPROACH

The dialogical model of SLA based on Vygotsky’s sociocultural theory (SCT) and Bakhtin’s Heteroglossia is summarized by Johnson (2004, p. 179) as follow:

- Language learning is not universal or linear but localized and dialectical.



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- Language performance and language competence cannot be separated because they are in a dialectical relationship.
  - Language is not viewed as a linguistic code but as speech embedded in a variety of local sociocultural contexts.
  - The learner is not viewed as a limited processor that cannot attend to both form and meaning at the same time. Therefore, information-gap tasks such as structured input activities or spot-the-difference-in-pictures tasks are not considered to be useful for the appropriation of new voices or for the appropriation of language viewed as speech.
  - To acquire the TL is to acquire discursive practices (speech genres) characteristic of a given sociocultural and institutional setting.
  - Discursive practices typical of a given sociocultural setting are not limited to verbal signs. They also include nonverbal signs such as gestures, facial expressions, and other semiotic signs such as graphs and maps.
  - Cognitive and L2 development are not separated in this model. They are in a dialectical relationship; one transforms the other.
  - Interaction between new voices and old voices is essential for the learner's language and cognitive development.
  - The development of L2 ability is viewed as the process of becoming an active participant in the TL culture. The participation metaphor should replace, not complement, the existing acquisition metaphor.
  - The responsibility of researchers within this new approach is to investigate the processes that lead to becoming an active participant in locally bound social contexts. Such investigation requires that qualitative research methods be acknowledged as appropriate research methods for the field of SLA.
  - New research methods need to be developed to capture the fundamental processes of the participation metaphor. These methods need to investigate L2 learners who were successful or unsuccessful in their border-crossing endeavors. The ultimate goal of this investigation is to develop a prototype of an active participant in the TL culture.

Vygotsky's and Bakhtin's theories provide a bridge between the learner's external and internal realities. They allow us to examine learning processes from a holistic perspective in which the two seemingly opposite parts of human existence, mental, and social, merge together in a dialectical relation. That is, the external world affects and transforms the individual's mental functioning, which, in turn, affects, and transforms social, cultural, and institutional settings.

From this perspective the distinction between competence and performance becomes blurred. Thus, if we were to redesign some of the communicative competence models according to Vygotsky's and Bakhtin's theories, there would not be any separation between language competence and language performance; the arrow would not lead unidirectional from the human mind (competence) to the external world (performance) but, if anything, would be reversed.

Johnson (2004) further maintains that based on this new Model of SLA language ability is locally bound: In this new model of SLA, the origin of L2 competence lies not in the LAD or any other mechanism, such as Bley-Vroman's (1989) general problem-solving system, but in social reality—in language use. This language use does not take place in a vacuum or in an imaginary social context but in a real and discernible social context. Social contexts create language, and language creates social contexts: one constitutes the other. These contexts are *not* universal. They are highly localized, and therefore language ability is also locally bound: it reflects all the characteristics of a well-defined sociocultural and institutional context. L2 ability is not situated in the learner's mind but in a multitude of sociocultural and institutional settings and in a variety of discursive practices to which the learner has been exposed throughout his or her life.

According to Johnson (2004) applying Vygotsky's SCT to SLA theory and research necessitates abandoning theories which believe in the existence of a general language ability. It also obviates with the idea that SLA develops through a predetermined mental path that cannot be altered no matter how much the learners have been exposed to the TL in naturalistic or instruction-only context (Johnson, 2004).

## CHAPTER 4

# THEORIES IN SECOND LANGUAGE ACQUISITION

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## 4.1. THE INTERFACE POSITION

The interface issue concerns the relationship between explicit and implicit L2 knowledge:

1. **The Non-Interface Position:** This is the position promulgated by Krashen (1981), who views explicit and implicit knowledge as entirely distinct and thus dismisses the possibility of the former transforming into the latter. ‘Learning,’ a conscious, intentional process, results in explicit knowledge; ‘acquisition,’ an unconscious, incidental process results in implicit knowledge. Krashen acknowledges only a limited role for explicit instruction to help learners “earn” a few simple grammatical rules that they can then use to monitor their production when they are focused on form and have time to do so. In effect, the non-interface position rejects any major role for explicit grammar instruction in second language acquisition (SLA).
2. **The Strong Interface Position:** This claims that acquisition (especially by adult learners) commences with explicit, declarative knowledge, which is then transformed into implicit knowledge *through practice* (DeKeyser, 1998). This position draws on skill-acquisition theory. It constitutes the primary theoretical justification for PPP as it claims that explicit instruction can “bridge” the gap between explicit and implicit knowledge. It should be noted, however, that DeKeyser sees little merit in controlled practice activities. He argued that learners need to use their explicit knowledge as a ‘crutch’ while struggling to use the target structure in communication.
3. **The Weak Interface Position:** This makes two claims. The first is that explicit knowledge evolves into implicit knowledge but only if the learner is ready to acquire the targeted feature. The second is that even if this does not occur immediately, explicit knowledge can facilitate cognitive processes such as *noticing* and *noticing-the-gap* (Schmidt, 1990) and so facilitate the long-term development of implicit knowledge. Ellis (1993) has drawn on the weak interface position to argue that explicit instruction should be restricted to helping learners form explicit knowledge and left it to the learner to use this knowledge to assist subsequent development of implicit knowledge. According to the weak interface position, then, PPP will only be effective if it is timed to coincide with the learners’ *readiness* to acquire the target structure, which is impractical in most teaching contexts. It supports the use of consciousness-raising (C-R) and interpretation tasks, deployed without any supporting practice activi-

ties, to assist learners to develop explicit knowledge of target features and notice them in the input. These different positions support radically different views about explicit language instruction. The non-interface position proposes that explicit instruction is of little value. The strong interface position supports the view dominant in language pedagogy, namely that a grammatical structure should be first presented explicitly and then practiced until it can be used accurately in free production. The underlying assumption of a *grammatical syllabus* aimed at implicit knowledge is that a strong interface is possible. The weak interface position supports an approach based on teaching explicit knowledge to assist learners to attend to grammatical input and thus facilitate the acquisition of implicit knowledge over time.

In brief, with regard to whether learning will lead to or help acquisition or not, there are three positions:

1. **The Non-Interface Hypothesis:** Krashen (1981) remarks learning that cannot contribute to acquisition.
2. **The Strong Interface Hypothesis:** This hypothesis is based on the idea that explicit knowledge becomes implicit through proceduralization. Hence, he believes that all learned knowledge becomes acquired knowledge after enough staying with the knowledge or practice.
3. **The Weak Hypothesis:** Explicit knowledge “*might*” promote the development of implicit knowledge since it plays the role of a facilitator of intake by providing the ability to *notice* details in the input (Celce-Murcia et al., 2014, pp. 36, 37; Ellis, 2008, pp. 421, 422; Gass and Selinker, 2008, p. 453).

## 4.2. BIALYSTOK’S THEORY OF L2 LEARNING

Bialystok’s (1978) Theory of L2 Learning was based on the distinction between implicit and explicit knowledge but allows for an interface between explicit and implicit knowledge. Bialystok proposed that implicit knowledge is developed through exposure to communicative language use and is facilitated by the strategy of functional practicing (attempts by the learner to maximize exposure to language through communication). In contrast, explicit knowledge arises when learners focus on the language code, and is facilitated by ‘formal practicing,’ which involves either conscious study of the L2 or attempts to automatize already learnt explicit knowledge. There

is an interaction between the two types of knowledge. Formal practicing enables explicit knowledge to become implicit, while inferencing allows explicit knowledge to be derived from implicit. The model also distinguishes two types of output. Type I output is 'spontaneous and immediate,' while Type II is 'deliberate and occurs after a delay' (Bialystok, 1978, p. 74). As might be expected, *Type I* relies entirely on implicit knowledge, whereas *Type II* involves both implicit and explicit. A feedback loop from both types allows for continual modification of a response. Thus, Bialystok's theory is premised on an interface between the two types of knowledge. Whereas Krashen's position has remained more or less immutable over the years, Bialystok's has undergone considerable revision (Bialystok, 1981, 1982, 1990, 1991; Hulstijn, 1990). The development that concerns us most here is her reconceptualization of L2 knowledge. In the early model, this was represented as a dichotomy-knowledge was either implicit or explicit-but in subsequent formulations, it is represented in terms of two intersecting continua reflecting the extent to which rules and items are controlled or analyzed. Again, Bialystok's definition of 'control' has shifted somewhat. Whereas initially it concerned the ease and rapidity with which knowledge can be accessed in differing types of language use, in later formulations (for example, Bialystok and Ryan, 1985) it refers to three different functions: the selection of items of knowledge, their coordination, and the extent to which selection and coordination can be carried out automatically. By 'analysis,' Bialystok refers to the extent to which the learner has abstracted an account of some linguistic phenomenon:

Analysis of knowledge is the process by which mental representations of this knowledge are built up, structured, and made explicit for the learner. (Bialystok, 1991, p. 65).

One way in which this can take place is by analyzing formulas (i.e., discovering the parts that make them up). It is tempting to see this 'analysis' dimension as equivalent to the explicit/implicit distinction, with analyzed knowledge corresponding to explicit knowledge and unanalyzed to implicit. Bialystok, in fact, did equate analysis with the development of an explicit representation of knowledge, but she emphasized that analyzed knowledge need not involve consciousness. As she put it, 'a criterion of consciousness seriously underestimates the level of analysis with which linguistic knowledge is represented (Ellis, 2008, pp. 421, 422; Gass and Selinker, 2008, p. 453).

### **4.3. SKILL ACQUISITION THEORY (MOST CLOSELY ASSOCIATED WITH ROBERT DEKEYSER)**

Skill acquisition theory (a derivative of adaptive control of thought (ACT)) is a theory in cognitive psychology centered on three stages of development: cognitive (or declarative), associative (or procedural), and autonomous (or automatic). The three stages are distinguished by major differences in the nature of knowledge, usage, and behavior. Learners can gain some declarative knowledge (“knowledge that”) through observation or analysis without being required to use any skill at the initial learning stage. The second stage is when the learning is visible as behavior or procedural knowledge (“knowledge how”). Thus, declarative knowledge is transformed into procedural knowledge. This proceduralization of knowledge is not particularly difficult or time consuming, providing that the relevant declarative knowledge is available to the learner. This is achieved by engaging in the target behavior while relying on declarative knowledge (paying attention to something while practicing). Once the procedural knowledge has been realized, continued practice reinforces the skill. This practice is called automatization. As a general rule, the more the learner practices the skill, the more automatic the skill becomes. Another important concept of Skill Acquisition Theory is the role of explicit or implicit learning in acquiring rules. This is very much dependent on the complexity of the rule. Simple rules can be learned explicitly, while more ‘complex’ ones may be better acquired implicitly. According to Skill Acquisition Theory, the gradual automatizing of a rule essentially means that a rule becomes implicitly acquired. Therefore, practice leading to automatization is not always at odds with implicit learning. Also important to the theory is the idea of appropriate practice. That is, for someone to get control over a skill and automate a behavior that person must engage in the very skill he or she wishes to acquire. One does not learn to cook by eating. One learns to cook by actually cooking over and over again. Applied to the second language (L2) context, the implications should be clear. Learners first learn “rules” about language explicitly. They have declarative knowledge about language. Learners must engage in appropriate practice. For example, if a skill they wish to acquire is speaking, then learners must engage in speaking (not rote practice, not repetition, not classic “drills”). Practice for speaking, then, would mean events in which learners are attempting to communicate information. The process is slow, but as learners engage more and more in such appropriate practice, the skill becomes fine-tuned and more and more automatic. That is, the learner becomes more fluent with the language and



more error free (VanPatten and Benati, 2015, pp. 81–84; VanPatten and Williams, 2015, pp. 113–134).

#### 4.4. PIENEMANN'S PROCESSABILITY THEORY (PT)

PT (e.g., Pienemann, 1998) is a theory of L2 development. The logic underlying PT is the following: *At any stage of development, the learner can produce and comprehend only those L2 linguistic forms which the current state of the language processor can handle.* It is therefore crucial to understand the architecture of the language processor and the way in which it handles an L2. This enables one to predict the course of development of L2 linguistic forms in language production and comprehension across languages. The architecture of the language processor accounts for language processing in real-time and within human psychological constraints such as word access and working memory (WM). The incorporation of the language processor in the study of SLA therefore brings to bear a set of human psychological constraints that are crucial for the processing of languages. The view on language production followed in PT is largely that described by Levelt (1989), which overlaps to some extent with the computational model of Kempen and Hoenkamp (1987) and Merrill Garrett's work (e.g., Garrett, 1976, 1980, 1982). The basic premises of that view are the following:

- Processing components operate largely automatically and are generally not consciously controlled (i.e., the speaker does not need to be aware of the grammatical structures he/she produces).
- Processing is incremental (i.e., the speaker can start producing an utterance without having planned all of it).
- The output of the processor is linear, although it may not be mapped onto the underlying meaning in a linear way (for instance, the idea produced first does not need to occur first in natural events, e.g., 'Before I drove off, I started the engine').
- Grammatical processing has access to a temporary memory store that can hold grammatical information (e.g., in the sentence 'The little kid loves ice cream,' the grammatical information "singular, third-person" present in 'the little kid' is retained in grammatical memory and it is used when the verb 'loves' is produced, which is marked for third person).

In his processability theory (PT), Pienemann has relied on the principle of perceptual saliency, a widely used concept in cognitive psychology. The

feature of perceptual saliency that Pienemann resorts to in the explanation of the stages of his theory is that the beginning and end of stimuli are easier to remember and therefore to manipulate. This means that learners will first be able to move elements from inside to outside the sentence, that is, to sentence-initial or sentence-final positions, then from outside to inside before being able to move elements within the sentence (Mitchell and Myles, 2004, pp. 115–117).

## 4.5. INPUT PROCESSING (IP)

IP is concerned with explaining (a) under what conditions learners make initial form-meaning connections (b) why learners make some form-meaning connections and not others, and (c) what internal strategies learners use to comprehend sentences (VanPatten, 2007). To explain these three conditions, VanPatten has outlined several principles that L2 learners use when processing input. Table 4.1 presents these principles in their most recent form (VanPatten, 2007).

**Table 4.1.** VanPatten's Principles of Input Processing

SL. No.	Principles	Description
1.	The primacy of content words	Learners process content words in the input before anything else.
2.	The lexical preference	Learners will process lexical items for meaning before grammatical forms when both encode the same semantic information.
3.	The preference for non-redundancy	Learners are more likely to process non-redundant meaningful grammatical markers before they process redundant meaningful markers.
4.	The meaning before non-meaning	Learners are more likely to process meaningful grammatical markers before non-meaningful grammatical markers.
5.	The first noun	Learners tend to process the first noun or pronoun they encounter in a sentence as the subject.
6.	The L1 transfer	Learners begin acquisition with L1 parsing procedures.

7.	The event probability	Learners may rely on event probabilities, where possible, instead of the first noun principle to interpret sentences.
8.	The lexical semantics	Learners may rely on lexical semantics, where possible, instead of the first noun principle (or an L1 parsing procedure) to interpret sentences.
9.	The contextual constraint	Learners may rely less on the first noun principle (or L1 transfer) if preceding context constrains the possible interpretation of a clause or sentence.
10.	The sentence location	Learners tend to process items in sentence-initial position before those in final position and those in medial position.

## 4.6. SOCIOCULTURAL THEORY (SCT)

Lev Semeonovich Vygotsky was born in 1896, the same year as the Swiss developmental psychologist, Jean Piaget. Born in the Russian provinces, Vygotsky was active in Moscow between 1925 and his early death in 1934. Like Piaget, he was a researcher and theorist of child development; however, his work fell into disfavor within Soviet psychology, and the first of his many writings to be translated into English, *Thought*, and *Language*, appeared only in 1962. Since that time his views on child development have become increasingly influential, having been taken up and promoted by psychologists and child development theorists such as Jerome Bruner (1985), James Wertsch (1985, 1998) and Barbara Rogoff (1990, 1995), and applied in classroom studies by many educational researchers (Mercer, 1995, 2000; Wells, 1999). Parts of his wide-ranging writings remain untranslated, and contemporary interpretations and modifications to Vygotsky's original ideas mean that current sociocultural theory is best described as 'neo-Vygotskyan.' Here, we will outline a number of key ideas current in contemporary interpretations or discussions of Vygotsky, which have recently been taken up by SLL theorists.

SCT is associated with the work of Vygotsky, whose goal was to overcome what at the time he characterized as a "crisis in psychology." This crisis arose because of the diversity of perspectives and objects of study, all of which were grouped under the general rubric of psychology. At that time, various approaches to the study of psychological processes were grouped into two broad categories: one followed a natural science approach to research

and sought out causes of psychological processes; the second followed the humanistic tradition and emphasized the description and understanding of mental activity. The causal natural science branch of psychology focused its research on the study of elementary, or biologically endowed, mental processes, that is, those processes that humans shared with other species, especially primates. These processes were largely automatic and included involuntary memory and attention, and reflex reactions to external stimuli. The descriptive branch focused its concern on what Vygotsky called higher (mental) processes such as problem-solving, voluntary memory and attention, rational thought, planning, and meaning making activity (Wertsch, 1985; Barjesteh and Jafari, 2016).

#### **4.6.1. Mediation and Mediated Learning**

In a recent formulation, Lantolf explains that: The central and distinguishing concept of sociocultural theory (SCT) is that higher forms of human mental activity are *mediated*. Vygotsky (1987) argued that just as humans do not act directly on the physical world but rely, instead, on tools and labor activity, we also use symbolic tools, or signs, to mediate and regulate our relationships with others and with ourselves. Physical and symbolic tools are artifacts created by human culture (s) over time and are made available to succeeding generations, which often modify these artifacts before passing them on to future generations. Included among symbolic tools are numbers and arithmetic systems, music, art, and above all, language. As with physical tools, humans use symbolic artifacts to establish an indirect, or mediated, relationship between ourselves and the world. The task for psychology, in Vygotsky's view, is to understand how human social and mental activity is organized through culturally constructed artifacts and social relationships. (Lantolf, 2000, p. 80).

This quotation clearly shows the sociocultural belief in *the centrality of language as a 'tool for thought,' or a means of mediation, in mental activity*. Through language, for example, we can direct our own attention (or that of others) to significant features in the environment, rehearse information to be learnt, formulate a plan or articulate the steps to be taken in solving a problem. In turn, it is claimed that the nature of our available mental tools can itself shape our thinking to some extent. For example, David Olson (1995) has argued that once writing systems were invented, these 'mental tools' changed our understanding of the nature of language itself, because they provided humanity with concepts and categories for thinking about language, such as the 'word' the 'sentence,' or the 'phoneme,' which did not

exist before the development of literacy. Similarly, Lantolf (2000) quotes studies by Warschauer (1997) and Thome (2000), which show how new forms of computer-mediated communication, such as the use of chat rooms or text messaging, have new and distinctive characteristics different from those of traditional written communication, and shaped by the technology itself. From the sociocultural point of view, learning is also a mediated process. It is mediated partly through learners' developing use and control of mental tools (and once again, language is the central tool for learning, though other semiotic modes of representation play a role (Wells, 1999, pp. 319, 20). Importantly, learning is also seen as socially mediated, that is to say, it is dependent on face-to-face interaction and shared processes, such as joint problem solving and discussion. In SCT, the social portion of the title acknowledges the social origins of much human thought and action; the cognitive portion recognizes the influential contribution of cognitive processes to human motivation, affect, and action (Barjesteh and Harareh, 2016).

#### **4.7. REGULATION, SCAFFOLDING, AND THE ZONE OF PROXIMAL DEVELOPMENT**

The mature, skilled individual is capable of autonomous functioning, that is, of self-regulation. However, the child or the unskilled individual learns by carrying out tasks and activities under the guidance of other more skilled individuals (such as caregivers or teachers), initially through a process of other-regulation, typically mediated through language. That is, the child or the learner is inducted into a shared understanding of how to do things through collaborative talk, until eventually they take over (or appropriate) new knowledge or skills into their own individual consciousness. So, successful learning involves a shift from collaborative inter-mental activity to autonomous intra-mental activity. The process of supportive dialog which directs the attention of the learner to key features of the environment, and which prompts them through successive steps of a problem, has come to be known as scaffolding (Wood, Bruner, Ross, 2006).

The domain where learning can most productively take place is christened the Zone of Proximal Development, that is, the domain of knowledge or skill where the learner is not yet capable of independent functioning, but can achieve the desired outcome given relevant scaffolded help. The Zone of Proximal Development was defined by Vygotsky as: the difference between the child's developmental level as determined by independent problem

solving and the higher level of potential development as determined through problem solving under adult guidance or in collaboration with more capable peers. (Vygotsky, 1978, p. 85).

The metaphor of scaffolding has been developed in neo-Vygotskian discussions to capture the qualities of the type of other-regulation within the Zone of Proximal Development which is supposedly most helpful for the learning or appropriation of new concepts. According to Wood *et al.* (1976), scaffolded help has the following functions:

- Recruiting interest in the task;
- Simplifying the task;
- Maintaining pursuit of the goal;
- Marking critical features and discrepancies between what has been produced, and the ideal solution;
- Controlling frustration during problem solving;
- Demonstrating an idealized version of the act to be performed.

As Donato (1994, p. 41) puts it, ‘scaffolded performance is a dialogically constituted interpsychological mechanism that promotes the novice’s internalization of knowledge co-constructed in shared activity.’

## **4.8. MICROGENESIS**

For Vygotsky, the general principles of sociocultural learning theory apply to a range of different timescales. Mitchell and Myles (1998) describe microgenesis as ‘a local, contextualized learning process that can sometimes be traced visibly in the course of talk between expert and novice.’ (p. 198) This local, contextualized learning process is labeled microgenesis; it is central to sociocultural accounts of SLL. Ganem Gutierrez (2008) points out that microgenesis refers simultaneously to both the method and the object of study and she emphasizes that ‘this conceptual duality makes microgenetic analysis a fruitful method to investigate learning (microgenesis) as it unfolds during interaction’ (p. 2).

## **4.9. PRIVATE AND INNER SPEECH**

Young children are well known to engage in private speech, talk apparently to and for themselves rather than for any external conversational partners. From the point of view of classic Piagetian theory of child development, this talk has been interpreted as evidence of children’s egocentrism, or inability

to view the world from another's point of view. However, private speech is interpreted very differently in sociocultural theory. Here, it is seen as evidence of children's growing ability to regulate their own behavior-when, for example, a child talks to himself while painting a picture, or solving a puzzle. For Vygotsky, private speech eventually becomes inner speech, a use of language to regulate internal thought, without any external articulation. Thus, private speech reflects an advance on the earliest uses of language, which are social and interpersonal. The fully autonomous individual has developed inner speech as a tool of thought, and normally feels no further need to articulate external private speech. However, when tackling a new task, even skilled adults may accompany and regulate their efforts with a private monolog.

#### 4.10. ACTIVITY THEORY

The last important idea that we need to consider is that of *activity theory*, primarily developed by one of Vygotsky's successors, Leontiev (Leontiev, 1981; Lantolf and Appel, 1994; Zinchenko, 1995). Sociocultural theorists are keen to study and make sense of both individual and collaborative behavior and motivation within its sociocultural setting. Activity theory thus comprises a series of proposals for conceptualizing the social context within which individual learning takes place. A helpful account is offered by Donato and McCormick: Activity is defined in terms of sociocultural settings in which collaborative interaction, inter-subjectivity, and assisted performance occur. In his analysis, Leontiev conceived activity as containing a subject, an object, actions, and operations. To illustrate these constituents of activity we use the classroom as an example. A student (a subject) is engaged in an activity, for example, learning a new language. An object, in the sense of a goal, is held by the student and motivates his or her activity, giving it a specific direction. In the case of our language learner, the object could range from full participation in a new culture to receiving a passing grade required for graduation. To achieve the objective, actions are taken by the student, and these actions are always goal-directed. Different actions or strategies may be taken to achieve the same goal, such as guessing meaning from context, reading foreign-language newspapers, or using a bilingual dictionary to improve reading comprehension. Finally, the operational level of activity is the way an action is carried out and depends on the conditions under which actions are executed. For example, how one attends to driving a car depends in large part on the context of the activity (e.g., weather



conditions, purpose of trip, type of vehicle, etc.). These operational aspects of actions can become routinized and automatic once the conscious goal is no longer attended to.

Returning to our example of the language learner, if the goal of the learner was to become proficient in deriving meaning from context rather than from the bilingual dictionary, contextual guessing during reading becomes automatized once the learner becomes adept at this strategy ... The model of human activity depicted in activity theory is not static, however. Routinized operations (automatic strategies) can become conscious goal-directed actions if the conditions under which they are carried out change. In the case of our L2 reader who has operationalized at the unconscious level the strategy of contextual guessing, it is quite conceivable that this strategy will be reactivated at the conscious level if the learner is confronted with a difficult passage beyond his or her strategic ability, i.e., if the conditions of strategy use change (Donato and McCormick, 1994, p. 455). What we see in such formulations are proposals for a research methodology that sees all human actions (and 'mediated action' in particular) as configurations of influences, both social and individual, within a dynamic system (Wertsch, 1995, p. 63). It is these dynamic systems that must be investigated holistically, rather than their discrete parts.

Lantolf (2000, p. 8) describes activity theory as a unified account of Vygotsky's original proposals on the nature and development of human behavior. According to Leontiev (1978), people possess motives that determine how they respond to a particular task. Motives can be biologically determined, for example, the need to satisfy hunger, or, more importantly from our perspective here, socially constructed, for example, the need to learn an L2. The learners' motives determine how they construe a given situation. Thus people with different motives will perform the same task in different ways. Therefore, motives are both individually and socioculturally determined. Activity theory distinguishes three dimensions or levels of cognition motives, goals, and operations. Lantolf and Appel (1994, pp. 21, 22) distinguish these as follows.

The level of motive answers why something is done, the level of goal answers what is done, and the level of operations answers how it is done. The link between socioculturally defined motives and concrete operations is provided by semiotic systems, of which language is the most powerful and pervasive.



As Lantolf (2000) emphasizes, activities are differentiated in terms of motives. Furthermore, activity theory recognizes that changing social conditions can result in individuals realigning their motives and, perhaps, the operations they employ to achieve them. Thus, we can anticipate that learners might view a task as a game on one occasion and as work on another, depending on how they approach the task at different times. One of the implications of this is that researchers need to ascertain what motives learners bring to a task if they are to understand the interactions that occur when the task is performed. In this respect, much of the task-based research that has taken place to date is seriously at fault (Ellis, 2003, pp. 183, 184; Mitchell, Myles, and Marsden, 2013, pp. 226, 227).

#### **4.11. WHAT COUNTS AS EVIDENCE?**

Sociocultural research is grounded in the genetic method, an approach to scientific research proposed by Vygotsky in which the development of individuals, groups, and processes is traced over time. Consequently, single snapshots of learner performance are not assumed to constitute adequate evidence of development. Evidence must have a historical perspective. This is not necessarily an argument for the exclusive use of long-term longitudinal studies. While development surely occurs over the course of months, years, or even the entire life span of an individual or group, it may also occur over relatively short periods of time, where learning takes place during a single interaction between, for example, a parent and child or tutor and student. Moreover, development arises in the dialogic interaction among individuals (this includes the self-talk that people engage in when they are trying to bootstrap themselves through difficult activities such as learning another language) as they collaborate in zone of proximal distance (ZPD) activity (Swain et al., 2009).

Evidence of development from this perspective is not limited to the actual linguistic performance of learners. On the face of it, this performance in itself might not change very much from one time to another. What may change, however, is the frequency and quality of mediation needed by a particular learner to perform appropriately in the new language. On one occasion a learner may respond only to explicit mediation from a teacher or peer to produce a specific feature of the L2 and on a later occasion (later in the same interaction or in a future interaction) the individual may only need a subtle hint to be able to produce the feature. Thus, while nothing has ostensibly changed in the learner's actual performance, development

has taken place, because the quality of mediation needed to prompt the performance has changed. Development within the ZPD is not just about performance per se; it is also about where the locus of control for that performance resides—in someone else or in learners themselves. As learners assume greater responsibility for appropriate performances of the L2, they can be said to have developed, even when they exhibit little in the way of improvement in their overt performance. This means that evidence of development can be observed at two distinct levels: overt independent performance and at the level where performance is mediated by someone else. This second type of evidence will go undetected unless we keep in mind that development in the ZPD is understood as the difference between what an individual can do independently and what he or she is able to do with mediation, including changes in mediation over time. Finally, because SCT construes language as a cultural tool used to carry out concrete goal directed activities, tasks such as traditional language tests designed to elicit displays of a learner's linguistic knowledge offer only limited evidence of development. In sum, evidence of development in a new language is taken to be changes in control over the new language as a means of regulating the behavior of the self and of others in carrying out goal-directed activity.

## 4.12. COMMON MISCONCEPTIONS ABOUT SCT

Because of space limitations, we will focus only on misconceptions that relate to the ZPD, easily the most widely used and yet least understood of the central concepts of SCT (Chaiklin, 2003). There are two general misconceptions about the ZPD. The first is that the *ZPD is equivalent to scaffolding* (or assisted performance) and the second is that it is *similar to Krashen's notion of  $i + 1$*  (e.g., Krashen, 1982). Both assumptions are inaccurate. Scaffolding, a term popularized by Jerome Bruner and his colleagues nearly four decades ago (Wood, Bruner, and Ross, 1976), refers to any type of adult-child (expert-novice) assisted performance. Scaffolding, unlike the ZPD, is thought of in terms of the amount of assistance provided by the expert to the novice rather than in terms of the quality, and changes in the quality, of mediation that is negotiated between expert and novice (Stetsenko, 1999). With regard to misconceptions about equivalences between ZPD and Krashen's  $i + 1$ , the fundamental problem is that the ZPD focuses on the nature of the concrete dialogic relationship between expert and novice and its goal of moving the novice toward greater self-regulation through the new language. Krashen's concept focuses on language and the language acquisition device (LAD),

which is assumed to be the same for all learners with very little room for differential development (e.g., Dunn, and Lantolf, 1998; Thorne, 2000). Krashen's hypothesis claims that language develops as a result of learners comprehending input that contains features of the new language that are "slightly" beyond their current developmental level. As researchers have pointed out, there is no way of determining precisely the  $i + 1$  of any given learner in advance of development. It can only be assumed after the fact. In terms of the ZPD, development can be predicted in advance for any given learner on the basis of his or her responsiveness to mediation. This is what it means to say that what an individual is capable of with mediation at one point in time, he or she will be able to do without mediation at a future point in time. Moreover, as we mentioned in our discussion of the ZPD, development is not merely a function of shifts in linguistic performance, as in the case of Krashen's model, but is also determined by the type of, and changes in, mediation negotiated between expert and novice. This principle is illustrated in the study described in the following section (VanPatten and Williams, 2015, pp. 207–226).

### **4.13. INTEGRATED MODEL OF SLA: INFORMATION PROCESSING MODEL OF SLA**

Gass and Selinker (2008) have proposed an integrated model of SLA which considers what a learner must do to convert input to output. There are five stages in this process:

- Apperceived input;
- Comprehended input;
- Intake;
- Integration; and
- Output.

#### **4.13.1. Apperceived Input**

The first point to note is that learners are exposed to a body of L2 data. This is known as input. A well-established fact about SLA is that not everything that learners hear/read is used as they form their L2 grammars. Some language data filter through to learners and some do not. A concern in SLA research has been with the limits on what filters through to learners and what determines those limits. The first stage of input utilization is called apperceived input. Apperception is the process of understanding by which newly observed

qualities of an object are related to past experiences. In other words, past experiences relate to the selection of what might be called *noticed* material. Apperception is an internal cognitive act, identifying a linguistic form as being related to some prior knowledge. We can think of apperception as a *priming device* that tells us which parameters to attend to in analyzing L2 data. That is, it is a priming device that prepares the input for further analysis. What is noticed, or apperceived, then interacts with a parsing mechanism that attempts to segment the stream of speech into meaningful units for the learner. Thus, apperceived input is that bit of language that is noticed in some way by the learner because of some particular features. Why are some aspects of language noticed by a learner, whereas others are not? What are the mediating factors at this initial stage? Put differently, what factors serve as input filters? An obvious factor is *frequency*—possibly at both extremes. Something which is very frequent in the input is likely to be noticed. On the other hand, particularly at more advanced stages of learning, stages at which expectations of language data are well established, something that is unusual because of its *infrequency* may stand out for a learner.

A second factor that influences apperception is what has been described as *affect*. Within this category are included such factors as social distance, status, motivation, and attitude. This is exemplified by the work of Krashen, who proposed that individuals have what he called an Affective Filter. Another explanation has been put forth by Schumann, who argued that social distance is important in preventing a learner from obtaining input data. If a learner feels psychologically or socially distant from the target language (TL) community, the language input will not be available to that learner. This may be the case because a learner physically removes herself or himself from speakers of the TL.

A third factor that may determine whether language data are apperceived has to do with the broad category of associations and *prior knowledge*. Learning involves the integration of new knowledge with prior knowledge. Importantly, one needs some sort of anchor on which to ground new knowledge. Prior knowledge is one of the factors that determine whether the input is meaningful. Prior knowledge is to be interpreted broadly and can include knowledge of the native language (NL), knowledge of other languages, existing knowledge of the L2, world knowledge, language universals, and so forth. A final factor to mention is that of *attention*. At a given point in time, does a learner attend to the input? One can think of many reasons why the input is not attended to. Many of these are trivial and don't concern SLA (e.g., falling asleep in class); others are not trivial (e.g.,

an *a priori* realization that the input is not manageable, or task demands that make multiple foci of attention difficult or impossible). Why is attention important? It is important because it allows a learner to notice a mismatch between what he or she knows about the L2 and what is produced by speakers of the L2. If one is going to make modifications in one's grammar, one must first recognize that changes need to be made. Thus, readjustment of one's grammar is triggered by the perception of a mismatch.

### 4.13.2. Comprehended Input

The factors mentioned thus far contribute to the potentiality of comprehension of the input. But there is another point to consider: the concept of comprehended input. There are two differences between the notion of comprehended input and that of comprehensible input. One is that comprehensible input is controlled by the person providing input, generally (but not necessarily) a native speaker (NS) of the L2, whereas comprehended input is learner controlled; that is, it is the learner who is or who is not doing the "work" to understand. This distinction is crucial in the eventual relationship to intake, because it is the learner who ultimately controls that intake. A second difference is that comprehensible input, in Krashen's sense, is treated as a dichotomous variable; that is, it is either comprehensible or it is not. But there are different levels of comprehension that can take place. The most typical meaning of *comprehension* is at the level of semantics. However, there is a broader sense of the word, one that includes comprehension of structure as well as meaning. Comprehension represents a continuum of possibilities ranging from semantics to detailed structural analyzes. In other words, comprehended input is potentially multi-staged. There are a number of means by which one can reach a particular analysis. For example, the most common way of getting at a syntactic analysis is by first having an understanding of the meaning. However, one can also imagine having an understanding of the syntax yet not being able to arrive at a meaning. This would be so in the case of idioms, for example, or a proverb. What is the difference between apperceived and comprehended input? Apperception is conceptualized as a priming device. It prepares the learner for the possibility of subsequent analysis. For example, in learning a language with contrastive vowel length, a learner might apperceive that vowel length is an important feature of the language. In comprehending, however, the task facing the learner is to analyze the input in order to determine what the vowel length is in some particular context and then to relate the particular vowel length to a specific meaning. There is another necessary separation

of components—that of comprehended input from intake. This separation is important because not all input that is comprehended becomes intake. For example, input may be comprehended only for the immediate purpose of a conversational interaction, or it may be used for purposes of learning. One factor that determines whether a particular instance of comprehended input will result in intake is the level of analysis of the input a learner achieves. For example, an analysis at the level of meaning is not as useful for intake as an analysis made at the level of syntax. This proposal is supported by Færch and Kasper (1986), who, in the context of foreign language teaching, argued that one way of improving formal correctness is to provide learners with tasks designed to promote recognition of formal features rather than overall comprehension of meaning. A second factor is the time factor. Pressures of conversational interaction may preclude sufficient analysis for the purposes of intake. In this case, the input (even though comprehended) may have no further role in acquisition. What will determine whether the L2 is comprehended? Prior linguistic knowledge (e.g., knowledge of the NL, of the TL, language universals, knowledge of other languages). These same factors are important in the determination of apperception as well. This is not surprising because linguistic knowledge is in some ways cumulative. One needs a place to attach new information and one needs some basis for the analysis (i.e., comprehension) of new information. Comprehension cannot take place in a vacuum. Prior knowledge forms the basis for comprehension (in either a narrow or broad sense).

### **4.13.3. Intake**

Intake is the process of assimilating linguistic material. Intake refers to the mental activity that mediates between input and grammars and is different from apperception or comprehension, as the latter two do not necessarily lead to grammar formation. This, of course, suggests that intake is not merely a subset of input. Rather, input and intake refer to two fundamentally different phenomena. What mediates between what has been comprehended and what is eventually important for intake? We have already mentioned that the quality of analysis (i.e., comprehended input) is an important factor. Clearly, knowledge of the L1 and the L2 is also significant. Additionally, whether a particular feature is part of UG (representing something innate) or is part of a universal typological feature will also bear upon eventual intake. These factors are not to be understood as being necessarily independent. Features that are part of universal knowledge and/or present in the NL (or other languages known) are most likely to be candidates for a deeper

analysis and hence candidates for intake. How can we describe the intake component? It is that component where psycholinguistic processing takes place.

That is, it is where incoming information is matched up against prior knowledge and where, in general, processing takes place against the backdrop of the existing internalized grammatical rules. It is where generalizations and so-called overgeneralizations are likely to occur; it is where memory traces are formed; and finally, it is the component from which fossilization stems. Fossilization results when new (correct) input fails to have an impact on the learner's non-target-like grammar. That is, the correct input is not apperceived or is not comprehended, and thus it is not further processed. Some of the major processes that take place in the intake component are hypothesis formation, hypothesis testing, hypothesis rejection, hypothesis modification, and hypothesis confirmation. Hypothesis formation takes place with the addition of new information.

#### 4.13.4. Integration

After there is language intake, there are at least two possible outcomes, both of which are a form of *integration*: the development *per se* of one's L2 grammar and storage. The distinction made here is between integration and non-integration of new linguistic information. Let's consider how this relates to input. There are essentially four possibilities for dealing with input. The first two take place in the intake component and result in integration, the third takes place in the integration component, and the fourth represents input that exits the system early on in the process.

1. **Hypothesis Confirmation/Rejection (Intake):** This first possibility for input is useful as part of the confirmation or rejection of a current hypothesis. This results in integration.
2. **Apparent Nonuse:** Apparent nonuse stems from the fact that the information contained in the input is already incorporated into a learner's grammar. However, the fact that the information is already incorporated into a grammar does not necessarily exclude it from being utilized—but in a different way than what one normally thinks of. When the information contained in the input is already a part of one's knowledge base, the additional input might be used for *rule strengthening* or hypothesis reconfirmation. Part of becoming a fluent speaker of a L2 involves the automatic retrieval of information from one's knowledge base. The knowledge base



is developed through practice or repeated exposures to exemplars. Thus, information that may appear to be redundant may in fact be serving an important purpose in terms of the access a learner has to that information.

3. **Storage:** The third possibility is that input is put into storage, perhaps because some level of understanding has taken place, yet it is not clear how integration into a learner's grammar can or should take place. An example will help to make this clear. A Spanish-speaking ESL student had heard the word *so* in the following sentence: *So, what did you do yesterday?* The student could neither figure out what it meant nor how to use it and asked a direct question in an ESL class as to the meaning. From this, one can infer that the learner had stored this information and was waiting for it to be available for integration.
4. **Nonuse:** In this final possibility, learners make no use of the input at all. This may be because they have not succeeded in comprehending it at a useful level. Integration is not necessarily a one-time affair. Rather, there are different levels of analysis and reanalysis from storage into the grammar, and within the grammar itself, as part of integration. Importantly, the integration component does not function as an independent unit. This is particularly significant in the model we are discussing (and SLA in general) because SLA is dynamic and interactive, with knowledge itself being cumulative and interactive. Language information that is processed and deemed appropriate for language development, yet that is not put into storage, becomes part of a learner's knowledge system, or grammar. What are some factors that mediate among comprehended input, intake, and integration? Some are similar to those that are also available at the level of apperception. For example, the organizational structure of the NL may shape the way the learner's grammar is structured. Existing knowledge of the L2 will also shape the way integration takes place. Universal principles of language may also play a role in L2 grammar formation. Given a particular element in the input, there are universal factors that interact with it, resulting in a generalization of the initial input to other related domains. A factor that provides the impetus or motivation for changes in one's knowledge base is the recognition of a mismatch between what is present in the input and the learner's grammar.



For learners to modify their speech, they must first recognize that there is something in need of modification—that there is a perceived mismatch between NS speech and their own learner grammars. Evidence for integrated knowledge can be seen in one of two ways. First, there can be changes in the rule system that surface in the output. This is in fact what is typically thought of when one considers developmental changes. Second, there may be changes in the underlying system although there is no output change. Changes in underlying systems with no surface manifestation are typically subsumed under the category of reanalysis or *restructuring*. Within a L2 context, we can think of reanalysis in two ways. First, a reanalysis of the underlying system may affect the *potential* for output. For example, one can imagine a learner having learned the lexical item *orange juice* as a single lexical item *orange juice* and only at a later point in time reanalyzing it as *orange + juice*. This reanalysis sets the stage for the potential forms of *apple juice*, *grapefruit juice*, and so forth. Thus, reanalysis allows for the potential creation of novel forms. Second, on a syntactic level, prefabricated patterns may be analyzed (initially) with little output change.

#### 4.13.5. Output

The final stage that needs to be examined is that of output. There are two points to emphasize. First, there is the role of comprehensible output in testing hypotheses. Thus, there can be a feedback loop back into the intake component. Second, there is the role output plays in forcing a syntactic rather than a solely semantic analysis on language. This conceptualization of output necessitates a feedback loop to comprehended input. Learners' output is often equated with their grammar. For example, it is frequently inferred that changes in the output represent changes in a learner's grammar. However, the two should not be equated. That the output is not identical to one's grammar is suggested by a number of factors. Among these is the recognition that there are individual differences (IDs) in what learners are willing to say. Personality factors such as confidence in one's ability to produce correct TL sentences may influence whether or not a learner produces TL material. Additionally, learners produce different linguistic forms that have varying amounts of accuracy depending on the context and the task performed. For example, what learners can produce in writing is not what they can produce in speaking; what they can understand from a printed

page is not equivalent to what they can understand from an oral stimulus. Finally, different grammatical information may be used in different genres. Undoubtedly, this has to do with the ability to use different channels to express linguistic information. It is also a matter of limitations of access that one has to one's knowledge base. Not only is confidence in one's ability a determining factor in output, but we can also consider how strongly represented the knowledge is. There may be different degrees of strength of knowledge representation (perhaps related to the automaticity of language processing) that will in part determine what output will take place and how it will take place. An example is provided by Swain (1985, p. 248), who quoted from an eighth grade immersion student who said, "I can hear in my head how I should sound when I talk, but it never comes out that way." Thus, there appear to be limitations on the translation of knowledge into output. In sum, the output component represents more than the product of language knowledge; it is an active part of the entire learning process (Gass and Selinker, 2008, pp. 479–490).

#### **4.14. UNIVERSAL GRAMMAR (UG)**

The UG approach to SLA begins from the perspective of learnability. The assumption of innate universal language properties is motivated by the need to explain the uniformly successful and speedy acquisition of language by children in spite of insufficient input. In UG theory, universal principles form part of the mental representation of language, and it is this mental grammar that mediates between the sound and meaning of language. Properties of the human mind are what make language universals the way they are. As Chomsky (1995, p. 167) noted: "The theory of a particular language is its *grammar*. The theory of languages and the expressions they generate is UG; UG is a theory of the initial state  $S^0$  of the relevant component of the language faculty." The assumption that UG is the guiding force of child language acquisition has long been maintained by many, but only in the past two decades has it been applied to SLA. After all, if properties of human language are part of the mental representation of language, it is assumed that they do not cease being properties in just those instances in which a nonnative language system is being employed. The theory underlying UG assumes that language consists of a set of abstract principles that characterize core grammars of all-natural languages. In addition to principles that are invariable (i.e., all languages have them) are parameters that vary across languages.

In sum, UG is “the system of principles, conditions, and rules that are elements or properties of all human languages” (Chomsky, 1975, p. 29). It “is taken to be a characterization of the child’s pre-linguistic state” (Chomsky, 1981, p. 7). Thus, the necessity of positing an innate language faculty is due to the inadequate input, in terms of quantity and quality, to which a learner is exposed. Learning is mediated by UG and by the L1. How does this relate to SLA? The question is generally posed as an access-to-UG problem. Does the innate language faculty that children use in constructing their NL grammars remain operative in SLA? More recently, this question is formulated as an issue of initial state. What do L2 learners start with?

**Initial State** The question posed in this regard is: What is the nature of the linguistic knowledge with which learners begin the SLA process? That is, what is the unconscious linguistic knowledge that learners have before receiving L2 input, or, to take a variant of the question, what are early L2 grammars like? The two variables influencing this debate are transfer (i.e., the availability of the first language (L1) grammar) and access to UG (i.e., the extent to which UG is available). Two broad views are discussed generally: The fundamental difference hypothesis (FDH) (Bley-Vroman, 1989; Schachter, 1988), *which argues that what happens in child language acquisition is not the same as what happens in adult SLA*, and the Access to UG Hypothesis, which argues that *the innate language facility is alive and well in SLA and constrains the grammars of L2 learners as it does the grammars of child L1 learners* (Gass and Selinker, 2008, pp. 159–165).

## 4.15. UG AND SLA

UG does not constrain second-language grammars or UG is impaired. Some researchers believe that L2 grammars are fundamentally different from L1 grammars because they are not constrained any longer by UG, and learners have to resort to general learning mechanisms, giving rise to ‘wild’ grammars, that is, grammars which do not necessarily conform to the general rules underlying natural human languages. Other researchers believe that only the principles and parameters instantiated (activated) in the learners’ L1 will be available, and that parameter resetting is impossible. Within this view, the L2 grammar is still UG constrained in the sense that it does not violate UG principles and parameters (it is not ‘wild’), but it cannot become the same as that of L1 speakers of the same language. There is considerable controversy around all these issues, and there are many representatives of each of these positions in the literature about SLA (Mitchell and Myles, 2004, pp. 55, 56).

### 4.15.1. Access or No Access to UG?

As it was discussed in year 94, item 83, when it comes to the issue of access to UG, two broad views are discussed generally: the FDH which argues that what happens in child language acquisition is not the same as what happens in adult SLA, and the Access to UG Hypothesis, which argues that the innate language facility is alive and well in SLA and constrains the grammars of L2 learners as it does the grammars of child L1 learners. Here, different hypotheses regarding the second view are discussed.

### 4.15.2. Access to UG Hypothesis

The opposing view to the FDH is the Access to UG Hypothesis. The common perspective is that “UG is constant (that is, unchanged as a result of L1 acquisition); UG is distinct from the learner’s L1 grammar; UG constrains the L2 learner’s interlanguage (IL) grammars” (White, 2003, p. 60). White (2003) outlines five different positions with regard to the initial state of L2 learning; the first three take the L1 as the basis of the initial state and the second two take UG as the initial state:

1. **Full Transfer/Full Access:** This position assumes that the starting point is the L1 grammar, but that there is full access to UG (both principles and parameters) during the process of acquisition. The learner is assumed to use the L1 grammar as a basis but to have full access to UG when the L1 is deemed insufficient for the learning task at hand (therefore, all features of L1 are NOT transferred to L2 grammar and we have parameter resetting). L1 and L2 learning differ, and there is no prediction that learners will eventually attain complete knowledge of the L2. Therefore, L2 grammar is UG constrained.
2. **Minimal Trees Hypothesis:** Recall that in the previous position, full transfer/full access, learners draw on both the L1 and UG. The first option was to draw on the L1 and, where that was insufficient, to draw on UG. The Minimal Trees Hypothesis also maintains that both L1 and UG are available concurrently. However, the L1 grammar that is available contains no functional categories, and these categories, initially, are not available from any source. The emergence of functional categories is not dependent on the L1, and hence there is no transfer; rather, they emerge in response to L2 input. The development of functional categories of learners from different languages will be the same. On this view, learners

may or may not reach the final state of an L2 grammar, depending on what is available through the L1 and what is available through UG. They should be able to reach the final state of an L2 grammar with regard to functional categories.

3. **Valueless Features:** This is the most technical of the hypotheses and will be dealt with in the least detail. In essence, the claim is that there is weak transfer. The L1 is the primary starting point. Unlike the Minimal Trees Hypothesis, both functional and lexical categories are available from the L1, but the strength of these features is not available. There are consequences of feature strength in areas such as word order. Acquisition involves acquiring appropriate feature strength of the L2. Learners should be able to fully acquire the L2 grammar.
4. **The Initial Hypothesis of Syntax:** This position maintains that, as in child language acquisition, the starting point for acquisition is UG.
5. **Full Access/No Transfer:** This position maintains that, as in child language acquisition, the starting point for acquisition is UG. There is a disconnection between the L1 and the developing L2 grammar. A prediction based on this position is that L1 and SLA will proceed in a similar fashion, will end up at the same point, and that all SLA (regardless of L1) would proceed along the same path. Learners should be able to reach the same level of competence as NSs. If there are differences, they are performance-related rather than competence-related (Gass and Selinker, 2008, pp. 164–168; Mitchell, Myles, and Marsden, 2013, pp. 89–94).

#### 4.15.3. Minimalist Program

In Chomsky's most recent work on UG, called the Minimalist Program, he suggests that the language faculty consists of a computational procedure (sometimes called "narrow syntax"), which is virtually invariant across languages, and a lexicon (2000, p. 120).

The principles proposed in the Minimalist Program are even more powerful than in previous incarnations of generative theory. But probably the biggest changes proposed in the Minimalist Program concern parameters. Instead of being linked to specific principles and contained in the structural part of the grammar, parameters are now contained within the lexicon. This departure was the result of research attempting to describe principles and

parametric variation in growing numbers of the world's languages; for UG to be able to account adequately for cross-linguistic variation, the number of parameters attached to core principles was becoming very large. The minimalist program's endeavor, therefore, was to propose more abstract and invariant computational principles, such as "merge" (the operation by which two syntactic objects are combined to form a new syntactic unit, for example, a verb and its complement combine to form a Verb-Phrase) or Move  $\alpha$ . In this view, languages are different from one another only because their lexicons are different. According to Minimalism, the abstract principles underlying all human languages will already be specified in the computational module, and the task facing children (or L2 learners) is therefore to learn the lexicon of the language around them, including the settings of the parameters applying to that language. This idea is the Lexical Parameterization Hypothesis, and it suggests that the parameters are contained primarily in the functional categories. For example, the functional category Agr, which governs agreement phenomena, contains a gender feature in languages such as French or Italian, but not in others such as English (Mitchell, Myles, and Marsden, 2013, pp. 75, 76).

#### 4.16. AUTONOMOUS INDUCTION THEORY (AIT)

Carroll (2001) proposes the autonomous induction theory (AIT), which attributes difficulties in learning a L2 to *parsing problems*. *Acquisition moves forward when there is a failure in the parsing of utterances*. Learning is an inductive process in this view (learning takes place by being presented with examples—input—and making generalizations from those examples) and learning is triggered by a failure to process incoming stimuli. Parsing involves a categorization of the stream of sounds that one hears into some meaningful units (e.g., lexical, functional, syntactic).

When one hears an L2 utterance, one has to assign appropriate relationships, that is, one has to parse the elements into something that makes sense.

Thus, let's assume a complex sentence such as *That's the cat whom the dog bit*. Let's further assume that a learner hears this and parses it as if it were *That's the cat who bit the dog*, given that the latter is an "easier" relative clause structure. Finally, let's assume that the learner knows from prior events that it was the dog who had done the biting. It is at this juncture that there is a signal to the parser that there needs to be an adjustment. This is not to say that there will always be a positive result and that the parsing

mechanism will be adjusted; it is to say that this is the mechanism by which such adjustments may take place. As Carroll (2007, p. 161) puts it, the LAD “is triggered when the parsing system fails” (Gass and Selinker, 2008, p. 240).

## 4.17. CHAOS/COMPLEXITY THEORY (CT)

Complexity theorists are fundamentally concerned with describing and tracing emerging patterns in dynamic systems in order to explain change and growth. As such, complexity theory (CT) is well-suited for use by researchers who study SLA, and it is not surprising, therefore, that its influence has been increasing. In fact, the famous physicist Stephen Hawking (2000) has called the 21<sup>st</sup> century “the century of complexity.” CT has a broad reach. It is transdisciplinary in two senses of the term: first, in that it has been used to inform a variety of disciplines, for example, epidemiology in biology, dissipative systems in chemistry, stock market performance in business—and more germane to our interests—investigations of language (e.g., Bybee, and Hopper, 2001), language change (e.g., Kretzschmar, 2009), language evolution (e.g., MacWhinney, 1999), language development (e.g., Larsen-Freeman, 2006), discourse (e.g., Cameron, 2007), and multilingualism (e.g., Herdina, and Jessner, 2002). The second way that it is transdisciplinary is that complexity contributes a new cross-cutting theme to theory development, comparable to prior revolutionary transdisciplinary themes such as structuralism and evolution (Halliday and Burns, 2006). Diane Larsen-Freeman was the first individual to apply CT to language development.

### 4.17.1. Characteristics of Complex Systems

#### 4.17.1.1. Emergence

Complexity introduces the theme of emergence (Holland, 1998), “the spontaneous occurrence of something new” (van Geert, 2008, p. 182) that arises from the interaction of the components of a complex system, just as a bird flock emerges from the interaction of individual birds. Since a bird flock cannot be understood from examining a single bird, the search for understanding a phenomenon shifts from reductionism, or explaining the phenomenon by describing its simpler components, to *understanding how complex order emerges from interacting components*.



#### ***4.17.1.2. Self-Organizing***

Furthermore, the above-mentioned order emerges “without direction from external factors and without a plan of the order embedded in an individual component” (Mitchell, 2003, p. 6). In other words, complex systems are self-organizing.

#### ***4.17.1.3. Dynamic and Open***

It is important to add that saying that order emerges does not mean that the resulting pattern remains static, just as a bird flock is not fixed. In this regard, complex systems are also known as dynamic systems. Calling them such highlights their ceaseless movement: they attain periods of stability, but never stasis. They are about becoming, not being (Gleick, 1987, p. 5). Complexity theorists study change through time, sometimes continuous change, sometimes sudden. Dynamic systems are represented as trajectories in state space (de Bot, 2008). As the systems evolve, they undergo phase transitions, in which one more or less stable pattern gives rise to another. One way to think of phase transitions is to observe a pot of water on a stove. As the water heats, it changes from a seemingly inert phase to a roiling phase.

Provided that complex systems are open, that is, they interact with their environment (and depending on the type of system, they exchange information, matter, or energy with it), they will show the emergence of order. Think of an eddy in a stream. The water molecules that comprise it are constantly changing because it is an open, dynamic system. However, the whorl remains more or less constant—a pattern emergent in the flux.

#### ***4.17.1.4. Adaptive***

Complex systems are also adaptive. An adaptive system changes in response to changes in its environment. Successful adaptive behavior entails the ability to respond to novelty. For example, a human being’s adaptive immune system lacks centralized control and does not settle into a permanent, fixed structure; for this reason, it is able to adapt to combat previously unknown invaders.

#### ***4.17.1.5. Nonlinear***

Complexity theorists seek to explain the functioning of emergent, complex, dynamic, open, adaptive, and nonlinear systems (Larsen-Freeman, 1997).



Ellis (2008) explicates that, drawing on work in the physical sciences that has shown that complex systems are random, nonlinear, unpredictable, self-organizing, and subject to strange attractors (i.e., they tend to focus on a particular pattern that determines the boundaries of the phenomenon), Larsen Freeman has proposed that language and SLA are best viewed as complex systems. She identified a number of features of SLA that justify this analogy: it constitutes a dynamic process characterized by variability, this process is self-evidently complex (i.e., it involves a number of interacting factors), it is nonlinear (i.e., learners do not master one item and then move on to another), the learner's IL system is self-organizing (i.e., it manifest *restructuring*), and the learner's L1 functions as a strange attractor. Larsen Freeman's application of chaos theory is fundamentally emergentist in that it conflates how L2 knowledge is represented with how it is used and develops over time. In sum, CT seeks to explain complex, dynamic, open, adaptive, self-organizing, nonlinear systems. It focuses on the close interplay between the emergence of structure on one hand and process or change on the other. Language, its use, its evolution, its development, its learning, and its teaching are arguably complex systems. Thus, CT offers a way to unite all these phenomena. CT can therefore be tapped for its useful perspective on dynamic phenomena such as L2 development. No longer must we decontextualize, segregate, idealize, and a temporalize language (Larsen-Freeman, 2008). One of CT's innovations is that in acknowledging the complexity of natural systems, it avoids reductionist solutions. It sees complex behavior as arising from interactions among many components—a bottom-up process based on the contributions of each, which are subject to change over time.

#### 4.17.2. Common Misunderstandings

A possible source of confusion is that the genesis of CT lies in the physical sciences. For this reason, *some might find it inapplicable* to more human concerns, such as language development. However, this concern can be put to rest once it is clear that the *explanatory power of the theory extends beyond the physical sciences*. Byrne and Callaghan (2014) assert “that much of the world and most of the social world consists of complex systems and if we want to understand it we have to understand it in those terms” (p. 8). In its transdisciplinary, then, CT is a general framework for understanding, and object theories, such as a theory of language development, must be consistent with its constructs. The other, perhaps most prevalent, misunderstanding is that “complex” means “complicated.” It does not. A complex system may

be made up of many heterogeneous components, but what is of interest is the complex, ordered behavior that arises from their interactions. In other words, “*complex*” *relates to the emergence of order and structure from the interactions of components while the system is simultaneously interacting with its environment* (Atkinson, 2011, p. 52; Ellis, 2008, p. 465; VanPatten and Williams, 2015, pp. 227, 228).

#### **4.18. MARXIST THEORY**

Wertsch (1985, p. 199) has suggested that Vygotsky’s developmental research was inspired by three essential principles of Marxist theory: (1) the idea that human consciousness is fundamentally social, rather than merely biological, in origin; (2) that human activity is mediated by material artifacts (e.g., computers, the layout of built environments) and psychological and symbolic tools/signs (e.g., language, literacy, numeracy, concepts); and (3) that units of analysis for understanding human activity and development should be holistic in nature (VanPatten and Williams, 2015).

#### **4.19. INTERLANGUAGE (IL) THEORY**

Corder (1971, as cited in Schumann, 1974) defines the spontaneous speech of a L2 learner as a language hating a genuine grammar. He calls this learner language an idiosyncratic dialect. Nemser (1971, as cited in Schumann, 1974) identifies the learner language as an “approximative system” which is defined as a structurally cohesive linguistic system distinct from both the source language and the TL. It is by definition transient and is gradually restructured in successive stages from initial through advanced learning. According to Nemser (1971, as cited in Schumann, 1974), the ultimate goal of the study of such systems would be the “accurate projection of the approximative system throughout its successive stages of development in each contact situation.”

Selinker (1972, as cited in Bialystok and Sharwood Smith, 1985) suggests that there is a *latent psychological structure* in the brain that is activated when one attempts to learn a L2, i.e., whenever one tries to produce sentences in the L2 using meanings one may already have. When such an attempt is made, the utterances which are realized are not identical to those which would have been produced by a NS of the TL. Nor are they identical to the sentences having the same meaning in the learner’s NL. Thus a separate linguistic system is hypothesized to account for the actual realized

utterances. This system is called “IL” (Selinker, 1972, as cited in Tarone, 1983). However, it is not enough to simply conclude that the learner’s IL is systematic since this conclusion does not answer the question: What is the nature of that system?

## **4.20. THE PREMISES OF INTERLANGUAGE (IL) THEORY**

### **4.20.1. The Learner Constructs a System of Abstract Linguistic Rules which Underlies Comprehension and Production**

Selinker (1972, as cited in Bialystok and Sharwood Smith, 1985) and Lakshmanan and Selinker (2001) seem to view IL as a single linguistic system in its own right composed of rules which have been developed via different processes including transfer, simplification, and correct understanding of the target system. The learner draws on these rules in much the same way as the NS draws on linguistic competence. The rules are also responsible for the systematicity evident in L2 learner language (Adjemian, 1977, as cited in Tarone, 1979).

### **4.20.2. The Learner’s Grammar Is Permeable**

This means that the grammar of the language learner builds is immature and unstable and is subject to change either internally, by means of transfer from the L1 or overgeneralization of an IL rule, or externally, via exposure to TL input (Ellis, 1990, p. 51).

### **4.20.3. The Learner’s Competence in Transitional**

The permeability of an IL system culminates in its rapid revision by language learners; therefore, they pass through a number of stages to acquire the TL. Each stage constitutes “an IL,” or in Corder’s (1981) terms a “transitional competence” (p. 67). The series of stages together comprise the “IL continuum” (Ellis, 1997, p. 33).

### **4.20.4. The Learner’s Competence Is Variable**

The language learner’s competence must be viewed as heterogeneous rather than homogeneous (Tarone, 1983). A basic distinction is made between horizontal and vertical variation (Ellis, 2008, p. 129). The horizontal dimension refers to the IL that a learner has constructed at a specific point in

time, while the vertical dimension refers to the developmental stages through which the learner passes over time and is therefore coterminous with “order/sequence of development” (Ellis, 1985). Horizontal variation is divided into inter-learner variation such as motivation, personality, psycholinguistic, and/or social variation, and intra-learner variation is taking the form of either free (non-systematic) variation or systematic variation.

#### ***4.20.4.1. Systematic Variability***

The study of how language users systematically vary their use of linguistic forms has been a major area of sociolinguistic inquiry. Two major types of variability have been identified and described: situational variability and contextual variability (Ellis, 1985). Situational variability consists of the alternation of two or more linguistic forms in accordance with extralinguistic factors. The study conducted by Labov (1970, as cited in Ellis, 1985) showed that there was systematic variability in the speech of New Yorkers regarding the level of formality of language use based on social factors. Labov model accounts for stylistic variability; that is variability determined by participant factors.

The second type of variability that has been identified in IL is contextual variability. This is evident when the language user varies his use of linguistic forms according to the linguistic environment. Examples of how this has been treated in sociolinguistic theory are Labov (1970, as cited in Ellis, 1985) and Dickerson (1975). Both situational variability and contextual variability constitute continuums, with some linguistic contexts associated with the use of one variant and other contexts with another, but with all variants occurring in varying proportions in all contexts at some stage of development (Ellis, 1985).

#### ***4.20.4.2. Non-Systematic (Free) Variability***

This non-systematic variability is of two types. The first type is the result of performance lapses, the numerous false starts, deviations from rules, changes of plan in mid-course, etc. This type is not part of the language user's competence. It occurs when the language user is unable to perform his competence. The second type is that variability that is the result of competing rules in the learner's competence such as different pronunciations of “data,” “often,” and “schedule.” These rules are acted upon quite haphazardly (Ellis, 1985). A number of theoretical positions have been advanced to explain IL variability.

#### *4.20.4.2.1. The Homogeneous Competence Paradigm*

which is described by Adjemian (1976, as cited in Tarone, 1983). It attributes to the learner a unitary competence, which is considered to underlie speech production. This competence is not always manifest in performance, because of various processing constraints which distract the user. The homogeneous competence paradigm sees variability as a performance characteristic in accordance with Chomskyian theory of language.

#### *4.20.4.2.2. The Capability Continuum Paradigm*

as described by Tarone (1979, 1983). This paradigm rests on the assumption that the learner's competence (or "capability" as Tarone prefers to call it) is heterogeneous, made up of a continuum of styles, ranging from the careful to the vernacular. Which style the learner calls upon is determined by the degree of attention paid to language form, which in turn is a reflection of social factors to do with participant factors. Tarone emphasizes that it enables IL to be portrayed as systematic both because it is describable through a set of variable and categorical rules, and because it has internal consistency (Tarone, 1983).

#### *4.20.4.2.3. The Dual Competence Paradigm*

as described by Krashen (1981, as cited in Tarone, 1983), which is exemplified by the Monitor Theory. Briefly, Krashen distinguishes "acquisition" and "learning," arguing that the latter is involved in language performance through the use of the Monitor, a device for editing utterances initiated by means of "acquired" knowledge.

#### *4.20.4.2.4. The Multiple Competence Paradigms*

as described by Ellis (1985) who posits that the learner does not possess a single IL system, but a number of separate and overlapping systems. Selinker and Douglas (1985, as cited in Ellis, 1985) suggest that the process of second-language acquisition involves the building of a number of IL systems, which may share some rules, but which also contain some unique rules. The construction of these ILs is linked to the creation of "discourse domains": "a personally and internally created area of one's life that has importance" (Selinker and Douglas, 1985, as cited in Ellis, 1985).

#### **4.20.5. Interlanguage (ILs) Development Reflects the Operation of Cognitive Learning Strategies (Ellis, 1990, p. 52)**

One view which holds that the L2 learner does not necessarily utilize the same LAD as the child does identifies a number of cognitive learning processes such as L1 transfer, overgeneralization, and simplification (Cancino et al., 1974, as cited in Ellis, 1990, p. 52). The different kinds of errors learners produce reflect different learning strategies (Ellis, 1997, p. 34). The similarity between L1 and SLA lies in the process of hypothesis-formation and testing. Hypothetical rules, formulated on the basis of learning strategies, are tested out in comprehension and production and amended, if needed. It is likely that the first attempt will not establish form-function correlations that correspond to those of the TL (Ellis, 1985).

It is easy, now, to see why two types of variability arise in IL. Non-systematic variation occurs when new forms are assimilated but have not yet been integrated into the learner's form-function system. Systematic variation, on the other hand, occurs when the new forms have been accommodated by a restructuring of the existing form-function system to give the new forms their own meanings to perform (Ellis, 1985).

#### **4.20.6. Interlanguage (IL) Use Can Also Reflect the Operation of Communication Strategies (Ellis, 1990, p. 52)**

Having to communicate messages for which the linguistic resources are not available, learners resort to a variety of communication strategies (Tarone, 1980). These strategies help them bridge the gap. The commonest ones are paraphrase, code-switching, and appeal-for-help.

#### **4.20.7. Interlanguage (IL) Systems May Fossilize (Ellis, 1990, p. 52)**

Selinker (1972, as cited in Lakshmanan and Selinker, 2001) used the term *fossilization* to refer to the tendency of many learners to stop developing in their IL grammar in the direction of the TL. This may be because either there is no communicative need for further development or full competence in an L2 is neuro linguistically impossible for most learners. The prevalence of backsliding (i.e., the production of errors representing an early stage of development) is typical of fossilized learners (Ellis, 1997, p. 34).

An IL is not a full language, nor is it a reduced or treated one; it is a point on the way to a full natural language (Davies, 1989). IL involves

at least three essential processes: (1) the internalization of new linguistic forms; (2) the progressive organization of form-function relationships; and (3) the elimination of redundant forms (Ellis, 1985). In fact, the theory of IL legitimizes L2 learner's language. Ordinarily, the teacher's approach has been to evaluate the student's progress in terms of right versus wrong, not considering the various degrees of right and wrong. Given the concept of IL, the teacher is urged to first recognize the L2 learner's language and then look at degrees of attainment, not just at a right/wrong dichotomy of English versus non-English.

## 4.21. INSTRUCTED SLA (ISLA)

Instruction is any systematic attempt to enable or facilitate language learning by manipulating the mechanisms of learning and/or the conditions under which these occur. Based on this definition, institutionalized instruction and methods of training, as well as individualized L2 instruction, self-study, computer-assisted instruction, and the use of audio-visual and electronic learning materials are all concerned. Pierrard (2005) maintains that the study of instructed second language acquisition (ISLA) is motivated by several concerns. First, ISLA merits our attention because it is an important social phenomenon. An ever-increasing number of people, particularly in the developed world, are learning a L2 at least partially through instruction, mainly in the controlled environment of a classroom. Indeed, ISLA may well be the predominant mode of SLA, more so than *naturalistic* SLA. Consequently, the study of ISLA has great descriptive value and ecological validity. Secondly, the study of ISLA also has applied value, especially for language education. L2 learning and L2 teaching are both highly complex tasks that require much time, effort, and resources from the learner, the instructor, and the community. Insights from ISLA research can reveal the complexity of these tasks and contribute to improvements in instructional practice. Finally, the study of ISLA has theoretical value. It calls for a consideration of a wide range of theoretical issues pertaining to the nature of language, language learning, language knowledge and language processing, and the relationships between them.

In regard to the effects that instruction exerts on SLA House and Pierrard (2005) propose four major categories:

1. First instruction can, at least in principle, affect any one of the three *basic dimensions* of the language learning process (Klein,



- 1986; Ellis, 1994): *a.* it may affect the *route of acquisition* (i.e., instructed learners may internalize the various features of the TL in a different order from non-instructed learners); *b.* it may affect the *rate* of language learning (i.e., accelerate or slow it down); *c.* it may affect *ultimate levels of attainment* and the ‘*end-state*’ of learning (i.e., instructed language learners may ultimately reach either higher or lower stages of development, or attain higher or lower levels of proficiency than non-instructed learners).
2. Secondly, in terms of the *basic components* of SLA (Klein, 1986; Ellis, 1994), instruction can be viewed as doing one or several of the following: *a.* instruction can provide learners with *exposure* to the TL (i.e., input, and output opportunities) which is otherwise insufficiently available; *b.* instruction can influence learners’ *propensity* to use and learn the TL (e.g., by stimulating their motivation); *c.* instruction can trigger *learning processes and mechanisms* which are otherwise insufficiently activated (e.g., automatization processes, restructuring of linguistic representations).
  3. Thirdly, for the purpose of describing the role of instruction, the third component listed above, L2 learning processes, can be envisaged as comprising three broad *types of processes*: *knowledge internalization*, *knowledge modification* and *knowledge consolidation*. The goals and effects of instruction can be accordingly characterized as follows: *a.* instruction may enable learners to *internalize* new L2 knowledge (so that they become *more elaborate* L2 users with, for example, a richer vocabulary and more complex grammar); *b.* instruction may enable learners to *modify (restructure)* their L2 knowledge and performance, particularly the deviant, non-target like aspects of their knowledge and performance (so that they become *more accurate*); *c.* instruction may enable learners to *consolidate* their L2 knowledge (so that they can use the L2 with greater ease and for a wider range of tasks and functions, in short, so that they become *more fluent* language users).
  4. This leads us to the fourth and final way in which the goals and effects of instruction can be envisaged, namely in terms of the types of language knowledge which it promotes. The most common distinctions in SLA research are between *implicit* and *explicit* knowledge and *declarative* and *procedural* knowledge.



For an instruction to be successful, Ellis (2005) enumerates some principles:

- **Principle 1:** Instruction needs to ensure that learners develop both a rich repertoire of formulaic expressions and a rule-based competence.
- **Principle 2:** Instruction needs to ensure that learners focus predominantly on meaning.
- **Principle 3:** Instruction needs to ensure that learners also focus on form (FonF).
- **Principle 4:** Instruction needs to be predominantly directed at developing implicit knowledge of the L2 while not neglecting explicit knowledge.
- **Principle 5:** Instruction needs to take into account the learner's 'built-in syllabus.'
- **Principle 6:** Successful instructed language learning requires extensive L2 input.
- **Principle 7:** Successful instructed language learning also requires opportunities for output.
- **Principle 8:** The opportunity to interact in the L2 is central to developing L2 proficiency.
- **Principle 9:** Instruction needs to take account of IDs in learners.
- **Principle 10:** In assessing learners' L2 proficiency, it is important to examine free as well as controlled production.

According to Ellis (2005b) there are some good reasons to focus on meaning (FonM):

- In the eyes of many theorists (e.g., Long, 1996; Prabhu, 1987), only when learners are engaged in decoding and encoding messages in the context of actual acts of communication are the conditions created for acquisition to take place.
- To develop true fluency in a second language, learners must have opportunities to engage in real communication (DeKeyser, 1998).
- Engaging in activities focused on creating meaning is intrinsically motivating for learners.

## 4.22. THE ROLE OF INSTRUCTION FOR RULES OF VARIOUS LEVELS OF DIFFICULTY

Drawing on what we know about the various roles of instruction in general for SLA (especially Long, 1983, 1988; Long and Robinson, 1998), on Schmidt's (1990, 1994, 1995, 2001) hypothesis that noticing, but not necessarily understanding, is important for SLA, and on recent evidence that instruction is important to enhance subsequent noticing (Peckham, 2000), one can hypothesize different degrees of usefulness of explicit teaching for different levels of difficulty, as shown in Table 4.2. It is important to note, however, that rule difficulty is an individual issue that can be described as the ratio of the rule's inherent linguistic complexity to the student's ability to handle such a rule. What is a rule of moderate difficulty for one student may be easy for a student with more language learning aptitude or language learning experience, and therefore the role of instruction for that element of grammar may vary from bringing about the learning of a structure that otherwise would not be learned to merely speeding up the learning process. Conversely, for a weaker student, the goal may not be to get the student to learn the rule at issue, but to draw enough attention to the forms involved so that the student will notice them more at some level and at least implicitly acquire some concrete uses of these forms through subsequent exposure rather than acquire the more abstract rule during instruction. Thus, for one and the same rule, the goal, as well as the degree of effectiveness of explicit instruction, will vary depending on the *subjective difficulty* of the rule.

**Table 4.2.** Instruction for Rules of Various Levels of Difficulty

Rule Difficulty	Role of Instruction
Very easy	Not useful (not necessary)
Easy	Speeding up the explicit learning process
Moderate	Stretching ultimate attainment
Difficult	Enhancing later implicit acquisition by increasing chances of noticing
Very difficult	Not useful (not effective)

Source: Doughty and Long (2003, pp. 331, 332).

## 4.23. INVOLVEMENT LOAD HYPOTHESIS

Laufer and Hulstijn (2001) attempt to stimulate theoretical thinking and empirical research in the domain of L2 vocabulary learning by introducing *a construct of involvement with motivational and cognitive dimensions: Need, Search, and Evaluation*. Retention of hitherto unfamiliar words is claimed to be conditional upon the amount of involvement while processing these words. Involvement is operationalized by tasks designed to vary in the degree of need, search, and evaluation. The chapter reviews a number of constructs that are currently debated and investigated in the literature on cognitive and motivational aspects of L2 learning. It also re-examines the existing empirical literature on task effect in the light of the proposed construct of task-induced involvement, stresses the need for deepening and broadening the construct, and discusses possibilities it offers for research on vocabulary learning.

### 4.23.1. Task-Induced Involvement

On the basis of the analysis of tasks surveyed earlier and on the basis of our conclusion drawn from the literature reviewed, we propose to identify the components of incidental tasks which we believe are conducive to the kind of elaborate processing crucial for learning. This proposal should be conceived as a first attempt to stimulate researchers as well as practitioners to operationalize the general labels of ‘attention’ and ‘elaboration’ into concrete task-specific constructs. For now, three such components will be proposed which, taken together, constitute the construct of involvement. The first assumption about determining factors in vocabulary retention is as follows: *Retention of words when processed incidentally, is conditional upon the following factors in a task: need, search, and evaluation*.

Taken together, these three factors combine into what will be referred to as involvement. Involvement is perceived as a motivational-cognitive construct which can explain and predict learners’ success in the retention of hitherto unfamiliar words. We use the label cognitive in its narrow sense, i.e., referring to information processing only, with the exclusion of affective aspects of cognition, as explained in the preceding review.

The need component is the motivational, non-cognitive dimension of involvement. It is concerned with the need to achieve. We interpret this notion not in its negative sense, based on fear of failure, but in its positive sense, based on a drive to comply with the task requirements, whereby the task requirements can be either externally imposed or self-imposed. If, for

example, the learner is reading a text and an unknown word is absolutely necessary for comprehension, s/he will experience the need to understand it. Or, the need will arise during a writing or speaking task when the L2 learner wants to refer to a certain concept or object but the L2 word expressing it is unfamiliar. We propose to distinguish between ‘moderate’ and ‘strong’ need. Need is moderate when it is imposed by an external agent, e. g. the need to use a word in a sentence which the teacher has asked the learner to produce. Need is strong when imposed on the learner by him- or herself. A case in point is a decision to express a concept without knowing the appropriate word for it. In the case of need, moderate, and strong subsume different degrees of drive.

Search and evaluation are the two cognitive (information processing) dimensions of involvement, contingent upon noticing and deliberately allocating attention to the form meaning relationship (Schmidt, 2000). Search is the attempt to find the meaning of an unknown L2 word or trying to find the L2 word form expressing a concept (e.g., trying to find the L2 translation of an L1 word) by consulting a dictionary or another authority (e.g., a teacher). An example is an L2 writing task in which an L1 word is looked up in a dictionary and three L2 alternatives are presented. The translations have to be evaluated against each other, and the most suitable one has to be chosen for the specific meaning the L2 writer is trying to convey. But unlike in the preceding example, the evaluation in the writing task will involve additional syntagmatic decisions about the precise collocations of the word which the learner is trying to use. Evaluation, as illustrated by the two examples above, implies some kind of selective decision based on a criterion of semantic and formal appropriateness (fit) of the word and its context. If the evaluation entails recognizing differences between words (as in a fill-in task with words provided), or differences between several senses of a word in a given context, we will refer to this kind of evaluation as ‘moderate.’ If, on the other hand, evaluation requires making a decision about additional words which will combine with the new word in an original sentence or text, we will refer to it as ‘strong’ evaluation (Laufer and Hulstijn, 2001, p. 1).

#### **4.24. LEGISLATION BY HYPOTHESIS**

Ellis (2013) indicate that some critics view TBLT as an approach dreamed up by SLA researchers on the basis of a set of unsupported theoretical premises. *Swan coined the catchy phrase ‘legislation by hypothesis’ to dismiss the theoretical basis of TBLT.* Along with Sheen, he argued that

there is no empirical evidence to support either the hypotheses that construct the theoretical rationale for TBLT or to demonstrate that TBLT is superior to traditional approaches. Ellis (2013) makes a distinction between task-based language teaching and task-supported language teaching. The former requires a syllabus in which the content is specified entirely in terms of the tasks to be performed (i.e., there is no linguistic specification). The latter is based on a linguistic syllabus: that is, tasks serve as a means of providing opportunities for practicing pre-determined linguistic items. Such tasks will by necessity be of the ‘focused’ kind. However, rather than serving as stand-alone activities they fit into the ‘production’ phase of a traditional present-practice-produce (PPP) methodology (Ellis, 2013, p. 18).

## 4.25. MULTICOMPETENCE THEORY

A theory most closely associated with the work of Cook who defines *multicompetence* as the compound state of a mind with two grammars to contrast with *monocompetence*, the state of mind with only one grammar. He maintains that language knowledge of the L2 user is different from that of the monolingual. He has consolidated research in first and SLA to show that the multicompetent individual approaches language differently in terms of metalinguistic awareness; multicompetence has an effect on other parts of cognition resulting in a greater metalinguistic awareness and a better cognitive processing; and that multicompetent speakers think differently from monolinguals, at least in some areas of linguistic awareness.

According to *multicompetence theory*, SLA involves not the learning of one language but the gradual development of two or more languages in the same mind. Multicompetence Theory is as much a philosophical statement as a theory of language acquisition. It argues that we wrongly conceive of monolingualism as the default position given that the majority of human beings are, to some extent, bilingual or multilingual. This therefore has implications for the importance that we attach to the NS (for which read monolingual) as the model for L2 learners to aspire to.

Language teachers’ over-arching objective should therefore be the creation of bilinguals not monolinguals of a L2. From a psycholinguistic perspective, multicompetence offers a variation on the theory of IL where any given psychological state in a learner is on a continuum between the L1 and NS-like L2 competence. Rather, the L1 and the L2 are in a constant state of inter-dependence. Support for this proposition can be found in evidence that: L2 speakers have a different type of knowledge of their L1 than

monolinguals; that, in fact, learning an L2 can act the L1; that in bilinguals CODE SWITCHING can occur without problems; that bilinguals are more cognitively flexible; that there is no separation in the mental lexicon between one or more languages; and that L2 processing cannot isolate L1 processing (Cook, 1992, 2007).

## 4.26. THE ASSOCIATIVE COGNITIVE CREED

### 4.26.1. The Contributions of the Associative Cognitive CREED to SLA

The Associative-Cognitive CREED holds that SLA is governed by the same principles of associative and cognitive learning that underpin the rest of human knowledge. The major principles of the framework are that SLA is *construction-based*, *Rational*, *Exemplar-driven*, *Emergent*, and *Dialectic*. Language learning involves the acquisition of constructions that map linguistic form and function. Competence and performance both emerge from the dynamic system that is the frequency-tuned conspiracy of memorized exemplars of use of these constructions, with competence being the integrated sum of prior usage and performance being its dynamic contextualized activation. The system is rational in that it optimally reflect prior first language (L1) usage. The L1 tunes the ways in which learners attend to language. Learned-attention transfers to L2 and it is this L1 entrenchment that limits the end state of usage-based SLA.

According to Richards and Schmidt (2002), the Associative Cognitive CREED is under the category of *Emergentism*. The *emergentists* thesis for language are mentioned by O'Grady (2008) that "the phenomena of language are best explained by reference to more basic non-linguistic (i.e., 'non-grammatical') factors and their interaction—physiology, perception, processing, WM, pragmatics, social interaction, properties of the input, the learning mechanisms, and so on." Emergentism denies the role an innate predisposed language faculty. They believe that language is best shaped through interaction and processing of inputs. According to Ellis (2006, p. 118) "the CREED encourages the adoption of an emergentists framework which views SLA as a dynamic process in which regularities and system arise from the interaction of people, brains, selves, societies, and cultures using languages in the world." The Associative Cognitive CREED is too broad to constitute a theory of SLA (Ellis, 2007). Rather it reflects the resonance of cognate research in cognitive psychology, linguistics, computer

science, cognitive neuroscience, education, and SCT, ideas which engage and interlock in a mutually-supportive framework, and whose interactions, when considered from a dynamic systems viewpoint, throw light on the emergence of many of the essential phenomena of SLA (Ellis, 2006).

#### **4.26.2. Major Principles and Tenet**

The basic tenet of the Associative-Cognitive CREED Theory is that human learn language the same way as he learns every thing. This theory is completely based on the emergentists view, which downgrades the role of an innate language faculty. It denies the existence of such a thing that Chomsky calls it LAD. The fundamental tenet of the Associative-Cognitive CREED theory is that we learn language in much the same way as we learn everything else. Thus as Ellis (2007) claims SLA is governed by general laws of human learning, both Associative (the types of learning first analyzed within the Behaviorist Tradition) and Cognitive (the wider range of learning processes studied within Cognitive Psychology, including more conscious, explicit, deductive, or tutored processes). The major principles of the Associative-Cognitive CREED theory, according to Ellis (2006), are that SLA is “construction-based, Rational, Exemplar-driven, Emergent, and Dialectic. Language learning involves the acquisition of constructions that map linguistic form and function.” (p. 100).

#### **4.26.3. Contribution of Cognitive Associative CREED to SLA**

Ellis with his Associative Cognitive CREED is especially concerned with the interface between explicit and implicit learning. He believes that in order to overcome the problem of transfer and L1 learned attention and automaticity, the interface of explicit and implicit learning is important. For the interface of explicit and implicit learning, what is needed is the involvement of consciousness. Consciousness can be involved in a number of ways: to attract the attention of the learner to ‘notice’ the negative evidence, to attract the learner’s attention to form (form-focused instruction), explicit instruction and social scaffolding, to make the learner to use analogical reasoning by describing the grammatical objectives, and to give the learners consciously guided practice. All of these would eventually result in unconscious and automatized and procedural skills (Ellis, 2006, p. 118).



## 4.27. DISCOURSE THEORY

Knowing a language means having command over linguistic properties and discursive properties of language. This does not come easily for L2. The study of discourse in SLA has two objectives: First, discover how L2 learners acquire the rules of discourse (rules and regularities NS use to hold the conversation). This is similar to acquiring grammatical rules. It is systematic and reflects both distinct type of errors and developmental sequences. Second, how input and interaction shape inter-language development: (a) Behaviorist view treats language learning as environmentally determined; (b) mentalists emphasize the importance of learner's black box; (c) Interactionist believe that both input and interaction play an important role. Generally agreed that discourse in which 2<sup>nd</sup> lang. learners participate is different from that of NSs. Features of these differences are:

1. **Foreigner Talk (FT):** Adjusting both language form and language function by NS in order to enable L2 learners to understand. It is believed that FT will enhance SLA.
2. **Negotiation of Meaning:** Attempt to remedy the communication breakdown either by the speaker or listener by engaging interactional work is called negotiation of meaning. Strategies like repetition, confirmation checks and comprehension checks and request for clarifications are all in line to negotiate meaning.
3. **Scaffolding:** Assistance provided for L2 learners either by more competent peers or the teacher is called scaffolding. Scaffolding should be temporary to be efficient.
4. **Comprehensible Output:** Engaging in interaction and producing output is called comprehensible output. Several roles have been identified for output by Swain: to generate better input, to force syntactic processing, to test hypothesis, to develop automaticity, to develop discourse skills, to develop personal voice.

### 4.27.1. Teacher Talk

A variety of language sometimes used by teachers when they are in the process of teaching. L2 teacher talk can be viewed as a special register, analogous to FT. Studies of teacher talk, like those of FT, have sought to describe its phonological, lexical, grammatical, and discursive properties. The research indicates that teachers modify their speech when addressing L2 learners in the classroom in a number of ways and also that they are sensitive to their learners' general proficiency level. Many of these modifications



are the same as those found in FT, but some seem to reflect the special characteristics of classroom settings—in particular, the need to maintain orderly communication.

### 4.27.2. Talk and Identity

To social constructionist approach, identity “is a public phenomenon, a performance or construction that is investigated by other people. This construction happens in discourse and other social and embodied conduct...” (Benwell and Stokoe, 2006, p. 4, as cited in Barjesteh and Alinia, 2019). This reverses a great modification from precedent identity views as an internal cognitive account to a more postmodern approach that seems at it in terms of semiotic and discursive issues, in spite of the claim that appears when some scholars and investigators view identity as represented in discourse while others argue that it is dynamically constituted in it. Discourse is applied by people to achieve social actions, which indicate how we talk, who we are, what we say or what we mean. That social construction of identity is “skillful, contend, attributed, opposed, instructed, and arranged in discourse” (*ibid.*, p. 4). Some other techniques such as critical social psychology, distributing theory or psychoanalysis also analyze the discursive construction of identity.

### 4.27.3. Foreigner Talk (FT)

FT is a type of speech often used by NSs of a language when communicating with non-native speakers (NNSs) who are not proficient in the language. FT promotes communication, signals, implicitly or explicitly, speakers’ attitudes towards their interlocutors, and teaches the TL implicitly. FT resembles *caretaker talk* in some respects, but also differs from it in others (e.g., there are fewer yes/no questions). Both ungrammatical and grammatical FT occurs, although it is not possible to identify the precise social conditions that favor one over the other. In the case of grammatical FT, three processes are evident: *simplification*, *regularization*, and *elaboration*. The modifications are continuous, influenced by the learner’s stage of development, and age.

It should be noted that whereas simplification involves an attempt on the part of NSs to simplify the language forms they use, regularization, and elaboration are directed at simplifying the learners’ task of processing the INPUT and can, in fact, result in the use of language that is not always simple in itself. This is important because it means that FT provides not only simple input, correspondingly perhaps to what learners already know, but also input containing linguistic features that they have not yet learned. One

way of simplifying is by adjusting temporal variables such as speech rate (measured usually in syllables per second), articulation rate (measured by calculating the ratio of the total number of syllables to the total articulation time) and silent pause phenomena (pause duration, pause distribution, and pause frequency). Regularization entails the selection of forms that are in some way basic or explicit. Examples include: fewer false starts; a preference for full forms over contracted forms; a preference for canonical word order. Elaboration is the opposite of simplification, but to claim that FT evidences both is not contradictory, as both processes can occur at different times. Elaboration often involves lengthening sentences in an attempt to make the meaning clear. NSs often use analytic paraphrases of lexical items they consider difficult.

Many of the formal characteristics of FT are very similar to those found in other simplified registers such as learner language, caretaker talk, and PIDGIN. This suggests that it reflects universal processes of simplification, knowledge of which constitutes part of a speaker's linguistic competence.

#### **4.27.4. Classroom Discourse**

The observed interaction between teacher and learners and between learners and learners. It is often claimed to constitute a distinct discourse domain. That is, it contains content features, structural relationships, and rituals which make it distinct from, for example, day-to-day informal conversation or the discourse of interviews. Classroom discourse is of interest to SLA researchers because:

- The L2 (in broadly *communicative* classrooms) represents both the content of the lesson and the medium through which the content is understood (thus it differs from other subjects on the curriculum);
- In many contexts teacher INPUT is the main exposure to the L2 that learners receive, thus the interaction represents a unique opportunity for learning;
- Teacher talk often contains the pedagogical intentions of the teacher which may not be obvious to observers or understood by learners;
- Classroom discourse is highly complex in that it often operates on several 'planes' and utterances can be directed at any number and combinations of participants in the interaction. Analysis of classroom discourse has been proposed as a tool for language

teacher development. Research has centered on: how teachers modify their speech to make it comprehensible; the use of controlling mechanisms which teachers deploy (e.g., through topic selection and *turn-taking* patterns; the cognitive demands of teacher questions; how communication breakdown is repaired; how teachers provide *feedback* to learner errors; how learners become socialized via the interaction. These diverse research themes reflect different research traditions adopted, and there is disagreement as to which analytical methods best explain the phenomenon— sociocultural (how interaction shapes society), psycholinguistic (how the interaction leads to learning) or ‘neutral-descriptive’ (the quantification and classification of talk).

#### 4.28. SPEECH ACCOMMODATION THEORY (SAT)

According to Accommodation Theory, there are three principal types of variation, according to the nature of the adjustments which speakers make to their speech during interaction. Please elaborate. A social-psychological model of language use proposed by Giles to account for the dynamic nature of variation within the course of a conversation. Accommodation Theory is based on the notion that speakers usually unconsciously change their pronunciation and even the grammatical complexity of sentences they use to sound more like whomever they are talking to. Accommodation occurs in a wide variety of communication behaviors, including the speaker’s accent, rate, loudness, register, grammar, vocabulary, and so on. Accommodation may take place at the following levels when speakers compare their own speech with that of an interlocutor: *speed of delivery* (the speed at which one talks), *pitch range* (how high or low in frequency one’s voice is), *phonological variables* (sounds used by the speaker), and *vocabulary* (the choice of words used). Accommodation differs according to the status of speaker and listener and is associated with power. For L2 learners, a primary reason for accommodation depends on the extent to which they and immigrants want to be accepted into their host communities. If an individual moves to a new country and works at a new company, he would likely have a high need for social approval; therefore, speaking style would be important. Accommodation Theory uses a social-psychological perspective to shed light on the relationship between social/situational factors and L2 use. It examines what social factors motivate the use of psycholinguistic choices. Studies regarding L2 learning have demonstrated that learners are sensitive

to their interlocutors. For instance, L2 learners tend to adapt their speech to their interlocutors by using more phonological variants. As a result, L2 learners are likely to be more hesitant and briefer when addressing listener with the same NL background as their own, and they are likely to be less prepared to negotiate any communication problems. Such a phenomenon occurs even during the early stages of learning, and learners seem to be aware of specific linguistic features that are seen as stereotypes about NSs of the TL. L2 learners are also more aware of their own identities as well as the conversation topic than are their native-speaker interlocutors. NSs are comfortable conversing in their L1, whereas L2 learners tend never to forget that they are foreigners, especially when speaking a second tongue; that is, they realize that they do not sound like NSs and therefore remain quiet during conversations. Likewise, this is true of the conversation topic. L2 learners often feel they will sound 'stupid' if they join a conversation with a NS when the topic is serious (philosophy, religion, war, etc.), and hence they might listen, but will not add to the conversation. Such sensitivity shows in their attitudes toward a certain topic, judging themselves as experts or non-experts when comparing themselves with their native-speaker interlocutors. L2 learners often report that they believe they are far too slow in speaking their L2 and that NSs are unusually fast.

According to Accommodation Theory, there are *three principal types of variation*, according to the nature of the adjustments which speakers make to their speech during interaction. *Convergence* occurs when the speaker adjusts his normal speech to make it more similar to the interlocutor's speech or when the speaker converges toward a prestigious norm that he believes is favored by the interlocutor. In short, the speaker accepts the interlocutor's values and seeks to demonstrate that acceptance by his own linguistic behavior.

Conversely, *divergence* occurs when speakers seek to alter their speech in order to make themselves linguistically different. *Speech maintenance* occurs when speakers do not make any changes. This is viewed as a failure to converge (the expected type of behavior). Both convergence and divergence can take place in an upward or downward fashion. *Upward convergence* occurs when speakers adjust their speech to exhibit the norms of high status individuals in their society. This is the most common type because it is based on the universal human desire for approval. *Downward convergence* involves adjustments in the direction of the speech norms from a higher class to a lower class. In fact, downward convergence involves speakers emphasizing the non-standard features in their repertoire, while upward divergence

involves emphasizing the standard features. Accommodation Theory shares certain premises with the acculturation model, but it also differs from it in a number of significant ways. Like Schumann, Giles is concerned to account for successful language acquisition. Both seek the answer in the relationships that hold between the learners' social group (termed 'in-group') and the TL community (termed the 'out-group'). However, whereas Schumann explains these relationships in terms of variables that create *actual* SOCIAL DISTANCE, Giles does so in terms of *perceived* social distance. Giles argues that it is how the in-group defines itself in relationship to the out-group that is important in SLA. Also, where Schumann appears to treat *social* and *psychological distance* as absolute phenomena that determine the level of interaction between the learner and NSs, Giles sees intergroup relationships as subject to constant negotiation during the course of each interaction. Thus, whereas for Schumann social and psychological distance are static (or at least change only slowly over time), for Giles intergroup relationships are dynamic and fluctuate in accordance with the shifting views of identity held by each group vis-à-vis the other.

Accommodation Theory to take account of the variability inherent in language-learner language and, also, the NS's input. Overall, the strength of Accommodation Theory is that it encompasses language acquisition and language use within a single framework. It also relates the acquisition of a new dialect or accent to the acquisition of an L2, as both are seen as a reflection of the learner's perception of himself with regard to his own social group and the TL/dialect group. Accommodation theory helps to explain how L2 learners vary in the way they use their L2 choice in terms of pronunciation, vocabulary, and grammatical structure. However, accommodation theory, like the acculturation model, does not explain assembly mechanisms. It does not account for the developmental sequence.

The accommodation theory of Gile is concerned with stylistic variations, which are more socially motivated than psycholinguistically motivated. It tries to explain how social groups (in-group or out-group) would influence SLA. That is, the learner will see himself as a member of a specific *in-group*, which is different from that of *the out-group*. If the *culture and language* of the in-group should be related to the out-group, then the boundaries between them is *soft*, and if they should be different, then boundaries are *hard* (Ellis, 1985). If the cultural and linguistic relationship between these two should be *soft*, then when the learner contacts with the TL, she tries to make her speech *similar* to that of her addressee in order to emphasize social *cohesiveness*. This process of social cohesiveness is called *convergence* (Ellis, 1985, 1994,

2007). When the speaker tries to make her speech dissimilar to that of her addressee in order to emphasize her social distinctiveness, then the process is named *divergence*.

Ethnosyntactic identity theory of Bourhis and Gile (1977) is associated with accommodation theory. In this theory, language is an important marker of social identity and group membership. The key notion in this theory is *ethnolinguistic vitality*. Ethno-linguistic vitality refers to a number of factors which make a group to behave differently and act collectively. The more distinctive and collective a group behaves, the more the chances are that the group survive and thrive as a collective entity in the inter-group context. On the other side when there is little ethnolinguistic vitality in the group, the group will ultimately cease to exist as distinctive language groups within the intergroup setting. Therefore, the more ethnolinguistic vitality exists the less likelihood of learners' reaching to language proficiency, because the learners remain in their ethnic in-group.

#### **4.29. COGNITIVE LOAD THEORY (CLT)**

The cognitive load theory (CLT, Sweller, 1988) as well as cognitive theories of multimedia learning (Mayer, 2001; Schnotz, 2005) initiated a lot of empirical studies which lead to the development of principles that foster the learning process and promote learning outcomes. These cognitive theories are closely allied in that they share the key assumption that the capacity of WM is in contrast to long-term memory (LTM) is limited. The CLT (Sweller, 1988) posits that a learner is confronted with three different kinds of cognitive load: germane load, intrinsic load and extraneous load. Germane load is strongly related to the learning process itself; it is the amount of cognitive load that is devoted to mental model construction. Intrinsic load is strongly related to the complexity of the content to be learned; it is defined in terms of the number of task elements and their interrelations. Extraneous load summarizes cognitive load that is not relevant or even interferes with the instructional material. A key aspect of the theory is that the three sources of cognitive load are additive. This means that the enlargement of one type of cognitive load reduces the amount of working-memory capacity that will be available for the processing of the two other sources. Several empirically validated ways for eliminating cognitive overload by reducing either extraneous cognitive load (Mayer, 2005b) or intrinsic cognitive load (Mayer, 2005a; see also Gerjets, Scheiter, and Catrambone, 2004; van Merriënboer, Kirschner, and Kester, 2003) have been described in the

literature. Sweller(2003, p. 168) states “that most cognitive load effects do not vary germane cognitive load directly but rather indirectly by reducing extraneous cognitive load and so freeing memory capacity for an increase in germane cognitive load” (Sweller, 2003, p. 168).

### 4.30. JORDAN’S RATIONAL EPISTEMOLOGY

According to Thomas (2005, p. 408), Jordan (2004) states six assumptions about as part of a tri-partite set of principles for evaluation SLA theories:

- The ‘minimally realist epistemology’ that an external world exists and can be studied;
- That research cannot be separated from theory;
- That theories explain phenomena;
- That research attempts to solve problems;
- That a unique scientific method cannot be formalized; and
- That we need many theories, not a single paradigm.

Then Jordan (2004, cited in Thomas, 2005, p. 408) enumerates five criteria for evaluating theories: *1-be coherent, cohesive, and clear; 2-have empirical content; 3-be fruitful; 4-be broad; 5-be simple*. And thirdly, Jordan (2004, cited in Thomas, 2005, p. 408) enumerates six practices and characteristics to be avoided as indicative of pseudoscience: 1-too-casual approach to evidence; 2-lack of falsifiability; 3-failure to explain; 4-attempts to derive writers’ ‘real’ meanings by interpreting their language; 5-refusal to acknowledge criticism; and 6-predilection for obscure prose.

According to Thomas (2005), what Jordan proposed a pathway for future theory construction in the field of SLA: Jordan presents his Guidelines as a tool for discerning what works and what does not among attempts to theorize SLA. In his opinion, scholars who accept the Guidelines form a research community whose business it is to create more- and more daring and varied-theories and then to submit those theories to rigorous critique according to rationalist principles.

### 4.31. ECOLOGICAL VALIDITY HYPOTHESIS

According to which the processing of both grammatical and ungrammatical sentences proceed by reference to the same set of cues and processing patterns. It might be further argued that SLA take place as a result of ‘utterance processing’ rather than ‘sentence processing,’ the distinguishing



feature being that utterances are contextualized whereas sentences are not. Utterance processing involves pragmatic procedures, which are ignored in the kind of sentence-processing tasks on which the CM has relied.

#### **4.32. CRITICAL PERIOD HYPOTHESIS (CPH) AND SENSITIVE PERIOD HYPOTHESIS**

The claim that there is a biological timetable before which and after which language acquisition, both first and second, is more successfully accomplished. It is a construct often discussed in the L1 and L2 literature as a potential explanation for why older learners have more apparent difficulty learning a (second) language than younger learners. The term ‘critical period’ is used in biology to refer to a phase in the development of an organism during which a particular capacity or behavior must be acquired if it is to be acquired at all. An example typically cited is that of imprinting in certain species. Thus, for instance, immediately after hatching, ducklings follow and become irreversibly attached to the first moving object they perceive—usually their mother. This following behavior occurs only within a certain time period, after which the hatchlings develop a fear of strange objects and retreat instead of following. Within these time limits is what is seen as the critical period for the following behavior. Another example is provided by the acquisition of birdsong: for instance, if a young chaffinch does not hear an adult bird singing within a certain period, the bird in question will apparently never sing a full song. If language acquisition in human beings is constrained by the limits of a critical period on this kind of definition, the implication is that unless language acquisition gets underway before the period ends, it simply will not happen. There may also be an implication that, even if language acquisition begins within the critical period, it does not continue beyond the end of that period and that additional languages acquired beyond the critical period will not ever be completely or ‘perfectly’ acquired.

CPH was first related to language development by Penfield and Roberts and later by Lenneberg who argued that the human brain loses its capacity for language learning as maturation proceeds. Penfield and Roberts argued that after the age of nine, the human brain becomes ‘progressively stiff’ while Lenneberg argued that the critical period for language learning was between the ages of 2 years and puberty, a period of time which corresponds to when brain function becomes associated with specific brain regions. Singleton has demonstrated that there are many different versions of the



CPH and many disagreements in both the L1 and L2 literature concerning whether it is applicable either to L1 or L2 development, and when the onset and the offset of the critical period might be for different aspects of linguistic knowledge.

The term sensitive period has often been used in lieu of critical period to accommodate the idea that unlike other animal learning paradigms, human language development (either L1 or L2) does not seem to be subject to such a tightly defined time frame but rather suggests a time frame where the effects of a particular stimulus (i.e., linguistic environment) on behavior (i.e., learning) are particularly strong. In the sensitive period formulation, the sensitivity does not disappear at a fixed point; instead, it is thought to fade away over a longer period of time, perhaps covering later childhood, puberty, and adolescence. In other words, the critical period represents a well-defined window of opportunity, whereas the sensitive period represents a progressive inefficiency of the organism. Such a suggestion acknowledges that certain language skills are acquired more easily at particular times in development than at other times, and some language skills can be learned even after the critical period, although less easily. It seems reasonable to deduce from research that age does have an influence on L2 development, but the nature of influence will depend on which intake factors, when, and in what combination, are brought to bear on the learning experience of an individual learner.

#### **4.32.1. Age and Second Language (L2) Learning**

Learner's differences as well as age, gender, proficiency level, and so on have a considerable role in the process of language teaching and learning. Theoretically and practically, learners' age is determined as one of the influential and crucial issue in the area of second or foreign language learning (Munoz, 2010, as cited in Barjesteh and Farsi, 2018). He also mentioned that the age impacts have been the research object basically in natural contexts where the immigrants' proficiency level in the TL has been considered on the foundation of their age of arrival in the ESL and EFL communities. According to Torras, Tragant, and García (1997), the general idea relating to the age at which children should start learning a foreign language in schools is impressively affected by findings gained in naturalistic language learning contexts. The effects of age on different fields of language learning as well as main skills and sub-skills have been taken into account (Sadeghi and Taghi Attar, 2013; as cited in Barjesteh and Farsi, 2018).

Fossilization is a feature of 2<sup>nd</sup> language learning. Only in exceptional cases of deprivation do we have fossilization in 1<sup>st</sup> language. The phenomenon has been explained by a variety of reasons: amount of input, availability of UG, different cognitive capabilities, IDs. Among IDs, age had an influence on SLA. Few of the research areas are:

1. **Age and CPH (Critical Period Hypothesis/Sensitive Period):** Assumption is early start will end to native-like competence (after the age of puberty it is difficult/impossible to learn a 2<sup>nd</sup> language /strong version says it is impossible)-Sensitive period of long assumes a linear decline rather than salient start of finish.
2. **Age and Speed of Learning:** CPH has been refuted by Neufeld saying that under the right condition, adults can achieve native-like ability in pronunciation. Children learn implicitly, adult learn explicitly. Children learn better adult learn faster. Children can outperform adults in terms of ultimate learning. In formal L2 adults outperform children because of superior cognitive ability for problem solving. Adult and children learn similarly if they should have an equal amount of time and exposure. Age and foreign accent: Followers of CPH argue that native-like ultimate attainment is possible only if the age of acquisition be within a certain period, depending on the domain of Language (pronunciation or morphosyntax)-this claim has not been supported in literature.
3. **Age and UG:** Age difference seems to reflect more the situation of learning than a capacity for learning. Misconceptions: (a) adult cannot master foreign language, wrong, (b) language proficiency is related to brain functioning (this is not the case, though), (c) adult frequently fail to learn an L2 (wrong, if they should have motivation, commitment, and environment support they develop native-like competence). Competition hypothesis (learners after puberty have access to innate acquisition system which competes with general cognitive system) vs. FDH (no access to UG for adults, L2 learning after the age of puberty is effortful).

#### **4.32.2. Instrumental Conditioning of Thorndike and Classical Conditioning of Pavlov**

Thorndike's research was somewhat different from that of Pavlov. His interest lied in the reinforcement, a phenomenon which strengthened or weakened

the stimulus-response (S-R) bond. Thorndike believed that if we reward a correct response, it will strengthen that behavior, and if we ignore it, it will weaken it. Some people see *reinforcer* as unconditional stimulus (food), but US precedes the response, whereas *reinforcer* is provided after the response. In other words, obtaining a *reinforcer* is conditional on the response and the stimulus is the puzzle box situation. There is a great difference between classical conditioning of Pavlov and instrumental conditioning of Thorndike, though in both kinds of learning we see the phenomena of *practice*, *extinction*, and *spontaneous recovery*. The argument goes like this: Pavlov's dog did not learn to salivate to the bell. That was an automatic reflex. Whereas in instrumental conditioning of Thorndike and later on operant conditioning of Skinner, the cat learns to unlatch the case and the reward comes after the behavior is performed.

#### 4.32.3. The Principles of Thorndike for Education

The *law of effect* which suggests that reinforcement strengthens the association between stimulus and response and therefore, it is necessary for learning, the *law of exercise* emphasizes the role of practice though later on Thorndike argued that only rewarded exercise produced learning, and the *principle of belongingness* which states that certain things are easier to associate than others. The principle of belongingness was first suggested by Gestalt psychologists and later on played a major role in theories of learning and memories. Thorndike accepted this principle with reluctance because it seemed to involve elements of cognitive process forming an association.

#### 4.32.4. Hull's Behavior Theory

What Hull was interested to do was to develop a theory to bring together the classical and instrumental conditioning to explain both human and animal behavior. In classical conditioning stimulus leads directly to response. But, Hull while accepting the law of effect of Thorndike that reinforcement is a necessity for learning (he called this *habit strength*), suggested that behavior is not simply a function of *habit strength*: a satiated rat (which is no more hungry) after many reinforcing experiences would no longer run the maze for food. He proposed that a *drive* state of organism was an energizer for habits. For him, even habit strength and drive were not enough for behavior: incentive motivation—a measure of the amount and delay of reward—is also necessary for the production of behavior.

#### 4.32.5. Skinner's Operant Conditioning

Skinner's major contribution was his study of instrumental conditioning, what he preferred to call *operant conditioning* in which the behavior of the subject determines the response to the subject's own action (Skinner, 1938 cited in (Jordan, A., Orison, C., Stack, A., 2008)). Skinner was the first to demonstrate how behavior modification was a natural result of social interactions and how it shaped behavior. Example from everyday life activities are: (i) when we want to enter the building, we hold the door for the next person to come and he or she thanks us, (ii) when an elderly is carrying a heavy item, we tend to offer for help, or (iii) a mother asks her teenager to help her to clear the table and she does quickly and she thanks her. These and so many other examples are all examples of what Skinner regarded as operant conditioning. He showed that organisms operate on the environment and, through their interactions, discover stimuli that may be rewarding, punishing, or of no consequence. Rewarding stimuli causes the behavior to be repeated, punishments decrease behaviors, and those with no consequences produce no behaviors.

One of the typical experiments of Skinner was his scheduled reinforcement experiments. He introduced two types of reinforcement, continuous, and variable reinforcement. In continuous reinforcement, every correct response is reinforced, but in variable reinforcement, only some are reinforced. He found that the variable reinforcement leads to steadier response rates because of the possibility that the next response will be rewarded. One important practical knowledge emerged from Skinner's experiments is the concept of response *shaping*. That is an already existing behavior which can be gradually shaped into desired form by suitable reinforcement schedules.

#### 4.32.6. Bloomfield Account of Language

Bloomfield's account of language is behaviorist because he believes that linguistic expressions are used in terms of situations which cause them to be uttered. These situations are playing the role of stimuli. For example, we use the term *water* when we are thirsty and when we are handed in a glass of water, we are reinforced and are likely to produce phonetically similar utterance in the future. This, of course, has implications for language learning. The child begins imitating sounds of language used by adults around them. If adult recognize the sounds as being similar to one of their speech sounds, they reward the child (by for example, handing over a ball or a doll). This reward serves as a reinforcement for this verbal behavior, and

the child is likely to produce the same speech sound in future for the same object. So the child's speech will be developed by its results.

### 4.33. SCHEMA THEORY

Hedge (2003) defined content schemata as the background knowledge of a topic which a learner hold in his or her mind and which assists in the interpretation of a text (p. 408). According to Ellis (2003), language users make use of their knowledge of the world to help them comprehend texts. Research in cognitive psychology has shown that learners possess schemata, i. e. mental structures that organize their knowledge of the world which they draw on in interpreting texts (p. 41). Brown (2001) also stated that a text does not by itself carry meaning. The reader brings information, knowledge, emotion, experience, and culture, to the printed word (p. 300).

Various terms have been used to refer to the information shared and drawn upon by people when they communicate with each other. Some of these terms are 'shared knowledge,' 'mutual knowledge,' 'common knowledge,' 'background knowledge,' 'common ground,' 'mutual beliefs,' 'shared beliefs,' 'mutual suppositions,' 'presuppositions,' etc. The plethora of terms used reflects the current state of interest expressed by various scholars in this 'common knowledge/belief' which people seem to draw upon in helping them to express them as well as to understand each other. The plethora of terms used also reflects a general confusion of the terminology (Lee, 2001).

By referring to the above points, Lee (2001) proposed a definition for background knowledge. Her believed that *Common* (or *background*) knowledge is that information which members of a particular community assume to be held common by virtue of the fact they have very similar background or upbringing. For example, you accept the information that London is in the south of Britain while Edinburgh is to the north to be common knowledge between your brother (a Singaporean who has never been to Britain) and you, even though we have never talked about the relative locations of the two cities before. The reason is because we have very is a theory introduced by Bartlett that in comprehending language people activate relevant schemata allowing them to process and interpret new experiences quickly and efficiently. A schema (plural: schemas or schemata) is a complex knowledge structure which groups all that an individual knows about or associates with a particular concept. As an example, an adult in Western society has a schema for *restaurant* which entails: waiters/waitresses, a meal (not a snack), a meal eaten on the premises, a main course with optional first course and dessert,

menus, a bill, a chef (unseen), cutlery, glasses, napkins, etc. This begins as *episodic* knowledge based on individual experiences of restaurants but turns into *semantic* knowledge as the individual's experience of restaurants grows. When a reader encounters the word *restaurant*, they access this schematic knowledge. It enables them to build a richer context than a writer provides; indeed, the writer can assume that the schema is shared with the reader, and is thus spared the need to go into excessive detail. Schematic knowledge also enables the reader to anticipate events and ideas which might occur later in the text and to relate incidents in the text to what happens in normal life. Schemas which supply background knowledge to the interpretation of a text are sometimes referred to as *content schemas*. The reader's ability to draw upon one may depend upon having a clearly established context for the text in question. A well-known experimental passage described how to use a washing machine, but the schema could not be accessed without the assistance of an explanatory title.

Studies of reading and listening sometimes refer to *formal schemas*, which reflect previous experience of a text type or genre. Thus, in reading a scientific paper, we expect it to contain an abstract, a review of the literature, a presentation and analysis of data, etc. This type of schema also provides expectations about style and register. As well as referring to long-term knowledge structures, the term 'schema' is sometimes used more specifically to refer to the *meaning representation* that a reader or listener builds up while processing a particular piece of discourse? We approach a text with certain expectations about what it will say, which we derive from the title or from the purpose of the text; these enable us to develop a text-specific schema even before we read. As we read, we revise and add to the initial schema. Schemas vary from one language user to another, and can be modified *ad hoc* to deal with a current situation. There are said to be three ways in which they can be changed. *Tuning* involves small adjustments made temporarily in order to confront immediate needs. *Accretion* modifies a schema gradually but permanently as new information is acquired or as repeated examples of contrary evidence accumulates. Thus, a child might have to adjust its category of *duck* to exclude birds that it has come to recognize as belonging to the category *swan*. *RESTRUCTURING* occurs when a sudden insight or new piece of knowledge leads to a radical reorganization of existing knowledge structures. Associated with Schema Theory are two other types of stored knowledge.

A *frame* is a schema with optional slots. The frame for *ship* provides us with the information 'large means of transport floats on sea, manned by

sailors.’ We then use information from the text we are reading in order to fill empty slots relating to purpose (*warship* vs. *ferry* vs. *merchant ship*), power (*diesel* vs. *steam* vs. *sail*), color, destination, etc. If the information is not provided, we fill the slots with default values. In the absence of further information, our slots for *ship* would probably be filled out with passengers, a funnel, and a dark color rather than guns, sails, or bright red.

A *script* is a sequence of activities associated with a stereotypical situation. A restaurant script entails a particular ritual (W = waiter, C = customer): W greets C, C asks if there is a table, W shows C to the table, W presents menu, W asks what C wants to drink, C orders first two courses of meal. Scripts provide a framework for many everyday events and permit speakers and writers to adopt a kind of shorthand. If we read *Helen ate in a restaurant*, we can supply for ourselves the details of what happened without having to have them spelt out.

#### 4.34. LINGUISTIC IMPERIALISM (LINGUISCISM)

The theory that languages may be seen as occupying a *dominant or dominated* role in a *society*. It is argued that English plays a dominant role internationally and plays a role in maintaining the *economic and political dominance* of some societies over others. Because of the role of English as the dominant international language, many other languages have been prevented from going through processes of development and expansion. The spread of English is viewed as imposing aspects of Anglo-Saxon Judaeo-Christian culture and causing a threat to the cultures and languages of non-English speaking countries.

##### 4.34.1. World Englishes

A term proposed by *Kachru* to refer to the fact that there are multiple and varied models of English across cultures and that English is not limited to countries where it has traditionally been regarded as a mother tongue. World Englishes thus includes British, American, Australian as well as other mother tongue Englishes but also newer varieties of English that have emerged in countries that were once colonies and dependencies of the United Kingdom or the USA. These new Englishes are seen to take their place as legitimate varieties of English fulfilling distinctive functions in pluralistic societies such as Singapore, India, Pakistan, the Philippines, Nigeria, and Fiji (Phillipson, 1992).



### 4.35. WIENER'S ATTRIBUTION THEORY

Based on the seminal work of psychologist Bernard Weiner (1986, 1992, 2000), attribution theory focuses on how people explain the causes of their own successes and failures. Weiner and others (Bandura, 1993; Williams and Burden, 1997; Slavin, 2003; Dörnyei and Ushioda, 2011) describe attribution theory in terms of four explanations for success and/or failure in achieving a personal objective: (1) *ability*, (2) *effort*, (3) *perceived difficulty of a task*, and (4) *luck*. A theory that focuses on how people explain the causes of their own successes and failures. Attribution theory is described in terms of four explanations for success and/or failure in achieving a personal objective: *ability*, *effort*, *perceived difficulty of a task*, and *luck*. Two of those four factors are internal to the learner: ability and effort; and two are attributable to external circumstances outside of the learner: task difficulty and luck. Learners tend to explain, that is, to attribute, their success on a task on this four dimension be cited. Thus, failure to get a high grade on a final exam in a language class might for some be judged to be a consequence of their poor ability or effort, and by others to difficulty of exam, and perhaps others to just plain old bad luck.

This is where self-efficacy (i.e., belief in one's own capabilities to successfully perform an activity) comes in. If a learner feels he is capable of carrying out a given task, in other words, a high sense of self-efficacy, an appropriate degree of effort may be devoted to achieving success. Falling short of one's personal goals may then be attributable to not enough effort expended; people derive their sense of self-esteem from the accumulation of experiences with themselves and with others and from assessments of the external world around them. Three general levels of self-esteem have been described in the literature to capture its multidimensionality:

1. **General Self-Esteem (Also Global Self-Esteem):** It is said to be relatively stable in a mature adult, and is resistant to change except by active and extended therapy. It is the general or prevailing assessment one makes of one's own worth over time and across a number of situations. In a sense, it might be analogized to a statistical mean or median level of overall self-appraisal.
2. **Situational Self-Esteem (Also Specific Self-Esteem):** It refers to one's self appraisals in particular life situations, such as social interaction, work, education, home, or on certain relatively discretely defined traits, such as intelligence, communicative ability, athletic ability, or personality traits like gregariousness,



empathy, and flexibility. The degree of specific self-esteem a person has may vary depending upon the situation or the trait in question.

3. **Task Self-Esteem:** It relates to particular tasks within specific situations. For example, within the educational domain, task self-esteem might refer to one subject-matter area. In an athletic context, skill in a sport—or even a facet of a sport such as netplay in tennis or pitching in baseball— would be evaluated on the level of task self-esteem. Specific self-esteem might encompass SLA in general, and task self-esteem might appropriately refer to one's self-evaluation of a particular aspect of the process: speaking, writing, a particular class in a L2, or even a special kind of classroom exercise (Brown, 2014, pp. 145, 146).



## CHAPTER 5

# HYPOTHESES AND TAXONOMIES IN SECOND LANGUAGE ACQUISITION

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## 5.1. THE INPUT HYPOTHESIS

According to Monitor Theory, humans acquire language in only one way—by understanding messages in the L2 or, as Krashen says, by receiving comprehensible input, another central construct in the theory. This aspect of Monitor Theory is referred to as the *Input Hypothesis*. Comprehensible input is input that contains language slightly beyond the current level of the learner's internalized language. In defining comprehensible input, Krashen introduces two more constructs:  $i$ , which he defines as a learner's current level of proficiency, and  $i + 1$ , which is a level just beyond the learner's. Krashen considers input that is  $i + 1$  to be the most valuable data for SLA. It is not clear in Monitor Theory exactly what 1 is, or how either it or  $i$  is identified. In practical terms, however, their precise definitions are unimportant since these levels of input are never isolated from the general input. Krashen specifies that *roughly tuned input* will automatically include several levels of input, including  $i + 1$  and probably  $i - 1$  and  $i + 2$  as well. In other words, as long as a teacher or native speaker (NS) does not speak extremely quickly, using very complex language to a low-level learner, the presence of comprehensible input is probably assured. Learners will naturally access and use what they need, allowing acquisition to take place spontaneously as long as they are exposed to this rich and comprehensible input. This is most likely to occur when communication consistently focuses on meaning rather than form. This means that not only are instruction about grammatical rules of little use, but according to this theory, output (production) activities are not of much value either. Production is considered the result, rather than the cause, of acquisition. Forcing learners to produce language before they are ready can even inhibit the acquisition process by taking learners' focus away from comprehension and processing of input. Rich input, combined with the power of the language acquisition faculty, is all that is needed to promote successful language acquisition. Indeed, Krashen has claimed that comprehensible input is not just a necessary condition for SLA, it is the sufficient condition. In the presence of comprehensible input, SLA is an inevitable result.

### 5.1.1. Criticisms of the Input Hypothesis

Krashen's Input hypothesis has been frequently criticized for being vague and imprecise: how do we determine level  $i$ , and level  $i + 1$ ? Nowhere is this vital point made clear. Moreover, Krashen's claim is somewhat circular: acquisition takes place if the learner receives comprehensible input, and

comprehensible input (it is claimed) has been provided if acquisition takes place. *The theory becomes impossible to verify, as no independently testable definitions are given of what comprehensible input actually consists of, and therefore of how it might relate to acquisition* (relation between comprehension and acquisition is not clearly spelled out). Nor, of course, does the theory specify the internal workings of the ‘language acquisition device (LAD)’ where acquisition actually takes place-this remains an opaque black box.

Krashen’s hypotheses had some intuitive appeal to language teachers: They were, in the words of H. L. Mencken, “short and simple,” easy for teachers to grasp and faithfully follow. Many researchers, however, with Mencken, have hotly disputed Krashen’s claims as “wrong” (McLaughlin, 1978; Gregg, 1984; White, 1987; Brumfit, 1992; Swain and Lapkin, 1995; de Bot, 1996; Gass and Selinker, 2001; Swain, 2005). Let’s look briefly at the criticisms.

1. **Consciousness:** Barry McLaughlin (1978, 1990a) sharply criticized Krashen’s fuzzy distinction between subconscious (acquisition) and conscious learning) processes, claiming that an SLA theory that appeals to conscious/subconscious distinctions is greatly weakened by our inability to identify just what that distinction is.
2. **No Interface:** Kevin Gregg (1984) eloquently refuted the claim of no interface-no overlap-between acquisition and learning. Arguing that there is no evidence to back up the claim, Gregg showed that implicit explicit learning can indeed complement each other.
3. **No Explicit Instruction:** Studies repeatedly showed that Krashen’s zero option” (don’t ever teach grammar) cannot be supported (Long, 1983, 1988; Ellis, 1997; Lightbown and Spada, 1990; Buczowska and Weist, 1991; Doughty, 1991; Doughty and Willia, 1998; Swain, 1998). Explicit strategy training (Cohen, 2011; Oxford, 2011) and FFI.
4. **i +1:** As shown in decades of learning psychology (Ausubel, 1968) and in Vygotsky’s (1987) ZPD, the notion of  $i + 1$  is simply a reiteration of a general principle of learning. Gregg (1984) and White (1987) also noted that we are unable to define either  $i$  or  $1$ .
5. **Speech will Emerge:** In claiming that speech will naturally emerge when the learner is “ready,” the input hypothesis

diminishes the learner's own initiative in seeking input. Seliger (1983) distinguished between high input generators (HIGs), learners who are good at initiating and sustaining interaction, and low input generators (LIGs) who are more passive, reticent, and less assertive. HIGs were superior learners in Seliger's (1983) study (Ellis, 2008, p. 251; Brown, 2014, p. 289, 290).

## 5.2. SWAIN'S OUTPUT HYPOTHESIS (OH)

Doubts about the validity of the Input Hypothesis stressing the importance of comprehensible input as the cause of language acquisition were raised after a thorough analysis of the outcomes of immersion projects. It turned out that, despite the fact that immersion students were exposed to copious quantities of comprehensible input, they displayed considerable difficulties in the area of language production concerning accuracy and appropriacy. Commenting on the results of the French immersion program in Canada, Swain (1985) pointed out that lower score of immersion students stemmed from the fact that they did not speak as much French as English. What is more, their French teachers, concentrating on message conveyance, did not require or "push" them to use the language that would be accurate, appropriate, and coherent. In the light of the fact that Krashen's (1985) views on the role of comprehensible input in language learning were not able to account for the weaknesses of immersion projects, alternative explanations were sought. One such attempt was the OH formulated by Swain (1985) following informal and formal observations conducted in immersion classrooms. The main tenet of the OH is the assumption that, under certain conditions, language production (i.e., speaking or writing) is a part of the process of language learning. According to Swain (1995) output plays the following functions in the acquisition of the TL:

1. **Noticing/Triggering Function:** This function is manifested if learners, in the course of vocal or sub-vocal language production, discover that they do not know how to express the intended meaning. As Swain (2005, p. 474) puts it, "(...) the activity of producing the TL may prompt second language (L2) learners to recognize consciously some of their linguistic problems." The importance of this function lies in the fact that such awareness triggers cognitive processes responsible for generating and consolidating linguistic knowledge. While producing the language, learners not only notice that they are not able to express

what they want, but they may also notice differences between the TL form and the form they produce themselves. However, it needs to be remembered that attention to a given form may differ in its length and depth. For successful acquisition, it is necessary both to pay attention to forms and also the relationships that exist among them and regulate the ways in which these forms make a unified whole. On the basis of his study on relativization, Izumi (2002, p. 571) concluded that it was output processing that enabled learners to conceive the underlying structure of the form in question, which was accomplished in the course of grammatical encoding operations. Such operations, whose function is to stimulate integrative processes and connect separate elements, are performed during the production, not the comprehension process. The effects of grammatical encoding are quite different from those of grammatical decoding since the latter do not result in reorganizing of the form-meaning mappings learners have established. As Swain (1995, p. 128) states, "Output may stimulate learners to move from the semantic, open-ended non-deterministic, strategic processing prevalent in comprehension to the complete grammatical processing needed for accurate production. Output, thus, would seem to have a potentially significant role in the development of syntax and morphology."

2. **Hypothesis Testing Function:** Corder (1981) proposed that learners formulate hypotheses concerning the structural features of the target language (TL) on the basis of the data derived from the input they are exposed to. The newly formed hypotheses are confirmed if the forms produced on their basis are accepted and do not lead to a breach of communication. They are disconfirmed, in turn, if the message is misunderstood or the utterance corrected (Ellis, 1994, p. 352). The proponents of the OH (Swain, 1995; Loewen, 2002; Mackey, 2002) observe that changes in the output result from different forms of feedback: clarification requests, confirmation checks, or incidental focus on form (FonF). The key assumption underlying the utility of output restructuring is that it constitutes part of the language learning process. Swain (2005) cites the findings included in the unpublished dissertations of Mackey (2002) and Storch (2001), who attempted to establish whether the production of modified output facilitates L2 learning. In the analysis she presents, the learning effect of output production

is explained by the fact that output stimulates processes involved in language learning and that modified output has priming effects on subsequent output. Since priming leads to the repetition of a syntactic form, it may result in automatic retrieval of that form.

3. **Metalinguistic/Reflective Function:** The principal assumption here is that *L2 learning can be mediated by the language used to reflect on the language produced by the self and others*. At the beginning, language is regulated by others, and only at a later time do the regulatory mechanisms become internalized by an individual. Thus, engagement in a conversation, which entails internalization of operations on language data into one's own mental activity, becomes an act of learning. The problem-solving dialog performed by learners collaboratively in an attempt to solve a linguistic problem becomes a part of an individual student's mental reality and helps them deal with problems on their own. As Swain (2005, p. 478) states, "Collaborative dialog is thus dialog in which speakers are engaged in problem solving and knowledge building—in the case of L2 learners, solving linguistic problems and building knowledge about language." The very act of articulation or verbalization of thought is believed to reshape experience. What is more, the newly formulated idea is now available for further reflection by others or the self. The questions or doubts it raises allow elimination of possible inconsistencies and gradual refinement of ideas. Language production thus becomes a potent cognitive tool that enables internalization and mediates thinking (Swain, 2005, p. 478; Mystkowska-Wiertelak and Pawlak, 2012, pp. 54, 55; VanPatten and Williams, 2015, pp. 184, 186).

### 5.3. SWAIN'S COMPREHENSIBLE OUTPUT HYPOTHESIS (OH)

Input alone is not sufficient for acquisition, because when one hears language one can often interpret the meaning without the use of syntax. For example, if one hears only the words *dog, bit, girl*, regardless of the order in which those words occur, it is likely that the meaning (*the dog bit the girl*) is the one that will be assumed rather than the more unusual *the girl bit the dog*.

Similarly, if one hears a sentence such as *this is a bad story*, one can easily fill in the missing article. Little knowledge, other than knowing the



meanings of the words and knowing something about real-world events, is needed. This is not the case with language production or output, because one is forced to put the words into some order. Production then “may force the learner to move from semantic processing to syntactic processing” (Swain, 1985, p. 249).

In fact, the impetus for Swain’s original study was the lack of L2 development by immersion children even after years of academic study in that L2. It is trivial to state that there is no better way to test the extent of one’s knowledge (linguistic or otherwise) than to have to use that knowledge in some productive way—whether it be explaining a concept to someone (i.e., teaching) or writing a computer program, or, in the case of language learning, getting even a simple idea across. However, output has generally been seen not as a way of creating knowledge, but as a way of practicing already existing knowledge. In other words, output has traditionally (*not from an Interactionist perspective to which Swain’s OH is closely related*) been viewed as a way of practicing what has previously been learned. This was certainly the thrust behind early methods of language teaching in which the presentation-practice (i.e., drill, and repetition) mode was in vogue. A second traditional role assigned to output was that it was the way in which additional (and perhaps richer) input could be elicited. The idea that output could be part of learning was not seriously contemplated prior to Swain’s important paper in 1985, in which she introduced the notion of comprehensible output or “pushed” output. What is meant by this concept is that learners are “pushed” or “stretched” in their production as a necessary part of making themselves understood. In so doing, they might modify a previous utterance, or they might try out forms that they had not used before. Comprehensible output refers to the need for a learner to be “pushed toward the delivery of a message that is not only conveyed, but that is conveyed precisely, coherently, and appropriately” (Swain, 1985, p. 249). In a more recent explication of the concept, Swain claimed that “output may stimulate learners to move from the semantic, open-ended, nondeterministic, strategic processing prevalent in comprehension to the complete grammatical processing needed for accurate production. Output, thus, would seem to have *a potentially significant role in the development of syntax and morphology*” (Swain, 1995, p. 128; Gass and Selinker, 2008, pp. 325–327).

## 5.4. INTERACTION HYPOTHESIS (IH)

Long went on to propose his interaction hypothesis (IH) as an extension of Krashen's original Input hypothesis. For his own doctoral research (Long, 1980, 1981, 1983a), Long conducted a study of 16 native speaker-native speaker and 16 native speaker-non-native speaker (NNS) pairs, carrying out the same set of face-to-face oral tasks (informal conversation, giving instructions for games, playing the games, etc.). He showed that there was little linguistic difference between the talk produced by native speaker-native speaker and native speaker-NNS pairs, as shown on measures of grammatical complexity. It is evident in Long's eventual reformulation of the IH (1996), which places much more emphasis on linking features of input and the linguistic environment with '*learner-internal factors*,' and explaining how such linkages may facilitate subsequent language development (Long, 1996, p. 454). Long's 1996 version of the IH reads as follows:

It is proposed that environmental contributions to acquisition are mediated by selective attention and the learner's developing L2 processing capacity, and that these resources are brought together most usefully, although not exclusively, during negotiation for meaning. Negative feedback obtained during negotiation work or elsewhere may be facilitative of L2 development, at least for vocabulary, morphology, and language-specific syntax, and essential for learning certain specifiable L1-L2 contrasts (Long, 1996, p. 414).

This new version of the hypothesis highlights the possible contribution to L2 learning of negative evidence as to the structure of the TL, derivable from environmental language (i.e., from foreigner talk (FT) discourse). It also highlights the attempt to clarify the processes by which input becomes intake, through introducing the notion of selective attention. These concepts are also repeatedly referred to, in current discussions of output and its contribution to language development (Mitchell and Myles, 2004, pp. 173, 174).

## 5.5. UPDATED VERSION INTERACTION HYPOTHESIS (IH)

In contrast to the early version of the IH, which simply postulated an effect for comprehensible input, its updated version sought to account for how internationally modified input contributes to acquisition by specifying the learner internal mechanisms involved. Interactionally modified input works

for acquisition when (1) it assists learners to notice linguistic forms in the input (noticing hypothesis) and (2) the forms that are noticed lie within the learner's processing input and capacity (input hypothesis). The updated version of the IH also afforded a much richer view of how negotiation can assist language learning. As in the early version, negotiation was seen as providing learners with comprehensible input, thereby supplying them with positive evidence (i.e., models of what is grammatical and acceptable-Long, 1996, p. 413). The later version of the IH also posits two other ways in which interaction can contribute to acquisition: through the provision of negative evidence and through opportunities for modified output (the OH). Long (1996) defined negative evidence as "input that provides direct or indirect evidence of what is ungrammatical" (p. 4). It arises when learners receive feedback on their own attempts to use the L2. Gass (1997) suggested that the negative evidence learners obtain through negotiation serves to initiate interlanguage (IL) change but that permanent restructuring may only take place after an 'incubation period' during which the learner has access to input that provides further evidence of the need for the change. In other words, the effects of negative evidence may be delayed. Modified output occurs in cases where there is learner uptake-with-repair. In positing a role for this, Long was incorporating Swain's (1985, 1995) Comprehensible OH. The updated version of the IH is also implicated in Long's views about FonF' (Long, 1991; Long and Robinson, 1998). FonF constitutes a type of form-focused instruction that contrasts with FonF. In FonF instruction, attention to form arises out of meaning-centered activity derived from the performance of a communicative task. Focus-on-forms instruction involves the pre-selection of specific features based on a linguistic syllabus and the intensive and systematic treatment of those features. Here we are concerned with the role that negotiation of meaning and form plays in drawing learners' attention to linguistic forms they are experiencing problems with. Doughty (2001) noted "the factor that distinguishes FonF from other pedagogical approaches is the requirement that FonF involves learners briefly and perhaps simultaneously attending to form, meaning, and use during one cognitive event" (p. 21). One of the chief ways in which this takes place is through recasts. The Teachability Hypothesis is, therefore, in sharp contrast with the IH (both the earlier and the updated versions) since the former states that a structure cannot be successfully taught (in the sense that it will be used correctly and spontaneously in communication) unless the learner is developmentally ready to acquire it while the latter gives a prominent status to the role of instruction in second language acquisition (SLA).

### 5.5.1. The Interaction Hypothesis (IH): The Focus on Input and Feedback

This framework was developed in the early 1980s with the view that comprehensible input is a key factor in L2. The research associated with this framework focused on how input can be made comprehensible. Interaction refers to conversations between learners and other interlocutors, and the IH focuses on how such interactions might affect acquisition by positing that interactions play a central role in SLA processes. They may do so in essentially two ways: (1) by modifying input, (2) by providing feedback related to the linking of meaning and form. Input modification occurs when the interlocutor perceives that the learner does not understand what is being said, and restates something by simplifying, exemplifying, or otherwise altering the original statement. Feedback occurs when the interlocutor uses particular devices to inform the learner about something he or she has said. These include such things as “Do you mean...?,” “I’m sorry. I don’t understand” and “OK. I get it.” According to the IH, both input modifications and feedback can bring something in the input into the learner’s focal attention at a given moment, offering an opportunity to perceive and process some piece of language the learner might miss otherwise. Following is an interaction that occurred in a men’s locker room after a tennis match. The IH makes a number of claims in terms of the role of input, interactional modifications, feedback, and output in SLA.

1. **Input Plays a Crucial Role in Second Language (L2) Acquisition:** Like all mainstream SLA models and theories, the data for learners reside in the communicative language they are exposed to.
2. **Input is Crucial But it is Not Sufficient:** Interaction also plays a key role. Through interactions learners may be led to notice things they wouldn’t notice otherwise, and this noticing can affect acquisition. How learners are led to notice things can happen in several ways, including the following: input modifications—the other speaker adjusts his or her speech due to perceived difficulties in learner comprehension (see caretaker speech); feedback—the other speaker indicates in some way that the learner has produced something non-native-like.
3. **Output is Necessary for the Development of Language:** Output modifications through negotiation of meaning help learners to notice important aspects of the TL.

4. **Negative Feedback Obtained During Negotiation of Meaning Might Facilitate the Acquisition of Vocabulary, Morphology, Syntax, and Pronunciation:** When the learner does not understand the other interlocutor, interactions that elicit negative feedback can have a facilitative role in acquisition. Feedback is seen as a natural part of the conversation and not as error correction (Gass and Selinker, 2008, p. 210; Robinson, 2013, p. 651; VanPatten and Benati, 2015, pp. 76–78, 129, 153, 154).

## 5.6. THE DISCOURSE HYPOTHESIS

Another way of looking at the acquisition of tense/aspect is not to consider lexical meaning, as with the Aspect Hypothesis, but to look at the structure of the discourse in which utterances appear. In general, there are two parts to discourse structure: background and foreground. Foreground information is generally new information that moves time forward. Background information is supporting information. Unlike foregrounded material, it does not provide new information but might serve the purpose of elaborating on the information revealed through the foregrounded material. Within the context of the Discourse Hypothesis, it is claimed that “learners use emerging verbal morphology to distinguish foreground from background in narratives” (Bardovi-Harlig, 1994, p. 43; Ellis, 2008, pp. 254, 255).

## 5.7. ISSUES WITH THE FOSSILIZATION HYPOTHESIS

In hindsight, the original Fossilization Hypothesis is both broad and loose, and is right in some respects but wrong in others. A brief appraisal follows. In its broadest construal, the term “fossilization” refers to unsuccessful L2 learning, with success defined as ‘productive performance in the TL by the L2 learner which is identical to that produced by the NS of that TL’ (Selinker, 1972, p. 223). The term is also broad in that it spans the macro-to-micro spectrum: at the macro end is the notion that the vast majority of L2 learners are destined to fail to master a L2, while at the micro end are two specific behavioral events, backsliding, and regression, both indicative of deterioration in L2 performance. Additionally, the hypothesis is broad because it considers fossilization both phylogenetic, that is, affecting a given interlingual community, and ontogenetic, that is, idiosyncratic. The hypothesis is loosely framed to the extent that it effectively conflates a

process, a product, and a mechanism in a single term, ‘fossilization.’ There is, therefore, much confusion surrounding the term. Consider the following quote from Selinker (1972, p. 221):

What seems to be most promising for study is the observation concerning fossilization. Many IL linguistic structures are NEVER really eradicated for most second-language learners; manifestations of these structures regularly reappear in IL productive performance, especially under conditions of anxiety, shifting attention, and second language performance on subject matter which is new to the learner. It is this observation which allows us to claim that these psycholinguistic structures, even when seemingly eradicated, are still somehow present in the brain, stored by a fossilization mechanism (primarily through one of these five processes) in an IL. (emphasis in the original) Here the polysemous nature of the term ‘fossilization’ cannot be clearer. *First*, fossilization denotes a defective linguistic structure that is never really eradicated, implying a process, a product, and irreversibility. *Second*, fossilization is found in most L2 learners, *children*, and *adults* alike, suggesting pervasiveness. *Third*, fossilization is driven by a *mechanism* stored in the brain, pointing to its *neuro-cognitive* nature. Fossilization is therefore a catch-all term (Birdsong, 2003, 2006), and as a theoretical construct, the term is ambiguous (Han, 1998, 2004, 2011; Long, 2003). Another claim made by the fossilization hypothesis is that the IL system can fossilize in its entirety, resulting in what may be called ‘global fossilization.’ *Both past and current research has consistently converged on the finding that fossilization is local, not global.* In other words, fossilization hits the subsystems of IL only selectively, rather than its gestalt. Based on the aggregate evidence, Han and Odlin (2006, p. 8) concluded that “SLA will never have a global end state; rather, it will have fossilization, namely, permanent local cessation of development.” *Fossilization is permanent, and thus, by definition, cannot be reversed, unlike stabilization*, a term often mistakenly treated as synonymous with fossilization in the SLA literature (Han, 2013, pp. 136–140).

## 5.8. THE NOTICING HYPOTHESIS

A hypothesis that input does not become intake for language learning unless it is noticed, that is, consciously registered (Schmidt, 1990, 2001)—has been around now for about two decades and continues to generate experimental studies, suggestions for L2 pedagogy, and controversy. Schmidt (1990, 1994, 2001) claimed that attention to input is a conscious process. He

viewed *noticing* (i.e., registering formal features in the input) and *noticing-the-gap* (i.e., identifying how the input to which the learner is exposed differs from the output the learner is able to generate) as essential processes in SLA. Specifically, he claims that the only linguistic elements in the input that learners can acquire are those elements that they notice. By *noticing*, Schmidt means that learners are paying attention, that there is some level of awareness in learning. He contrasts this to implicit learning, learning without awareness, subliminal learning, and other scenarios. In many respects, Schmidt's claim is a reaction to Krashen's idea that acquisition involves subconscious learning. Because Schmidt believes in some level of awareness on the part of the learner, he tends to reject a major role for any kind of implicit or unconscious learning. The concept of noticing and the role of noticing are not universally accepted within SLA and remain controversial (Ellis, 2008, p. 265; VanPatten and Benati, 2015, p. 152).

## 5.9. TEACHABILITY HYPOTHESIS

Pienemann developed his processability theory (PT) in order to explain the well-documented observation that L2 learners follow a fairly rigid route in their acquisition of certain grammatical structures. This notion of route implies that structures only become learnable when the previous steps on this acquisitional path have been acquired. For Pienemann, at any given point in time, learners can only operate within their Hypothesis Space, which is constrained by the processing resources they have available to them at that time. This has led him to develop his Teachability hypothesis (Pienemann, 1981, 1987, 1989, 1998), in which he considers the pedagogical implications of the *learnability or processability model*, and draws precise conclusions about how some structures should be taught. The predictions of the teachability hypothesis are as follows:

- Stages of acquisition cannot be skipped through formal instruction;
- Instruction will be most beneficial if it focuses on structures from 'the next stage' (Pienemann, 1998, p. 250).

## 5.10. MARKEDNESS DIFFERENTIAL HYPOTHESIS (MARKEDNESS THEORY/MARKEDNESS HYPOTHESIS/MDH)

In order to explain how markedness affects transfer, Eckman advanced the MDH: those areas of difficulty that a L2 learner will have can be predicted



on the basis of a comparison of the native language (NL) and the TL such that:

- Those areas of the TL that are different from the NL and are relatively more marked than in the NL will be difficult;
- The degree of difficulty associated with those aspects of the TL that are different and more marked than in the NL corresponds to the relative degree of markedness associated with those aspects;
- Those areas of the TL that are different from the NL but are not relatively more marked than the NL will not be difficult. (Eckman, 1977, p. 321).

## **5.11. THE REAL-OPERATING CONDITIONS PRINCIPLE**

We can distinguish two broad types of grammar teaching activities-those that treat grammar as an object to be studied and analyzed and those that treat it as a tool for engaging in effective communication. The former type typically involves contrived examples and inauthentic operations, while the latter strives to achieve either situational or interactional authenticity (Bachman and Palmer, 1996). Our position is that both types of activity are needed- and, indeed, that the former can serve to guide learner performance in the latter. The activities illustrating the Given-to-New Principle and the Awareness Principle in the previous sections have encouraged learners to view grammar as an object, and have been directed at noticing and developing explicit knowledge of form-meaning mappings. We will now consider the case for treating grammar as a communicative tool and suggest ways in which this can be accomplished. Johnson (1988, 1996) noted that cognitive theories of language acquisition emphasize the need for practice in the context of ‘real-operating conditions.’ That is, learners need the opportunity to practice language in the same conditions that apply in real-life situations-in communication, where their primary focus is on message conveyance rather than on linguistic accuracy.

## **5.12. CAPABILITY CONTINUUM PARADIGM**

A variability theory of SLA developed by Tarone to refer to the idea that L2 learners acquire a continuum of grammars for the L2 (which she calls ‘styles’) ranging from the most *informal* or *vernacular style*, to the most *careful style*, used when an L2 speaker is focusing on form, and trying to



be as correct as possible. Tarone refers to this as the capability continuum. The vernacular style is usually the least target-like, but the most internally consistent, while at the other pole the careful style is more target-like, perhaps incorporating grammatical knowledge which has been consciously learned by the L2 speaker. It will also be less internally consistent, involving acquired knowledge, consciously learned knowledge, and perhaps also careful style norms transferred from the L1. According to Tarone, new forms can enter the continuum in two ways: (1) forms may be spontaneously produced first in the vernacular style; it is possible that such forms could gradually spread over time into more and more formal styles. Or (2) new forms may appear first in the most formal style where the learner can pay attention to speech production, and gradually spread over time into less and less formal styles. In the case of (1), there may be a tendency for the new forms to appear in a universal order (Ellis, 2008).

### **5.13. FUNDAMENTAL DIFFERENCE HYPOTHESIS (FDH, NO ACCESS VIEW)**

A hypothesis which claims that first language (L1) acquisition and adult SLA are fundamentally different. The fundamental difference hypothesis (FDH) rests on two related claims. The first is that adult SLA is very different from L1 acquisition. The second is that this difference arises because whereas L1 features make use of their language faculty, adult L2 learners resort to general learning strategies. According to this position, UG is not available to adult L2 learners. L1 and SLA are fundamentally different. Adult L2 learners will normally not be able to achieve full competence and their IL may manifest impossible rules (i.e., rules that would be prohibited by UG). The FDH is predicated upon a number of observations about SLA, among which we highlight the following:

- Children always achieve complete grammatical knowledge of their NL, whereas adult L2 learners seem to rarely achieve full TL competence.
- Unlike first language acquisition, which is uniformly successful across children (i.e., all NSs converge on the same mental representation regarding the formal properties of language), adult L2 learners show considerable variation in their language learning success. In other words, L2 learners vary as to how far they get with an L2 and to what degree they approximate what NSs know about language and can do with it.

- First language acquisition is constrained and guided by innate mechanisms (e.g., UG) and is not really influenced by external factors. SLA, especially with adults, seems to be influenced by: (a) L1 transfer; (b) individual differences (IDs); and (c) social-communicative contexts of learning, among factors.

Proponents of the FDH take the above observations (and others) to mean that at their core, L1 and SLA cannot be the same and thus are different. In particular, the FDH claims that, whereas child L1 acquisition is guided by innate mechanisms, adult SLA is guided by general cognitive learning or problem solving principles and not by any innate linguistic knowledge. Thus, implicit in the FDH is that there is probably a ‘critical period’ for language acquisition, after which such things as UG and other language-specific mechanisms are no longer available for learning language (VanPatten and Benati, 2010).

## 5.14. IMPLICATIONS OF L2 = L1 HYPOTHESIS

L1 = L2 hypothesis was first proposed by Dulay and Burt (1974) when they contended that child SLA is similar to child L1 acquisition. They tried to prove that there exist similar developmental patterns among children with different language backgrounds. As a proponent of L1 = L2 hypothesis Corder (1967, as cited in Johnson, 2004) asserts that: “I propose therefore as a working hypothesis that some at least of the strategies adopted by the learner of a L2 are substantially the same as those by which a L1 is acquired. According to Ellis (2003) SLA is different from L1A in regard to the following:

1. **Mature Conceptual Development:** In L1A the world knowledge and language knowledge develop at the same time when SLA adult learners have already developed a pre-existing conceptual knowledge, and also adult learners are equipped with sophisticated means of thinking and can involve in explicit language learning through more conscious deductions and problem solving.
2. **Language Input:** L1 normally involves natural exposure within situations in which caregivers ‘scaffold’ developments, whereas second or foreign language classroom environment is artificial in providing patterns of exposure, of function, of medium, and of social interaction.

3. **Transfer from L1:** Adult SLA learners have access to their pre-existing L1 knowledge and thus, contrary to children, have mastered lexically specific patterns and abstract syntactic categories in their L1 and can transfer this knowledge to their L2 IL.

According to Ellis (2003), what is similar in L1 and SLA is the fact that both of them develop in the same fashion-from formulae, through low-scope patterns to constructions (abstract schema). On the other hand, the acquisition, processing, and use of formulaic language is the commonality between L1 and L2 learning processes. On the one hand, Bley-Vroman's (1988) FDH stipulates that whereas children are able to acquire a language through almost completely implicit mechanisms, i.e., without reasoning on the language structure, adults, however, have lost the ability of learning a L2 in an implicit way and must, therefore, draw on other capabilities such as problem-solving ability and NL knowledge. On the other hand, Reber (1993) affirms that "implicit learning is the default mode for the acquisition of complex information about the environment." His result tends to prove that adults would be better at implicitly acquiring complex rules without consciously attempting to learn about these rules. Robinson's (1997) Fundamental Similarity Hypothesis confirms Reber's (1993) view that there is no evidence for dissociating between implicit and explicit learning systems in adult SLA" (Robinson, 2005).

Dornyei (2009) proposes a moderate position in considering differences and similarities between L1 and L2. "It is an undeniable fact that both L1 and L2 attainment involve the same TLs and the same learners and therefore commonalities are to be expected. Yet, it is also an undeniable fact that the outcome of the two enterprises is vastly different, which suggests some substantial disparity between the two processes. Over the past decades, the pendulum in SLA research has been swinging between emphasizing the similarities and emphasizing the differences, and by now it is clear that the truth lies somewhere in between the two poles: L1 and SLA share certain underlying psychological processes-for example the method we use for learning new word forms- and the transfer from L1 to L2 knowledge also plays a substantial role in SLA" (Dornyei, 2009, p. 21).

Muller (1998) defines L1 = L2 hypothesis as the idea that the acquisition of a particular language as a second or L1 proceeds in a parallel fashion. She considers this view extremist and proposes IL hypothesis which states that L2 learners develop an IL characteristic of L1, L2, and with independent features.

Much of the works in SLA is driven by the notion that first and SLA involves the same processes, though the differences are also noted in line to salvage the major theoretical claim of L1 and L2 similarities. Fundamental Differences Hypothesis starts from the point that L1 and L2 learning are different in many important ways. First is the ultimate attainment of children and adult. Whereas L1 learning is complete, L2 learning is not only incomplete, but it also has the concept of fossilization. Second is the nature of knowledge the two groups have at the beginning of learning. L2 learners have developed a language and are familiar with the cultural and social rules of one language. This is not the case with L2 learners. Third is the concept of equipotentiality introduced by Schachter (1988). It means that the children are capable of learning any language if they are exposed to, and in fact, there is no difficult language for them. L2 learners may learn some languages faster and easier, i.e., Spanish speakers learning Italian language. The fourth and the last difference is L1 learners will learn their L1 whether they are motivated or not. This is not the case with L2 learners.

The opposing view is the access to UG hypothesis. The common perspective is that UG is constant, UG is distinct from the learner's L1 grammar and finally, UG constrains the L2 learner's inter-language grammars (White, 2003, as cited in Gass and Selinker, 2008). There, white outlines five different positions with regard to the initial state of L2 learning. They are: Full Transfer / Full Access (assuming that the starting point is the L1 grammar), Minimal Trees (L1 and UG are available but the L1 grammar does not have functional categories, and these categories are not available from any source. These categories will emerge in response to input), Valueless Features (there is weak transfer and L1 is initial point), Initial Hypothesis of Syntax (the starting point, as in child language acquisition is UG), and Full Access without transfer (here too, the starting point is UG but there is a disconnection between the L1 and grammar of L2. This position predicts that L1 and SLA will proceed in a similar fashion and will end up in the same point). The first three takes the L1 as the basis of the initial state and the second two take UG as the initial state.

There are two ways of viewing this. One view sees learning a L2 as a cumulative process, which builds on one's knowledge of the L1. All things being equal, learning a language closely related to one's NL is easier than learning a language that is radically different, e.g., a native English speaker would find learning Spanish easier than learning Chinese, not only because of linguistic features (e.g., atonal vs. tonal; inflectional vs non-inflectional), but also because of differences in their writing systems (alphabetic vs.

pictographic). A second view sees an equivalent relationship between learning an L2 and L1. This is known as the L2 = L1 hypothesis. Research evidence shows that L2 learners, regardless of what NL they speak, tend to make similar errors and go through a similar process of language development. This is similar to L1 acquisition in that there appears to be some universal tendency in the acquisition process. In other words, the innate human ability to acquire language in a systematic way, applies to both first and SLA. The truth probably lies somewhere in between. There is no conclusive evidence to support one view and disprove the other, but both hypotheses apply to the SLA process (Ellis, 2008).

### **5.15. TEACHABILITY HYPOTHESIS**

The idea that the teachability of language is constrained by what the learner is ready to acquire. The teachability hypothesis predicts that instruction can only promote language acquisition if the IL of the L2 learner is close to the point when the structure to be taught is acquired in the natural setting so that sufficient processing prerequisites are developed. Teachability hypothesis is closely related to Pienemann's work on PT and the development of output processing procedures. According to the theory, learners develop the ability to produce certain kinds of grammatical structures over time in a hierarchical order. What this means is that learners progress from stage 1 to stage 2 to stage 3 and so on, with each stage implying the learner has traversed the stages below it—but not necessarily the stages above it. Thus, if we collect data and find evidence of stage 3 behavior in a learner, we can infer he has passed through stages 1 and 2, but we cannot infer that he is at stage 4. Each stage is marked by particular processing procedures, and a learner must have acquired the processing procedure for each stage before going on to the next stage. The theory holds that learners cannot skip stages and thus cannot acquire processing procedures for which they are not ready. Thus, a learner cannot skip stage 4 and go from stage 3 to stage 5. That learner cannot skip the processing procedures of stage 4 to acquire those at stage 5.

This restriction on staged development and that the processing procedures for each stage are hierarchically ordered has implications for language teaching. Because learners cannot skip stages, they cannot learn and spontaneously produce grammatical structures for which they are not ready in terms of processing procedures. Teachability, then, refers to the idea that the effects of instruction are also constrained. Instruction in grammar can only make a difference if the learner is at the point at which he would

naturally acquire the processing procedure needed to produce the grammatical structure in question. In his research, Pienemann offers evidence that this is so. Learners taught structures that were too far beyond their current level of processing ability did not acquire the structures in question. In some cases, learners backslid (i.e., regressed to a previous stage), suggesting they were cognitively overloaded by the processing demands of the new structure (Ellis, 2008; Kumaravadivelu, 2006).

## 5.16. TOPICALIZATION

Topicalization is a synonym of topic-marking, making reference to the notions topic (what an utterance is about) and focus (new information about the topic). Topicalization is the process by which a speaker signals that a constituent or segment of an utterance constitutes its topic. Cross-linguistically, topicalization operates via syntactic, lexical, morphological, or phonetic means. In the sentence *As for John, he loves Mary*, John constitutes the topic, about which new information (focus) is provided. John is topicalized lexically by the expression *as for*. Syntactically, John represents the grammatical subject, frequently associated with topic. In (adult) SLA, learners possess knowledge of discourse organization (acquired in L1)—including the notion of topic—but must acquire the specific mechanisms by which the L2 signals these relations. The topicalization strategies available in the L2 may differ from those of the L1, and L1 preferences for discourse organization—including topicalization strategies—may influence L2 production (VanPatten and Benati, 2015, pp. 76–78, 129, 153, 154).

## 5.17. COMMON LEARNER STYLES

Drawing on the taxonomies proposed by Ehrman and Leaver (2003), Oxford (1993), and Reid (1995), three categories of learner styles thought can be outlined to represent natural orientations of learners:

1. **Perceptual Preferences:** This involves whether or when learners tend to learn by listening (auditory style), seeing (visual style), or doing things (kinesthetic style). For example, a learner with a visual style might prefer to learn vocabulary by reading new words rather than by hearing them.
2. **Personality Preferences:** This involves learners' degree of openness to new experiences and their extroversion versus introversion. For example, learners might prefer to learn by

looking outward in social contexts (extroverted style) or looking inward (introverted style). If asked to perform a role play in front of the class, learners with an introverted style might feel embarrassed, causing their performance to suffer. 3. *Processing preferences*. This concerns whether or when learners prefer to process information by seeing the big picture (global-oriented style) versus the specifics (detail-oriented style), by figuring out rules from examples (inductive style) versus learning the rules and applying them to examples (deductive style), or by bringing the parts together to determine the whole (synthetic style) versus disassembling the whole into parts (analytic style). For example, a learner with a global-oriented style might prefer to begin a new lesson by looking over the entire unit to get the big picture before attending to specifics.

These styles are summarized and exemplified in Table 5.1 of common learner styles.

**Table 5.1.** Common Learner Styles

Perceptual Preferences		
Style	Description	Example Learner Self-Report
Auditory	Prefers learning by hearing.	I learn better by hearing someone explain it.
Visual	Prefers learning by seeing.	I learn by reading it.
kines-thetic	Prefers learning by doing.	I learn better when I experience doing it myself.
Personality Preferences		
Style	Description	Example Learner Self-Report
Extro-verted	Prefers to learn by looking outward	I learn better by working with others.
Intro-verted	Prefers to learn by looking inward.	I learn better by working alone.
Processing Preferences		
Style	Description	Example Learner Self-Report



Global-oriented	Prefers focusing on the big picture (top-down); gravitates first toward the main ideas, then the details.	I learn better by summarizing the information.
Detail-oriented	Prefers focusing on the specifics (bottom-up); gravitates first toward the details, then the main ideas.	I learn better by understanding the specifics.
Inductive	Prefers to start with examples so generalizations can be made from the patterns.	I learn better by figuring out the rules from examples in the language.
Deductive	Prefers to start with the rules or theories so they can be applied to examples.	I learn better when I have the language rules before applying them.
Synthetic	Prefers to bring the parts together to construct new ideas.	I learn better by summarizing what has been said.
Analytic	Prefers to break information down into components so the relationship can be identified and understood.	I learn better by looking at the parts so I can analyze and understand them.
Field-sensitive	Prefers to get information in context.	I learn better if I see new words, structures, or ideas in context.
Field-insensitive	Prefers to get information in the abstract rather than in concrete situations.	I learn better if new words, structures, or ideas are explained without reference to context.

*Source: Celce-Murcia et al. (2014, pp. 535, 536).*

## 5.18. LEARNING STRATEGIES

According to Oxford (1990), learning strategies are divided into two types: direct and indirect strategies. Direct strategies can be categorized into: memory, cognitive, and compensation. Memory strategies include the ability to arrange items in order, create mental linkages and reviewing. Memory strategies “aid in entering information into long term memory and retrieving information when needed for communication.” (Oxford, 1990, p. 71). On the other hand, indirect strategies involve metacognitive, affective, and social strategies. Furthermore, O’Malley and Chamot (1990) classified



language learning strategies into cognitive, meta-cognitive, and social strategies. Cognitive strategies deal directly with the information received and the use of this information to improve learning. Cognitive strategies comprise conscious actions which the language learners take to handle the received information, such as taking notes, using resources, and forming and organizing information. Meta-cognitive strategies entail language learners to make plans such as planning their own learning, observing their own speech, and being able to evaluate their success of a definite strategy. The third type of learning strategies is social strategies in which learners socially interact with other people to learn the language (Barjesteh and Alinia, 2019).

### **5.18.1. Identity-Processing Styles**

Berzonsky (1989, 1992, as cited in Ranter, 2014) identity-processing styles tend to fall into three categories: informational, normative, and diffusive-avoidant. Each style users have distinctive tendencies while looking for appropriate information so as to construct their identity. First style users are vibrant explorers. Conversely, the normative identity style users are willing to have firm devotion to belief and utilize thoughts that entail not much exploration. Ultimately, diffuse-avoidant style users have a tendency to postpone identity related decision making until a decision is forced by contextual factors due to indecisiveness. Conspicuously, it seems required to explore an impact identity processing styles may have on individuals learning styles due to this fact that personality trait is considered as one of the main influential factors in L2 learning (Barjesteh, Farsi, Ahmadi, Seyedebrahimi, 2017).



## CHAPTER 6

# MODELS IN SECOND LANGUAGE ACQUISITION

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## 6.1. ADAPTIVE CONTROL OF THOUGHT MODEL (ACT MODEL)

ACT model is a cognitive model of memory, developed by Anderson, which attempts to describe how humans store and retrieve knowledge. The ACT model is the foundation of *skill-learning theory* that distinguished between two types of knowledge: *declarative and procedural knowledge*. Procedural knowledge (knowing how to follow different procedural steps to perform an action, i.e., if X then Y) is encoded in the form of production systems, while declarative knowledge (knowing facts about different things, i.e., knowing ‘that’) is encoded in the form of highly interconnected propositional or semantic networks. Declarative knowledge constitutes the facts we know about the world, and the events we recall; procedural knowledge enables us to perform activities, many of which are automatic. Declarative knowledge is usually explicit and capable of being expressed verbally; it includes the kinds of grammar rule that a linguist might formulate. By contrast, procedural knowledge is implicit; it includes the ability to process language without necessarily being able to put into words the rules that are being applied.

According to ACT, learning begins with *declarative knowledge* (information is gathered and stored) and slowly becomes *procedural* (people move toward the ability to perform with that knowledge). Afterward, people move to a stage in which they can function effortlessly with the procedural knowledge. For example, an experienced driver uses procedural knowledge to brake suddenly when faced with a hazard but uses declarative knowledge to explain how a car’s braking system works. A production system is the set of rules which need to be followed in order to perform the action or execute a skill.

Anderson intended his theory to be sufficiently broad as to provide an overarching theory of the architecture of cognition, and different cognitive processes (memory, language comprehension, reasoning, etc.), are all considered to fall under the same underlying cognitive system. A number of researchers in SLA have used the model to help understand how knowledge of L2 develops, and within this view, the development of linguistic skill is considered the development of a complex cognitive skill. Language learning then is considered a form of skill learning that must develop both in terms of developing declarative knowledge of the language, but also in developing automaticity, which leads to more fluent language performance. Within SLA, the claim is that learners move from declarative to procedural knowledge through three stages. In the *declarative* stage information is

stored as facts for which there are no ready-made activation procedures. For example, we may be aware that *drowned* consists of *drown* and *-ed*, and yet be unable to produce *drowned* correctly in conversation. The second stage is the *associative* stage. Because it is difficult to use declarative knowledge, the learner tries to sort the information into more efficient productions sets by means of ‘composition’ (collapsing several discrete productions into one), and ‘*proceduralization*’ (applying a general rule to a particular instance). For example, the learner may have learned *drowned* and *saved* as two distinct items, but may come to realize that they can be represented more economically in a production set: ‘if the goal is to generate a past tense verb, then add *-ed* to the verb.’ This may then serve as a general procedure for generating past tense forms, including incorrect ones (such as *goed*). Anderson notes that errors are particularly likely during the associative stage. In the *autonomous* stage, in which procedures become increasingly automated, the mind continues both to generalize productions and also to discriminate more narrowly the occasions when specific productions can be used. For example, the learner may modify the past tense production set (above) so that it applies to only a subset of verbs. At this stage, the ability to verbalize knowledge of the skill can disappear entirely.

Anderson discusses classroom L2 learning in the light of the ACT model. He sees the kind of knowledge taught to the classroom learner as different from adult L1 knowledge. According to Anderson, we speak the learned language (i.e., the second language (L2)) by using general rule-following procedures applied to the rules we have learned, rather than speaking directly, as we do in our native language (NL). Not surprisingly, applying this knowledge is a much slower and more painful process than applying the procedurally encoded knowledge of our own language.

However, Anderson sees the differences between L1 and foreign language learning as merely a question of the stage reached. Whereas L1 learners almost invariably reach the autonomous stage, foreign language learners typically only reach the associative stage. Thus, although foreign language learners achieve a fair degree of proceduralization through PRACTICE, and can use L2 rules without awareness, they do not reach full autonomy. In short, the ACT model claims that learning begins with declarative knowledge which slowly becomes proceduralized, and that the mechanism by which this takes place is *practice* (Ellis, 2008).

## 6.2. ANDERSON'S ACT MODEL: STAGES OF DEVELOPMENT

One of the processing models from cognitive psychology, which has also been applied to aspects of SLL, is Anderson's (1983, 1985) ACT model. This model is not dissimilar from McLaughlin's. It is more wide-ranging, and the terminology is different, but practice leading to automatization also plays a central role. It enables *declarative knowledge* (i.e., knowledge *that* something is the case) to become *procedural knowledge* (i.e., knowledge *how* to do something). One of the major differences is that Anderson posits three kinds of memory: a working memory (WM), similar to McLaughlin's short-term memory and therefore tightly capacity limited, and two kinds of long-term memory (LTM)—a declarative LTM and a procedural LTM. With regard to language, declarative knowledge relates to such aspects of language as word knowledge (collocation, pronunciation, meaning). In general, this information is relatively accessible to conscious awareness; that is, we can retrieve that information when called upon to do so. Procedural knowledge or procedural memory relates to motor and cognitive skills that involve sequencing information (e.g., playing tennis, producing language). Using language (e.g., stringing words together to form and interpret sentences) is thought to involve procedural knowledge and, unlike declarative knowledge, is relatively inaccessible. Anderson believes that declarative and procedural knowledge are different kinds of knowledge that are stored differently. According to Anderson, the move from declarative to procedural knowledge takes place in three stages:

1. **The Cognitive Stage:** A description of the procedure is learnt.
2. **The Associative Stage:** A method for performing the skill is worked out.
3. **The Autonomous Stage:** The skill becomes more and more rapid and automatic.

### 6.2.1. Unilateral Movement From Declarative to Procedural Knowledge

Anderson's (1983) application of his model to first language (L1) acquisition has been criticized for insisting that *all knowledge starts out in declarative form* (DeKeyser, 1997). This is clearly problematic in the case of L1 learners, as Anderson has accepted in answering some of these criticisms. With respect to language learning, Anderson does not claim that all knowledge needs to

start as declarative knowledge any longer (Anderson and Fincham, 1994; MacWhinney and Anderson, 1986). However, other applications, such as to the learning of algebra, geometry, or computer programming, have been very successful. Indeed, it is the comparability of the teaching or learning of L2s in instructional environments with the teaching or learning of complex skills such as algebra that has attracted the attention of second language acquisition (SLA) researchers. Because Anderson's model is a general cognitive model of skill acquisition, it can be applied to those aspects of SLL that require *proceduralization and automatization*.

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### **6.3. ANDERSON'S ACT-R MODEL (ADAPTIVE CONTROL OF THOUGHT-RATIONAL)**

According to ACT-R, cognition emerges from the interaction of two types of knowledge—declarative knowledge that encodes explicit facts that the system knows and procedural knowledge that encodes rules for processing declarative knowledge. In ACT-R, information processing is under the control of a current goal. In response to that goal, a production rule is chosen from procedural memory to apply. Typically, a production rule will call for the retrieval of some piece of information, called a chunk, from declarative memory, which will result in a transformation of the goal. Then the cycle of production selection and information retrieval will apply to this new goal state. Two aspects of ACT-R that are important for current purposes are

the process by which production rules are selected to apply to the goal and the process by which chunks are selected to be retrieved. To know what ACT-R is and what it does, one can refer to Stewart and West (2007, p. 230) contention that “ACT-R is a modular theory of mind. That is, it treats the mind as being composed of distinct modules that exist for particular functions. This being the case, the modules need to communicate to each other using a common mechanism.

According to Anderson and Betz (2002, p. 5), ACT-R is a “cognitive architecture whose basic mechanisms and processes have been determined by the development of models in domains such as verbal learning, strategy choice, cognitive arithmetic, analogy, and scientific reasoning. ACT-R provides a theory of how participants choose among multiple strategies for categorization.” They assert that ACT-R explains how people choose between rules and exemplars, which is mostly (according to Lovett, 1998, cited in Anderson and Betz, 2001) based on past history of success. In order to retrieve a chunk, there are two rules: the amount of practice of a chunk and the degree of the match between the chunk and the retrieval specifications (Anderson and Betz, 2002).

Douglass, Lebiere, and Qin (2004) explain how ACT-R theory can be considered as an integrated cognitive model and quotes Newell (1990) as follow: A single system (mind) produces all aspects of behavior. It is one mind that minds them all. Even if the mind has parts, modules, components, or whatever, they all mesh together to produce behavior. Any bit of behavior has causal tendrils that extend back through large parts of the total cognitive system before grounding in the environmental situation of some earlier times. If a theory covers only one part or component, it flirts with trouble from the start. It goes without saying that there are dissociations, independencies, impenetrabilities, and modularities. These all help to break the web of each bit of behavior being shaped by an unlimited set of antecedents. So they are important to understand and help to make that theory simple enough to use. But they don’t remove the necessity of a theory that provides the total picture and explains the role of the parts and why they exist.

Matessa and Anderson (2000) compares ACT-R model and competition model (CM) as follows: Both the CM and ACT-R model made similar predictions of cue use early in learning and agreed that the cue with high conflict validity (shading) would be used most in later learning. However, the ACT-R model differed in that it predicted that the cue with low conflict validity (size) would be used more than the cue with medium conflict



validity (shape) later in learning because statistics about the reliability of the shape cue would be blocked by the use of the shading and size cues, and this prediction was supported by the subject data.

Stewart and West (2007) define the role of chunks in the ACT-R model as follow: In ACT-R, the various components of the architecture communicate using a simple symbolic representation system, called a chunk. Each chunk has a number of slots, each of which contains a single symbol. These symbols can represent anything (including other chunks), but do not have inherent semantic value. As a guideline, it is recommended that chunks have a small number of slots. Miller's number of  $7 \pm 2$  is recommended as an upper limit, although this is not enforced. Anderson and Schunn (2000) define the ACT-R theory and its components in the following: The ACT-R theory admits of three basic binary distinctions:

1. First, there is a distinction between two types of knowledge-declarative knowledge of facts and procedural knowledge of how to do various cognitive tasks.
2. Second, there is the distinction between the performance assumptions about how ACT-R deploys what it knows to solve a task and the learning assumptions about how it acquires new knowledge.
3. Third, there is a distinction between the symbolic level in ACT-R, which involves discrete knowledge structures and a sub-symbolic level which involves neural-like activation-based processes that determine the availability of these symbolic structures.

## 6.4. CONNECTIONIST/EMERGENTIST MODELS

In this approach to language learning, also referred to as constructivist approaches, the emphasis is on usage. Learning does not rely on an innate module, but rather it takes place based on the extraction of regularities from the input. As these regularities or patterns are used over and over again, they are strengthened. Frequency accounts (Ellis, 2002) are an example. Frequency accounts of SLA rely on the assumption that "humans are sensitive to the frequencies of events in their experience" (p. 145). The approach is exemplar-based (*NOT rule-governed*) in that it is the examples that are present in the input that form the basis of complex patterns and from which regularities emerge.

According to Ellis (2002, p. 144), “comprehension is determined by the listeners’ vast amount of statistical information about the behavior of lexical items in their language.” In other words, language is not driven by an innate faculty; rather, the complex linguistic environment provides the information from which learners abstract regularities. Assuming that aspects of language are sensitive to frequency of usage, there are implications for how one conceives of grammar. The representation of language, in this view, relies on the notion of variable strengths that reflect the frequency of the input and the connections between parts of language. In this approach, learning is seen as simple instance learning (rather than explicit/implicit induction of rules), which proceeds based on input alone; the resultant knowledge is seen as a network of interconnected exemplars and patterns, rather than abstract rules. Even though connectionist approaches have been around for a number of years, it is only recently that research within a L2 context has begun to take place.

*Connectionism* is a cover term that includes a number of network architectures. One such approach is parallel distributed processing (PDP). At the heart of PDP is a neural network that is generally biologically inspired in nature. The network consists of nodes that are connected by pathways. Within connectionism, pathways are strengthened or weakened through activation or use. Learning takes place as the network (i.e., the learner) is able to make *associations*, and associations come through exposure to repeated patterns. *The more often an association is made, the stronger that association becomes.* New associations are formed, and new links are made between larger and larger units until complexes of networks are formed. One of the explanations for the order of acquisition of morphemes comes from Larsen-Freeman (1976), who proposed that frequency of occurrence is a major determinant. To frame this explanation within the framework of connectionism, we would want to say that learners are able to extract regular patterns from the input to create and strengthen associations, although they may not be aware that this is what they are doing. Ellis and Schmidt (1997), in an experiment based on a connectionist model, supported Larsen-Freeman’s suggestion, finding frequency effects for the acquisition of L2 morphology. Not many L2 studies have been conducted within the framework of connectionism. As noted earlier, *connectionist systems rely not on rule systems but on pattern associations.*

Thus, if such a model is to work, we will need to have a clear understanding of how to determine the strength of associations. It stands to reason that the strength of associations will change as a function of

interaction with the environment, or, put differently, with the input. It is to be noted that in the case of SLA, the strength of association may already (right or wrong) be present; that is, a pattern of connectivity may already have been established. In other words, the L1 is already in place and, therefore, there is a set of associations with their strengths fixed. These associations can possibly interfere with the establishment of an L2 network. In terms of process, processing consists of a *continuous and parallel (NOT serial)* determination of the activation values of all nodes and of the connection strengths between nodes according to activation and learning rules. The activation rules determine how activation is propagated between nodes. In this model, knowledge is seen not as ‘patterns’ or ‘rules,’ nor is there any distinction drawn between declarative and procedural knowledge.

Emergentism (and its predecessor connectionism) do have problems, however, in accounting for the *poverty of the stimulus* problem. Within the theory, there is no real way to explain how people come to know more than what they are exposed to (emergentists make no distinction between competence and performance). Because the theory relies heavily on frequency in the input and general learning architecture, it cannot explain why people know that certain kinds of sentence permutations are impossible. Indeed connectionist models of language learning constitute an enormous challenge to nativist theories of language and acquisition. Not surprisingly, therefore, they have been criticized by researchers working in the Chomskyan paradigm (Ellis, 1994, p. 403; Gass and Selinker, 2008, 219–221; Mitchell and Myles, 2004, pp. 121–123; Robinson, 2013, pp. 473, 474).

## 6.5. PRAGMATICS

Pragmatics, the ability to act and interact by means of language, is a necessary and sometimes daunting learning task for second and foreign language learners.

### 6.5.1. Developing Pragmatic Competence

#### 6.5.1.1. Sociopragmatic and Pragmalinguistic Competence

The challenge that learners face in acquiring the pragmatics of a L2 is considerable because they have to learn (to paraphrase Austin, 1962) not only how to do things with target language (TL) words but also how communicative actions and the “words” that implement them are both

responsive to and shape situations, activities, and social relationships. Following Leech (1983), these two intersecting domains of pragmatic competence are referred to as sociopragmatic and pragmalinguistic competence. Sociopragmatic competence encompasses knowledge of the relationships between communicative action and power, social distance, and the imposition associated with a past or future event (Brown and Levinson, 1987), knowledge of mutual rights and obligations, taboos, and conventional practices (Thomas, 1983), or quite generally, the social conditions and consequences of “what you do, when, and to whom” (Fraser, Rintell, and Walters, 1981).

Whereas *sociopragmatics* describes the interface between pragmatics and social organization, *pragmalinguistics* focuses on the intersection of pragmatics and linguistic forms (Leech, 1983). Hence, *pragmalinguistic competence comprises the knowledge and ability for use of conventions of means* (such as the strategies for realizing speech acts) *and conventions of form* (such as the linguistic forms implementing speech act strategies; Clark, 1979; Thomas, 1983). Becoming pragmatically competent can be understood as the process of establishing sociopragmatic and pragmalinguistic competence and the increasing ability to understand and produce sociopragmatic meanings with pragmalinguistic conventions. From cognitive psychological and social-psychological perspectives, interlanguage (IL) pragmatics research has investigated how the process of becoming pragmatically competent in a second or foreign language is influenced by such factors as input, noticing, and understanding, L2 proficiency, transfer, and individual differences (IDs). In contrast, theories of L2 (pragmatic) learning as social practice explore the interrelationship of sociopolitical contexts, social identities, and participation opportunities in L2 pragmatic learning (Hinkel, 2005, pp. 317, 318).

## 6.6. COMPETITION MODEL (CM)

The CM is another emergentist theory of SLA and is entirely compatible with connectionist theory, as MacWhinney (2001) explicitly recognized. It can also be seen as a functionalist model and, like other such models, seeks to account for the kind of knowledge that underlies real-time processing in real-world language behavior, although it has been investigated by means of experimental studies which elicited rather artificial language responses. It also resembles other functionalist models in that it is interactionist; that is, the *learner's grammar is viewed as resulting from the interaction between*

*input and cognitive mechanisms* relating to perceptual abilities, channel capacity, and memory. Central to the model is the idea of form-function mappings. As MacWhinney, Bates, and Kligell (1984) put it: ‘the forms of natural languages are created, governed, constrained, acquired, and used in the service of communicative functions. Any one form may realize through a number of functions and, conversely, any one function can be realized through a number of forms. The learner’s task is to discover the particular form-function mappings that characterize the TL.

Form-function mappings are characterized as being of varying strengths in different languages. This is usually illustrated with reference to the function of ‘agency,’ which has a number of possible formal exponents:

1. **Word Order:** in the case of transitive constructions, the first noun mentioned in a clause is likely to function as the agent. For example, in the English sentence *Mary kissed John*, ‘Mary’ is the agent.
2. **Agreement:** The noun phrase which functions as agent may agree in number with the verb. Thus, in English, a singular noun phrase functioning as agent takes a singular verb form (e.g., *She likes ice cream*), while a plural noun phrase takes a plural verb form (e.g., *They like icecream*). The object of the sentence has no effect on the verb form.
3. **Case:** The noun phrase functioning as agent may be morphologically marked in some way. For example, the agent is signaled in German by nominative case marking on the article, while the object is signaled by means of accusative case marking (e.g., *Der Mann isst den Apfel* = *The man is eating the apple*).
4. **Animacy:** Agents are normally animate, patients are normally inanimate. Any one language is likely to utilize several devices for signaling the ‘agent’ of a sentence. English, for example, uses all four, as illustrated in these sentences: *Mary kissed John*. (word order) *Money they like*. (agreement) *She kissed him*. (case) *This book Mary likes a lot*. (animacy) However, a language is likely to assign different weights to these devices in terms of the probability of their use in signaling a given function. English, as the above examples show, relies primarily on word order to encode agency, while Russian uses case marking, and Japanese, animacy.

Like variability models, the CM is probabilistic in nature. The model takes its name from the ‘competition’ that arises from the different devices or cues that signal a particular function. For example, in a sentence like *that lecturer we like a lot* there is competition between ‘lecturer,’ ‘we,’ and ‘lot’ for the role agent of the verb. ‘Lot’ rapidly loses out because, unlike ‘lecturer’ and ‘we,’ it is inanimate, and because it follows rather than precedes the verb. The candidacy of ‘lecturer’ is promoted by its position in the sentence—it is the first noun—but, ultimately, this cue is not strong enough to overcome two other cues. ‘We’ is the strongest candidate for agent because it is nominative in case and because it agrees in number with the verb. The task facing the L2 learner is to discover (1) which forms are used to realize which functions in the L2, and (2) what weights to attach to the use of individual forms in the performance of specific functions. This is what is meant by form-function mapping. The input supplies the learner with cues of our broad types: word order, vocabulary, morphology, and intonation. The usefulness of a cue is determined by several factors:

1. **Cue Reliability:** The extent to which a cue always maps the same form onto the same function.
2. **Cue Availability:** How often the cue is available in the input.
3. **Conflict Validity:** Whether a cue ‘wins’ or ‘loses’ when it appears in competitive environments). For example, if we consider the information available to the L2 learner regarding the role of word order in realizing agency in English, we can characterize this ‘cue’ as relatively reliable (the noun phrase preceding the verb is typically the agent) and readily available (the input is likely to supply plentiful examples of this mapping). Also, in English, word order tends to override other cues (except agreement). Thus, in a sentence like ‘Mary bit the dog, Mary is the agent, even though experience of the world might lead one to suspect that ‘the dog’ is the more likely agent. As MacWhinney (2001) put it, the CM ‘provides a minimalist, empiricist prediction for the ways in which cues are acquired’ (p.76) (MacWhinney, 2001).

### 6.6.1. Non-Specificity of Human Capacity for Language Learning

Ellis (1994, p. 373) states that like other functionalist models and unlike linguistic models associated with Universal Grammar (UG), the CM sees the human capacity for language learning as non-specific (i.e., as resulting

from general cognitive mechanisms involved in other kinds of learning). Hence, the CM is based on general nativism (as opposed to the special/linguistic nativism of Chomsky).

### **6.6.2. Competition Model (CM) as a Model of Linguistic Performance**

Bates and MacWhinney (1987, pp. 159, 160) state that the CM is a particular instantiation of a general functionalist approach to language performance and language acquisition. AS defined by MacWhinney, Bates, and Kliegl (1984, p. 128), functionalism is the belief that “The forms of natural languages are created, governed, constrained, acquired, and used in the service of communicative functions.” Bates and MacWhinney (1987, p. 160) add that the CM makes functionalist claims about language acquisition, and that is NOT offered as a formal model of linguistic competence but rather as a model of linguistic performance. This concentration of performance has one particularly important implication: In modeling the differences among natural languages, our goal is to provide an explicit account not only for the kinds of discrete “yes or no” phenomena that play a role in traditional linguistic models, but also for the probabilistic differences between natural languages that are observed in real-time language use. In other words, we are focusing on cross-linguistic variation in the mapping between form and function in language comprehension, production, and acquisition. Hence, the CM is not a formal model of linguistic competence, but of performance.

The most *fundamental difference between this model and the UG model* is that in the UG model form and functions are separated, whereas CM is based on the assumption that the form of language cannot be separated from its function. According to MacWhinney, Bates, and Kliegl (1984), the form of natural languages are created, governed, constrained, acquired, and used in the service of communication functions. CM rejects innateness of language too and argues that input is strong enough to give all the information learners need (MacWhinney, 2001).

## **6.7. THE ACCULTURATION MODEL**

Schumann’s acculturation model was established to account for the acquisition of an L2 by immigrants in majority language settings. It specifically excludes learners who receive formal instruction. The model recognizes the developmental nature of SLA and seeks to explain differences in learners’ rate of development and also in their ultimate level of achievement



in terms of the extent to which they adapt to the target-language culture. Acculturation, which can be defined generally as ‘the process of becoming adapted to a new culture’ (Brown, 1980, p. 129), is seen by Schumann as governing the extent to which learners achieve target-language norms. As Schumann put it: SLA is just one aspect of acculturation, and the degree to which a learner acculturates to the target-language group will control the degree to which he acquires the L2. (1978, p. 34) In fact, Schumann (1986) distinguished two kinds of acculturation, depending on whether the learner views the L2 group as a reference group or not.

Both types involve social integration and therefore contact with the L2 group, but in the first type, learners wish to assimilate fully into its way of life, whereas in the second, they do not. Schumann argued that both types of acculturation are equally effective in promoting SLA. Schumann proposed the Acculturation Model as a means of accounting for the apparent fossilization of one of the six learners studied by Cazden, Cancino, Rosansky, and Schumann (1975).

Whereas the other five manifested considerable development over the 10-month period of the study, Schumann (1978b) claimed that Alberto did not advance in most of the structural areas investigated. Alberto’s lack of development could not be satisfactorily explained by either his cognitive abilities, as he demonstrated normal intelligence, or age, as many older learners achieve satisfactory levels of L2 proficiency.

The problem appeared to be that he had a very limited need to communicate in the L2. The extent to which learners acculturate depends on two sets of factors that determine their levels of *social distance* and *psychological distance* (Schumann, 1978a–c). Social distance concerns the extent to which individual learners become members of the TL group and, therefore, achieve contact with them.

Psychological distance concerns the extent to which individual learners are comfortable with the learning task and constitutes, therefore, a personal rather than a group dimension.

The various social and psychological factors which Schumann identified as important are described in Table 6.1. The social factors are primary. The psychological factors mainly come into play where social distance is indeterminate (i.e., where social factors constitute neither a clearly positive nor a negative influence on acculturation).



**Table 6.1.** Factors Affecting Social and Psychological Distance

Factor	Description
<b>I. Social Distance</b>	
1. Social dominance	The L2 group can be politically, culturally, technical, or economically superior (dominant), inferior (subordinate), or equal.
2. Integration pattern	The L2 group may assimilate (i.e., give up its own lifestyle and values in favor of those of TL group), seek to preserve its lifestyle and values, or acculturate (Choice 2) (i.e., adopt lifestyle and values of TL group, while maintaining its own for intra-group use).
3. Enclosure	The L2 group may share the same social facilities (low enclosure) or may have different social facilities (high enclosure).
4. Cohesiveness	The L2 group is characterized by intra-group contacts (cohesive) or inter-group contacts (non-cohesive).
5. Size	The L2 group may constitute a numerically large or small group.
6. Cultural congruence	The culture of the L2 group may be similar or different from that of the TL group.
7. Attitude	The L2 group and TL group may hold positive or negative attitudes towards each other.
8. Intended length of residence	The L2 group may intend to stay for a long time or a short time.

<b>II. Psychological Distance</b>	
1. Language shock	The extent to which L2 learners fear they will look comic in speaking the L2.
2. Culture shock	The extent to which L2 feel anxious and disorientated upon entering a new culture.
3. Motivation	The extent to which L2 integratively (most important) or instrumentally motivated to learn the L2.
4. Ego-permeability	The extent to which L2 learners perceive their L1 to have fixed and rigid or permeable and flexible boundaries and therefore the extent to which they are inhibited.

A learning situation can be 'bad' or 'good' (Schumann, 1978c). An example of a 'good' learning situation is when (1) the L2 and TL groups view each other as socially equal, (2) both groups are desirous that the L2 group assimilate, (3) there is low enclosure, (4) the L2 group lacks cohesion, (5) the group is small, (6) both groups display positive attitudes towards each other, and (7) the L2 group envisages staying in the TL area for an extended period. Several 'bad' learning situations are possible, as many of the social variables permit three-way alternatives. Also, different learning situations manifest degrees of 'badness' in accordance with the extent of the overall social distance. In his early writings, Schumann suggested that acculturation affects SLA by its effect on the amount of contact learners have with TL speakers: *the greater the contact, the more acquisition takes place*. Subsequently, Schumann (1986) proposed that acculturation may also affect the nature of the verbal interactions that learners take part in and thus the quality as well as the quantity of L2 input. The Acculturation Model, however, does not specify the internal processes that are involved in acquisition. The test of any model is whether it is supported by the results of empirical research. The Acculturation Model has received only limited

support, as Schumann (1986) acknowledged. A number of theoretical objections have also been lodged against the model. A major concern is Schumann's assumption that it is contact that mediates the relationship between social distance and acquisition. It is not clear to what extent more contact correlates with higher levels of acquisition. However, perhaps the greatest failing of the Acculturation Model is that it has nothing to say about how social factors influence the quality of contact that learners experience. The model represents a Type I theory. That is, it assumes that social factors determine the rate and success of SLA. As such, it allows no room for the possibility that learners have agency and can challenge the social factors that impede their learning. To account for the quality of contact, a Type 2 approach is needed.

The psychological factors, mainly affective in nature, are secondary important. The following factors affect the psychological distance:

1. **Language Shock:** Learner's confusion when using L2.
2. **Culture Shock:** Learners' disorientation as a result of culture differences) in the TL natural environment consists of four stages:
  - **Euphoria:** The learners get excited over the newness of the surroundings.
  - **Culture Shock:** Emerges as individuals feel the intrusion of more and more culture differences into their own images of self and security.
  - **Cultural Stress:** Gradual recovery: some problems of acculturation are solved, while others continue for some time. The learner starts to understand the differences in thinking. The learner's problems center around the question of identity, she/he does not perceive himself/herself as belonging to any culture.
  - **Full Recovery:** Adaptation, assimilation or acceptance of the new culture. A new identity developed.

## 6.8. ACCULTURATION EXTENDED MODEL (AEM)

It should be noted that the acculturation model focuses on social and psychological factors and ignore other variables in SLA. That is why some scholar added other variables to account for SLA along with acculturation factor. Ellis (2008) and Larson-Freeman (2007) assert that an elaborated version of Schumann' model was provided by Anderson as a cognitive dimension. Anderson built the nativization model on Schumann model

in particular by providing a cognitive dimension which Schumann did not consider. According to Ellis (1985), the model consists of two major processes:

1. **Nativization:** The process of assimilation of the input. The learner modifies the L2 input to match his/ her internalized knowledge of L1, other languages and the world. This process is visible in the first stage of language acquisition.
2. **Denativization:** The process of accommodation. The learner modifies his/her internalized knowledge to accommodate L2 input. This process is typical for later stages of language acquisition when L2 production is close to target norm. Teske and Nelson (1974) offered the first complete psychological perspective on acculturation. According to these writers, acculturation included changes in material traits, behavior patterns, norms, institutional changes, and importantly, values. However, Teske, and Nelson did not go further in their psychological analysis of how members of diverse cultures accommodate to one another.

According to Barjesteh and Vaseghi (2012), the main goal of SLA research, either short term or long term, is to somehow account for the very complex nature of SLA. That is, the goal of the theories is (or should be) to explain the IL system of the learners in a scientific way. In respect to this model, Farhady (1981) believes that the acculturation model attempts to answer questions dealing with the “whys” of SLA. He continues that if we want to claim that SLA is a social science, we should comply with the principles of established social sciences. Stern (1983, p. 518) believes this model has given a “better insight into language learning, designing research studies, and diagnoses individual patterns of language learning.” It can be inferred that the acculturation model takes into account the most important factors which may be involved in SLA since it draws the learners’ social and psychological factors. But, based on our experience in teaching English, the problem is the application of these factors in EFL classroom. First, the teacher may lack how to teach culture or may not have adequate knowledge to teach. Second, informing these factors to the students demand more naturalistic context than in a classroom environment (Ellis, 2008, pp. 326–329).

## 6.9. STYLISTIC CONTINUUM, ACCOMMODATION THEORY VERSUS ACCULTURATION MODEL

The stylistic continuum of Tarone explains why learner language is variable. It tells us that an inter-language grammar is constructed based on native speakers' (NSs) grammar. *Stylistic Continuum* of Tarone and *accommodation Theory* of Gile are both within the variationist paradigm, which seem to have their routes in Labov and Bakhtin's work. Stylistic Continuum of Tarone seems to be psycholinguistically motivated rather than being socially motivated (Ellis, 2007). Reason is *style-shifting* of the learners reflects opportunities for the learner to plan to output, whereas Accommodation Model is socially motivated.

Acculturation theory of is the process of becoming adapted to a new culture (Brown, 1980). Acculturation is determined by the degree of social and psychological distance between the learner and the TL culture. Acculturation model and accommodation theory are both sensitive to successful language acquisition and hence they both try to account for successful language acquisition (Ellis, 1985, 1994). Both of them look for the answer in the relationship between learners' social group (in-group) and the TL community (out-group). Ellis (1985, 1994) also list their differences. While Schumann tries to explain the relations in terms of the variables that create *actual social distance*, Gile does so in terms of *perceived social distance*. Schumann appears to treat social and psychological distance as absolute phenomena that determine the level of interaction between the learner and the NSs, but Gile sees inter-group relationships as subject to constant negotiation (Ellis, 1994).

## 6.10. THE LABOVIAN PARADIGM

The Labovian paradigm has exerted considerable influence on the study of variability in SLA research, particularly in much of the earlier work. Two constructs are of particular importance: *speech styles* and *variable rules*. Labov (1970) listed five axioms relating to the study of speech styles:

1. "... there are no single style speakers." All speakers vary their language to some degree when the social context or topic changes.
2. Styles can be ranged along a single dimension, measured by the amount of attention paid to speech. Language users vary in the degree to which they monitor their speech in different situations.

3. The vernacular style is the style in which minimum attention is given to monitoring speech. It is the style associated with informal, everyday speech and it provides 'the most systematic data' for linguistic study.
4. It is not possible to tap the vernacular style of users by systematic observation of how they perform in a formal context (such as an experiment).
5. The only way to obtain good data on the speech of language users is through systematic observation. The conflict between the fourth and the fifth axioms leads to what Labov called the observer's paradox. Good data require systematic observation, but this prevents access to the user's vernacular style. As an example of how Labov set about examining speech styles, let us consider one of his studies.

Labov (1970) examined the speech patterns of New Yorkers. He collected data using a variety of tasks in order to sample a range of speech styles, which he classified as (1) casual speech (i.e., the relaxed speech found in the street and in bars), (2) careful speech (for example, the speech found in interviews), (3) reading, (4) word lists, and (5) minimal pairs. These styles were spread along a continuum according to the amount of attention paid by the speakers to their own speech, the least attention being paid in (1) and the most in (5). Thus, attention is seen as the mechanism through which other factors can affect style. Labov's model, therefore, although primarily sociolinguistic, also incorporates a psycholinguistic factor-attention. Attention serves as the mechanism through which causative social factors such as verbal task (in particular), topic, interlocutor, setting, or the roles of the participants influence actual performance. However, Labov appeared to view "attention" as a global sort of activity rather than as involving a conscious focus on the variable in question. He investigated a number of pronunciation features and was able to show that the use of sounds like /θ/ (i.e., the first sound in 'thing') and their variants (for example, /t/) signaled sociolinguistic meaning. Speakers used the prestige /θ/ more frequently in styles where they were able to pay attention and the less prestigious sounds such as /t/ in styles where little or no attention to speech was paid. Labov referred to these changes in speech as style-shifting. He distinguished indicators (i.e., features that showed no style-shifting but which differed according to social stratification), markers (i.e., features that signaled both style-shifting and social stratification), and stereotypes (i.e., features that are socially stigmatized and therefore actively avoided). Labov's work indicated

that style-shifting was systematic either categorically or probabilistically. Categorical style-shifting is evident when it can be shown that speakers always use one particular feature (such as /θ/) in one style and another (such as /t/) in a different style. In such cases, it is possible to write a categorical rule to describe the speech behavior. Such a rule has this form:

$$X+Y=A$$

A where X refers to the variable itself, Y to its actual realization, and A the particular context (for example, the first sound of 'thing' is realized as /t/ in a context calling for a casual style). The actual behavior of Labov's subjects, however, was not usually categorical in this way. They tended to use one variant in one style and another variant in another style to a greater or lesser extent. In other words, their behavior was probabilistic. To account for this, Labov proposed the use of variable rules. These state that a given variable feature, X, is manifest as either Y or Z with differing levels of probability depending on the context/style. Such a rule can account for the patterns of variability in the choice of /θ/ and /t/ which Labov found in the speech of New Yorkers. It can show that speakers are much more likely to use the prestige feature /θ/ in a careful style than in a more casual style and, conversely, /t/ they are more likely to use a less socially prestigious feature /t/ in casual than in a careful style.

Variable rules have been used to describe the extent of the systematic variation that occurs in relation to situational factors (i.e., in style-shifting) and also that which arises as a result of linguistic context. For example, Labov (1969) was also able to show that the use of variants of copula 'be' (full, contracted, and zero copula) in Black English Vernacular (BEV) was influenced by the preceding and following elements in the sentence. Thus, zero copula was most likely to occur when the preceding word ended in a vowel and 'gonna' followed: He gon' try to get up. (+ vowel/+ verb) and least likely to occur when the preceding word ended in a consonant and a noun phrase followed: Bud is my friend. (consonant/+ noun phrase) A variable rule can express the probability of a particular form being used in a particular linguistic context. Powerful statistical procedures such as logistic regression (as used in VARBRUL) have been developed to account for the effects that various factors relating to both situational and linguistic context can have on speakers' choice of language forms. These provide a means of determining the differential effect of a number of factors and how they interact (Ellis, 2008, pp. 119–121).

## 6.11. KRASHEN'S MONITOR MODEL

Krashen's theory evolved in the late 1970s in a series of articles (Krashen, 1977a, b, 1978), as a result of the findings of the morpheme studies in the 1970s. Krashen thereafter refined and expanded his ideas in the early 1980s in a series of books (Krashen, 1981, 1982, 1985). As it was previously mentioned, Krashen based his general theory around a set of five basic hypotheses:

- The acquisition-learning hypothesis;
- The monitor hypothesis;
- The natural order hypothesis;
- The input hypothesis; and
- The affective filter hypothesis.

### 6.11.1. The Acquisition-Learning Hypothesis

This hypothesis has been highly influential, and, albeit in a different form, still remains the source of much debate today. The basic premise is that language acquisition, on the one hand, and learning, on the other, are separate processes. Acquisition refers to the 'subconscious process identical in all important ways to the process children utilize in acquiring their L1' (Krashen, 1985, p. 1) and learning refers to the 'conscious process that results in "knowing about" language' (Krashen, 1985, p. 1). In other words, acquisition is the result of natural interaction with the language via meaningful communication, which sets in motion developmental processes akin to those outlined in L1 acquisition, and learning is the result of classroom experience, in which the learner is made to focus on form (FonF) and to learn about the linguistic rules of the TL. The contrast between the naturalistic environment and the classroom environment is not the crucial issue, however. What is claimed to be important is the difference between meaningful communication, on the one hand, which can very well take place in the language classroom, and which will trigger subconscious processes, and conscious attention to form, on the other, which can also take place in naturalistic settings, especially with older learners who might explicitly request grammatical information from people around them. What is very problematic in this distinction is Krashen's claim that learning cannot turn into acquisition, that is, that language knowledge acquired or learnt by these different routes cannot eventually become integrated into a unified whole.



### 6.11.2. The Monitor Hypothesis

According to Krashen, ‘learning’ and ‘acquisition’ are used in very specific ways in second-language performance. The Monitor Hypothesis states that ‘learning has only one function, and that is as a Monitor or editor’ and that learning comes into play only to ‘make changes in the form of our utterance, after it has been “produced” by the acquired system’ (1982, 15). Acquisition ‘initiates’ the speaker’s utterances and is responsible for fluency (automaticity). Thus the Monitor is thought to alter the output of the acquired system before or after the utterance is actually written or spoken, but the utterance is initiated entirely by the acquired system. (McLaughlin, 1987, p. 24) It is quite clear from the above that the Monitor does not operate all the time. Given enough time, when a FonF is important for learners, and when learners know the grammatical rule needed, they might make use of the Monitor in order to consciously modify the output produced by the acquired system. Needless to say, the pressures and demands of conversing in the L2 in real time do not often allow for such monitoring to take place (Mitchell and Myles, 2004, pp. 44–46; VanPatten and Benati, 2015, pp. 89, 90, 141, 42).

### 6.12. MCLAUGHLIN’S INFORMATION-PROCESSING MODEL

Automatization (McLaughlin, 1987, 1990; McLaughlin and Heredia, 1996) is a notion based on the work of psychologists such as Shiffrin and Schneider (1977), who claim that the way in which we process information may be either controlled or automatic, and that learning involves a shift from controlled towards automatic processing. Applied to SLL, such a model works as follows. Learners first resort to controlled processing in the L2. This controlled processing involves the temporary activation of a selection of information nodes in the memory, in a new configuration. Such processing requires a lot of attentional control on the part of the subject, and is constrained by the limitations of the short-term memory. For example, a beginner learner wanting to greet someone in the L2 might activate the following words: *good morning how are you?* Initially, these words have to be put together in a piecemeal fashion, one at a time (assuming they have not been memorized as an unanalyzed chunk). Through repeated activation, sequences first produced by controlled processing become automatic. Automatized sequences are stored as units in the LTM, which means that they can be made available very rapidly whenever the situation requires

it, with minimal attentional control on the part of the subject. As a result, automatic processes can work in parallel, activating clusters of complex cognitive skills simultaneously. So, in the above example, once a learner has activated the sequence *good morning how are you?* a large number of times, it becomes automatic, that is, it does not require *attentional control*.

However, once acquired, such automatized skills are difficult to delete or modify. Learning in this view is seen as the movement from controlled to automatic processing via practice (repeated activation). When this shift occurs, controlled processes are freed to deal with higher levels of processing (i.e., the integration of more complex skill clusters), thus explaining the incremental (step by step) nature of learning. It is necessary for simple sub-skills and routines to become automatic before more complex ones can be tackled. Once our learner has automatized *good morning how are you?*, he or she is free to deal with the learning of more complex language, as the short-term memory is not taken up by the production of this particular string (Mitchell and Myles, 2004, pp. 100, 101).

### 6.13. DOGME MODEL

Richards and Rodgers (2014, p. 371) state that a more recent example of the use of central design in language teaching has been labeled “Dogme” by Scott Thornbury—who introduced the approach to language teaching (Meddings and Thornbury, 2009). The Dogme approach is based on the idea that instead of basing teaching on a pre-planned syllabus, a set of objectives, and published materials, teaching is built around conversational interaction between teacher and students and among students themselves. As Meddings and Thornbury (2009) state, teaching should be done using only the resources that the teachers and students bring to the classroom, i.e., themselves, and what happens to be in the classroom.

Freire (1970, p. 28) approaches education philosophy through the lens of “co-intentional education” to break the “culture of silence.” In this regard, he proposed that students’ real-life concern should be the cardinal course content and negotiation should form the educational context. Students employ materials developed by themselves, and the “teacher engages in the process of knowing as a learner among learners” (Riasati and Mollaei, 2012, p. 223). Later, Henry Giroux (1983) coined the term CP on Freire’s work to criticize a “Reagan-era educational culture of positivism that used school as forms of social regulation to preserve the status quo” (Groenke and Hatch, 2009, p. 3). Currently, this movement is known as Dogme ELT (Medding

and Thornburry, 2009). Chappell (2014) argues that a Dogme syllabus calls for a dialogic-driven pedagogy with an emergent language rather than the content of course books (Barjesteh, 2017).

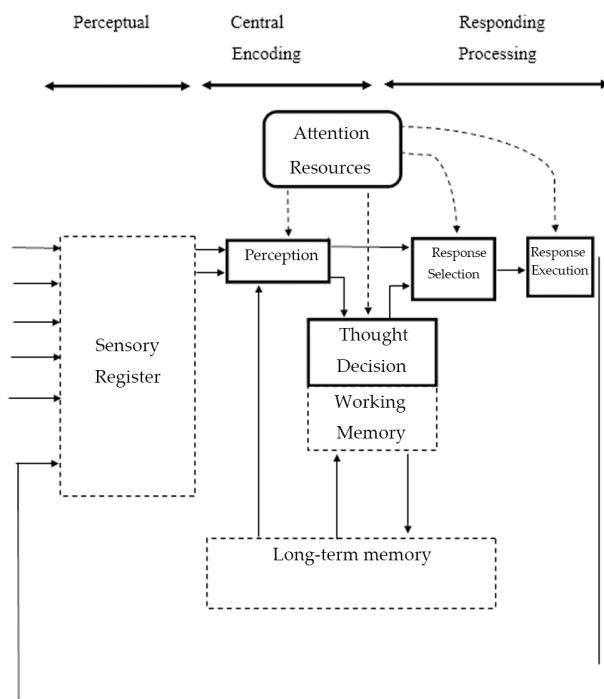
## 6.14. DIALOGIC MODEL

Dialogic interaction has been rooted in democratic instruction. Different authorities in education (e.g., Bakhtin, Bruner, Dewey, Habermas, and Socrates) advocate dialogic pedagogy as a forum for the educators to promote learning in an interactive process (Kim and Wilkinson, 2018). Dialogic teaching (DT) is an approach to language teaching that maximizes the power of interaction to proceed to learners' thinking, voice, and problem-solving. It was originally coined by Alexander (2004) in his model of dialogic pedagogy. Alexander conceptualized dialog as the cornerstone for teaching and learning. Alexander (2020) believes that DT employs the power of classroom discourse to promote learners' thinking. Alexander provides the justifications that classroom discourse can foster learners' social and linguistic development. Similarly, García-Carrión, López de Aguilera, Padrós and Ramis-Salas (2020) believe that teacher-student communication is the bedrock of this approach in a way that cognitive processes are dominant on the student's part. They maintain that students should be engaged with high degrees of autonomy to promote the classroom interaction to some extent.

Theoretically, the notion of DT has its roots in the *Socratic method of teaching*. Michaels and O'Connor (2012) posit that dialog is an important factor in constructing social identities. They underpinned that the dialogic discourse can foster students' cognitive development. Michaels, O'Connor, and Resnick (2008) posit that "dialog and discussion have long been linked to theories of democratic education. From Socrates to Dewey and Habermas, the educative dialog has represented a forum for learners to develop understanding by listening, reflecting, proposing, and incorporating alternative views" (p. 296). Learning through dialog has been inspired by Vygotsky's sociocultural theory (SCT) of learning and *Bakhtin's* dialogism theory, both highlighting the "social foundations of learning, the role of language in cognitive development and identity formation, and the link between individual and social" (Xu, 2012, p. 111 as cited in Barjesteh and Niknezhad, 2020).

## 6.15. INFORMATION PROCESSING MODEL

Three general stages of information processing at which attention operates are captured in Figure 6.1. The stages correspond broadly to three current themes in attentional research and theory (Sanders, 1998; Sanders and Neumann, 1996; Sergeant, 1996); (i) auditory and visual information intake and processing; (ii) central control and decision-making functions, such as allocation of attention to competing task demands, and automatization; and (iii) response execution and monitoring via sustained attention. These three themes and stages also correspond to three uses of the concept of attention; *to describe selection of information* (we pay attention to things as a way of selecting them for further processing); *to describe the capacity of attentional resources* (sometimes we are able to pay a lot of attention to a task, while at other times we are not); and *to describe the effort involved in sustaining attention to task goals* (we can maintain the level of attention we pay to a task, or attention and performance can decline over time). These are distinct but related uses of the concept of attention; each one related to separate functions, which, however, often operate in conjunction with each other.



**Figure 6.1.** A generic model of human processing with three memory system.

## 6.16. MCLAUGHLIN INFORMATION PROCESSING

This model regards human beings as processors of information limited both how much attention they can give to a task and how well they can process the information. Different tasks require different amount of attention and capacity. McLaughlin's theory does not appeal to consciousness continuum of Krashen, nor does it include the L1 acquisition as an ideal model for SLA. His model puts together processing mechanism (controlled and automatic) and categories of attention (*focal and peripheral*).

1. **Automatic Processing:** It is quick, and needs little attention. It is relatively more permanent and unconscious (i.e., in language automatic processing involves, simultaneous attention to use and usage of language).
2. **Controlled Processing:** This is slow, temporary, and under the control of attention. In language, controlled processing is when one wants to make sure that the tense used is correct. Learning starts with a process in which the learner makes an attempt to handle new information by giving it maximum attention; this is gradually transformed into an automatic process as the learner gets more used to handling the process.

## 6.17. GASS' MODEL OF SECOND LANGUAGE (L2) ACQUISITION

A model of SLA, developed by Gass, which identifies *five stages* to account for the conversion of INPUT to OUTPUT. It also incorporates a role for output in the acquisition process:

1. **Apperceived Input:** This occurs when the learner realizes that there is a gap in his L2 knowledge. Apperception is an internal cognitive act in which a linguistic form is related to some bit of existing knowledge (or gap in knowledge). Thus, the stage of the model draws on noticing hypothesis Gass also acknowledged the role played by input frequency.
2. **Comprehended Input:** Gass stressed the difference between comprehensible and comprehended input. Whereas comprehensible input positions the speaker as controlling comprehensibility, comprehended input focuses on the learner. She also noted that comprehension is not an all-or-nothing affair; there are different levels, reflecting the difference between

processing input for meaning and for learning. This stage draws on criticisms of Krashen's input hypothesis.

3. **Intake:** This referred to the process of assimilating linguistic material; it refers to the mental activity that mediates input and grammars. It is where noticing-the-gap or cognitive comparisons occur. Gass viewed interaction, in conjunction with the learner's innate knowledge of linguistic universals and his L1 knowledge as instrumental in causing intake.
4. **Integration:** Gass identified four possibilities. The first involves the acceptance or rejection of an existing IL hypothesis. The second involves the use of the intaken feature to strengthen an existing IL hypothesis. The third involves storage. That is, the intaken feature is not immediately incorporated into the L1 system but is rather treated as an item and placed in the learner's lexicon. Later, however, when the learner has gathered more evidence, the learner may also be able to utilize this item to confirm or disconfirm an IL hypothesis. The final possibility is that learner makes no use of the intake feature.
5. **Output:** Gass viewed output both as an overt manifestation that acquisition has taken place and also as a source of acquisition when it serves as a means for testing hypotheses. She drew explicitly on comprehensible output, envisaging a loop back to input. Gass' model constitutes the fullest and clearest statement of the roles played by input and interaction in SLA currently available. It is a standard computational model, reflecting the information-processing approach common in cognitive psychology (Ellis, 2008).

## 6.18. VARIABLE COMPETENCE

Variable competence has its premises in socio-linguistics and distance itself from the distinction made by Chomsky between competence and performance. Competence is the underlying grammatical knowledge of adult speakers of language and unlike performance is not influenced by memory, stress, fatigue, etc. Chomsky is interested to study the homogeneous competence. Variable competence holds that competence is variable and not homogeneous. Tarone, influenced by Labov, maintained that it is possible to analyze L2 learner's language from the perspective of various *styles*. She argues that L2 learner's language or competence is systematically different depending on

which context the language is used. She argues that fundamental to the L2 learner is a *capability* which consists of *variable style* or *knowledge* (from careful or super-ordinate style to vernacular). *Vernacular* style is used in informal situations when the learner does not pay much attention to form, but *careful style* is used when the learner pays great attention to the form and monitors output. Here the L1 has its influence. She argues that both vernacular and careful style constitute the learner's competence, which she calls it as *capacity*. Ellis *free variation* and *systematic variation* does not adopt stylistic continuum of Tarone. Instead, he argues that Early stage of the 2<sup>nd</sup> language learning when the learner has not yet developed the grammar, the learners' grammar is variable. Reason it is variable is that they have not yet developed grammar. As the time passes by, the learner's grammar develops, and she notices the differences. But, she does not replace the old items with the new ones; rather, she adds the new items to the old ones. This would lead to either free variation *where forms alternate in all environment randomly* or *systematic variation, where one variant appears regularly in one linguistic context and another one in another context*. Criticism to both of these models leveled by Gregg is that the constructs in these models do not have psychological reality (Ellis, 2008).

## 6.19. MULTIDIMENSIONAL MODEL

*Multidimensional model* is a cognitive approach to SLA, proposed by Meisel, Clahsen, and Pienemann, which claims that learners acquire certain grammatical structures in developmental sequences and that those sequences reflect how learners overcome processing limitations. Further, it claims that language instruction which targets developmental features will be successful only if learners have already mastered the processing operations which are associated with the previous stage of acquisition.

*The Multidimensional Model* resembles Andersen's work on operating principles in a number of respects. First, it is based on the painstaking analysis of naturally occurring learner speech. Second, it also sees the regularities in learner language as the product of cognitive processes that govern the linguistic operations learners are able to handle. However, the model constitutes a considerable advance on the idea of operating principles in that it relates the underlying cognitive processes to stages in the learner's development, explaining how one stage supersedes another. Also, the model provides an account of inter-learner variation. The model makes the following general claims:



- Learners manifest developmental sequences in the acquisition of a number of grammatical structures, such as word order and some grammatical morphemes;
- Learners also display individual variation, both with regard to the extent to which they apply developmental rules and to the extent to which they acquire and use grammatical structures that are not developmentally constrained;
- Developmental sequences reflect the systematic way in which learners overcome processing constraints. These constraints are of a general cognitive nature and govern production;
- Individual learner variation reflects the overall orientation to the learning task, which in turn is the product of socio-psychological factors;
- Formal instructions directed at developmental features will only be successful if learners have mastered the prerequisite processing operations associated with the previous stage of acquisition.

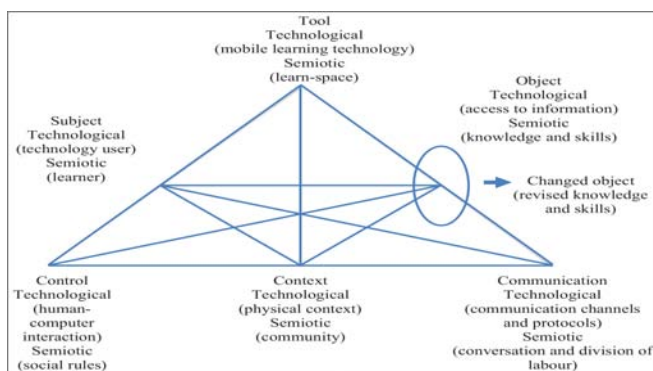
However, formal instruction directed at grammatical features subject to individual variation faces no such constraints. The model has two principal axes, the *developmental* and the *variational*. The former are acquired sequentially as certain processing strategies are mastered. The latter are required at any time (or not at all), depending on the learner's social and affective attitudes. This allows for learners to be grouped both in terms of their stage of development and terms of the kind of simplification they engage in.

## **6.20. THE TASK MODEL**

Sharples, Taylor, and Vavoula (2007, as cited in Kazemainy, Barjesteh, Golaghaei, and Nasrollahi, 2020) stated that the task model centers around providing a coherent perspective of the activities, the people, their contexts, the tools and technologies used by them, the tasks and their cognitive processes as well as knowledge management and social interactions. The socio-cultural aspects of this model are rooted in the work of Vygotsky (1980), who emphasized the developmental and dynamic nature of learning in an interactive mutual environment. Meanwhile, the task model primarily deals with and concentrates on mobile learning. It is also rooted in the activity theory (Uden, 2007) while expanding and including complex interdependencies and the dialectic of learning and technology (Frohberg,



Göth, and Schwabe, 2009). The structure and interactive components of the task model are depicted in Figure 6.2 (adopted from Kazemainy et al., 2020) to shed light on how they interact with each other in the task model for mobile learning.



**Figure 6.2.** The task model for mobile learning.

## 6.21. COMPONENTS OF THE TASK MODEL

Figure 6.2 illustrates that the task model has three components which are the subjects/learners, their objectives, and the learn-space/tools. The term ‘tools’ refers to any phenomena, which are used to fulfill the requirements of achieving the learners’ goals, such as books, videos, or learning management system (LMS) facilities as well as teachers and experts. The term ‘subjects’ refers to technology users/learners who are involved in the study. Finally, the term ‘object(ive)’ refers to the dynamic target knowledge and skills the subjects want to achieve. The crucial elements for mobile learning, according to classical views of learning, which are often neglected or not dealt with overtly and comprehensively are control (social rules), context (community), and communication (conversation and division of labor, Kazemainy et al., 2020).



## CHAPTER 7

# FIRST AND SECOND LANGUAGE ACQUISITION

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## 7.1. INTERFERENCE FROM THE L1 IN THE ACQUISITION OF PRAGMATIC COMPETENCE

According to Erickson (1984), there are three categories of pragmatic failure. First, at the level of explicit, referential meanings, there can be inappropriate transfer of speech act realization strategies or of expressions from the L1 to the L2 that can be interpreted differently. This is termed *pragmalinguistic failure*, which involves differences in the linguistic encoding of pragmatic meaning or force. This type is usually due to transfer or interference from the first language (L1) and can be observed in the linguistic forms used to, for example, apologize, to enact politeness, or to hedge a request. The differences may arise in the additional phrases that accompany, for example, an apology. Bergman and Kasper (1993) studied speech act by native speakers (NSs) of Thai and of English as well as nonnative Thai speakers of English, where they considered such features as the role of contextual factors in choice of apology strategies by those three speaker groups. The apology strategies could vary along several scales: severity of the offense, obligation to apologize, degree of offense to the addressee's face, social distance between the participants, and the need to take responsibility. Bergman and Kasper found differences in the use of apology routines by the three groups in their data collection. In particular, 50% of the apology routine use by the Thai nonnative English speakers reflected transfer from Thai apology patterns. Nonnative English speakers may express surprise when they hear Americans use the word "sorry" when giving condolences to someone whose family member has recently passed away.

The second category of pragmatic failure—*sociopragmatic failure*—refers to mismatches in terms of the implied social meaning of a word, phrase, or speech act. The mismatches derive from divergent assessments of the social aspects of the context of utterance, such as the social distance between the speaker and addressee and the rights and obligations of speakers and listeners. One example involves the assumption that calling a senior faculty member by his first name entitles the graduate student to telephone that person at his home late in the evening or during the weekend.

Third, there can be misattribution or faulty assessment of other participants' intentions, competence, and background knowledge. In this category, the presuppositions underlying speaker meaning need to be unpacked. In the north of England, postal clerks, both male and female, may address their regular customers with "Morning, luv, what can I do for you?" Customers not used to the word "luv" may take offense, seeing the male

clerk, in particular, as sexist or too familiar with the woman customer. The effect of misunderstandings of this sort in cross-cultural or regional cultural contact environments is to attribute them to personality flaws (someone may be regarded as rude as the result of her or his personal communication style). Or the discomfort may be due to ethnocultural origins, thereby stigmatizing or stereotyping all members of an ethnic group (Tannen, 1986; LoCastro, 2012, pp. 84, 85; Alijani and Barjesteh, 2018).

## 7.2. ERROR ANALYSIS AS THE SYSTEMATIC INVESTIGATION OF L2 LEARNERS' ERRORS

Developments in L1 acquisition and disillusionment with contrastive analysis (CA) meant that researchers and teachers became increasingly interested in the language produced by learners, rather than the target language (TL) or the mother tongue. This was the origin of *error analysis*, the systematic investigation of second language (L2) learners' errors. The language produced by learners began to be seen as a linguistic system in its own right, worthy of description. Corder (1967) was the first to focus attention on the importance of studying learners' errors, as it became evident that they did not all originate in the L1 by any means. The predictions of CA, that all errors would be caused by interference from the L1, were shown to be unfounded, as many studies showed convincingly that the majority of errors could not be traced to the L1, and also that areas where the L1 should have prevented errors were not always error-free (Mitchell and Myles, 2004, p. 38).

## 7.3. OPERATING PRINCIPLES AND FIRST LANGUAGE (L1) ACQUISITION

Slobin's (1973, 1979, 1985) operating principles are based on the claim that 'certain linguistic forms are more "accessible" or more "salient" to the child than others' (Slobin, 1979, p. 107). The 1979 edition of his book, *Psycholinguistics*, lists five operating principles and five resulting universals; these are different from linguistic universals in that they are cognitive rather than linguistic in nature, and they characterize the way in which children perceive their environment and try to make sense of it and organize it. These early principles are as follows (Slobin, 1979, pp. 108–110):

- **Operating Principle A:** Pay attention to the ends of words.
- **Operating Principle B:** There are linguistic elements that encode relations between words.

- **Operating Principle C:** Avoid exceptions.
- **Operating Principle D:** Underlying semantic relations should be marked overtly and clearly.
- **Operating Principle E:** The use of grammatical markers should make semantic sense (Mitchell and Myles, 2004, pp. 115–117).

## 7.4. VYGOTSKIAN VIEW CONCERNING EARLY AND LATE LANGUAGE DEVELOPMENT

The emergence of Scaffolding theory dates back to the late 1950s when Jerome Bruner, a cognitive psychologist, espoused this concept for the first time. He used the term to account for young children's oral language acquisition. Young children receive instinctive structures to learn a language (Daniels, 1994) through the assistance of their parents when they first start learning to speak. Wood, Bruner, and Ross' (1976) idea of scaffolding also corresponds to Vygotsky's work. Lev Vygotsky never used the term "scaffolding," but interactional support and the process by which adults mediate a child's attempts to take on new learning has been termed "scaffolding." Scaffolding indicates the helpful interactions between adult and child that enable the child to do something beyond his or her independent efforts. A scaffold is a temporary framework that is put up for support and access to meaning and taken away as needed when the child secures control of success with a task. Cazden (1983) defined a scaffold as "a temporary framework for construction in progress" (p. 6). The scaffolds provided by the tutor do not change the nature or difficulty level of the task; instead, the scaffolds provided allow the student to successfully complete the task. From a Vygotskian point of view, talk, and action work together with the socio-cultural fabric of the writing event to shape a child's construction of awareness and performance (Dorn, 1996). Clay (2005) shows that what may seem like casual conversational exchanges between tutor and student actually offer many opportunities for fostering cognitive development, language learning, story composition for writing, and reading comprehension. Conversations facilitate generative, constructive, experimental, and developmental speech and writing in the development of new ideas (Smagorinsky, 2007).

Using a Vygotskian theoretical framework, Wertsch, and Stone (1984) examined scaffolded instruction in a one-to-one remedial clinic setting with a learning disabled child. The researchers showed how adult language directs the child to strategically monitor actions. Analysis of communicative patterns show a transition and progression in the source of strategic responsibility

from teacher or other-regulated to child or self-regulated behaviors. In Vygotsky's words, "what the child is able to do in collaboration today he will be able to do independently tomorrow" (Vygotsky, 1987, p. 211). Some ingredients of scaffolding are predictability, playfulness; focus on meaning (FonM), role reversal, modeling, and nomenclature.

According to Saye and Brush (2002), there are two levels of scaffolding: soft and hard. An example of soft scaffolding in the classroom would be when a teacher circulates the room and converses with his or her students (Simon and Klein, 2007). The teacher may question their approach to a difficult problem and provide constructive feedback. According to Van Lier, this type of scaffolding can also be referred to as contingent scaffolding. The type and amount of support needed is dependent on the needs of the students during the time of instruction (Van Lier, 1996). Unfortunately, scaffolding can be difficult when the classroom is large and students have various needs (Gallagher, 1997).

On the other hand, hard scaffolds are developed in order to assist students with a difficult task (Saye and Brush, 2002). The key is that the assistance is planned in advance. For example, when students are discovering the formula for the Pythagorean Theorem in math class, the teacher may identify hints or cues to help the student reach an even higher level of thinking. In both situations, the idea of "expert scaffolding" is being implemented (Holton and Clarke, 2006). In the example given above, the teacher in the classroom is considered as the expert and responsible for the scaffolding of his or her students. Reciprocal scaffolding, a method first coined by Holton and Thomas, is a method that involves a group of two or more collaboratively working together. In this situation, the group can learn from each other's experiences and knowledge. The scaffolding is shared by each member and changes constantly as the group work on a task (Holton and Clarke, 2006). According to Vygotsky, students develop higher-level thinking skills when scaffolding occurs with an adult expert or with a peer of higher capabilities (Stone, 1998). Conversely, Piaget believes that students discard their ideas when paired with an adult or student of more expertise (Piaget, 1928). Instead, students should be paired with others who have different perspectives. Conflicts would then take place between students allowing them to think constructively at a higher level.

Technical scaffolding is a newer approach in which computers replace the teachers as the experts or guides, and students can be guided with web links, online tutorials, or help pages (Yelland and Masters, 2007).

Educational software can help students follow a clear structure and allows students to plan properly (Lai and Law, 2006). Scaffolding is often used in order to support problem-based learning (PBL). Learners in the classroom become researchers and often work in small groups to analyze problems, determine solutions, and evaluate problems when utilizing PBL (Hoffman and Ritchie, 1997).

## **7.5. CHOMSKY AND VYGOTSKIAN VIEW ON THE ORIGINS OF LANGUAGE**

According to Chomsky, at least part of language must be accounted for by special language-learning mechanisms employing innate knowledge about the general nature of grammars. This knowledge limits the generalizations children are capable of making about the language they hear. The mechanism that embodies the innate knowledge is known as the LAD. Chomsky claims that only those aspects of communicative competence which seem to be similar or identical across all languages and which seem to be particular language are argued to be innate. These aspects are said to be central and crucial to the development of human language.

Chomsky's nativist view to language development is a biological and maturational one that regards language as a formal system. He takes the view that the language sample that a child might hear from her parents or others would not be sufficient to allow her to deduce the complex rule systems of adult language. In order that a child can learn this complex system, it must be the case that human infants are born with some of this knowledge. Language knowledge is innate and universal. The task for children is to discover which particular language community they are in, and they apply the universal rules of language to that particular version. Chomsky believes that much of a child's speech is composed of original constructions and could not, therefore, have been copied from an adult.

Chomsky defines linguistic competence as the deep-seated mental state that exists below the level of conscious knowledge use by which young children are allowed to generate a large set of utterances in their talk. To him, language emergence is the innate biological function of LAD. Chomsky defines language as an individual's knowledge of systems and rules, the parameters and principles of language.

In contrast, Vygotsky's sociocultural view is the idea of the child as a social being, as one involved in the social order of things from the very stages



of life. He links the person with the environment in which they are living and learning. His view is that language is inextricably tied to cognitive and behavioral systems, to the way people think and their social behavior. He describes language as interacting with the individual's cognitive and social development and as serving their continuous development. The three aspects of the person, the cognitive, the social and the linguistic are interdependent and continue to develop in an inter-related way throughout the lifespan.

Vygotsky believes that language develops first in social interactions with adults or peers with the sole objective of communicating. As it is mastered, language is internalized to support thought and inner speech dialogs, that is, thought is largely the product of language, not vice versa. Vygotsky developed this view to include the use of sign systems such as language created by societies to serve their unique needs.

He suggests that these systems are not fixed but that they are dynamic and amenable to change. Vygotsky parallels the child's development in language with cultural changes. His theory rests on the fundamental premise that development occurs on a social level within a cultural context. He suggests that the child learns by internalizing processes witnessed in the social activity in the environment.

The young child moves from a social plane to an individual plane, or in the terms of Vygotsky's theory, from the inter-psychological functioning to intra-psychological functioning.

The connection between these two planes is to be found in the mediating function of signs, and in particular speech. Experienced first through interactions with others, the functions of speech are gradually internalized until they become the means for self-directed mental activity. Hence, central to Vygotsky's theory is the view that intellectual growth is contingent upon learning language which he regards as the social means of thought.

A central idea to Vygotsky's descriptions of language learning in young children is that of inner or private speech. This is sometimes referred to as speech-for-oneself. He suggests that children find it helpful to speak aloud about what they are doing.

This talk can take many forms, as a monolog, a dialog or a multi-person interaction. Such private talk may not be meaningful to the hearer because the over hearer is not able to share what is going on inside the child's thoughts.

## 7.6. PIAGET AND VYGOTSKIAN VIEW ON LANGUAGE DEVELOPMENT

Vygotsky's theory contrasts with Piaget's in terms of the importance of social interaction and instruction and the relationship between language and thought. Although Piaget did occasionally refer to social interaction as a factor in development, he neglected it. He conceived its role as merely assisting a pattern of cognition within the child to develop independently, while Vygotsky conceived of a qualitatively different role for social interaction. In his view, the pattern of social interaction determines the structure and pattern of internal cognition.

Piaget argued that cognitive development is a spontaneous process. Cognitive structures develop without any direct teaching from adults. He suggested that the idea of spontaneous development is unpopular because of its slowness, whereas direct teaching seems desirable because it can speed up development. However, he argued that slowness may be one of the signs of fruitful invention (Crain, 1992) and speculated that by virtue of differences in activity/experience alone development, individual differences (IDs) in rates of development are bound to emerge.

Vygotsky argued that Piaget had overlooked the impact of cultural context on development. According to Vygotsky, interactions with adults and peers, as well as instruction, are essential for cognitive development. He argued that although children might develop some concepts on their own through everyday experience, they would not develop purely abstract modes of thought without instruction in abstract sign systems. He believed that instruction is essential to reach the highest level of thinking. He argued that purely abstract levels of thinking are only prevalent in technologically advanced societies which emphasize formal instruction.

Piaget pointed to the completion of general sensorimotor development and the onset of symbolic functions. Language does not appear earlier because it is part of the development of symbolic functions which provides the capacity for mental representation, imagery, imitation, and pretend play as well as spoken language. Language is thus a product of this exciting period of cognitive development. Vygotsky takes a different view. For him, language develops first in social interactions with adults or peers with the sole objective of communicating. As it is mastered, it is 'internalized' to support thought and "inner speech" dialogs. Therefore, for Vygotsky, thought is largely the product of language, not the other way around. In L1 research recently, Vygotsky ideas are getting more and more support.

To Piaget, knowledge is not information to be delivered at one end, and encoded, memorized, retrieved, and applied at the other end. Instead, knowledge is experience that is acquired through interaction with the world, people, and things. Piaget shows that indeed kids have good reasons not to abandon their views in the light of external perturbations. Conceptual change has almost a life of its own. While capturing what is common in children's thinking at different developmental stages—and describing how this commonality evolves over time—Piaget's theory tends to overlook the role of context, uses, and media, as well as the importance of individual preferences or styles, in human learning and development (Table 7.1) (Johnson, 2004).

**Table 7.1.** Stages and Characteristics of Language Development

Stage	Characteristics
Sensorimotor (Birth-2 years)	The infants learn about their surroundings by using their senses and motor skills. Differentiates self from objects. Recognizes self as agent of action and begins to act intentionally (e.g., shakes a rattle to make a noise). Formation of concept of "object permanence" and gradual progression from reflexive behavior to goal-directed behavior. Learning occurs through assimilation and accommodation.
Pre-operational (2-7 years)	Development of the ability to use symbols and pictures to represent objects in the world. Thinking remains egocentric and centered. They Classify objects by a single feature. Child's thinking is its focus on states.
Concrete op- erational (7-11 years)	Improvement in ability to think logically about objects and events. New abilities include the use of operations that are reversible. Achieves conservation of number (age 6), mass (age 7), and weight (age 9). Classifies objects according to several features Being using inductive logic, or reasoning from information to a general principle.
Formal opera- tional (11 years and up)	Abstract and purely symbolic thinking possible or abstract thought emerges. Problems can be solved through the use of systematic experimentation. Teens begin to think more about moral, philosophical, ethical, social, and political issues that require theoretical and abstract reasoning. Being to use deductive logic or reasoning from a general principle to specific information. It concentrates on the form of argu- ment without being distracted by the content.

<b>Assimilation</b>	Interpreting new experiences in relation to existing schema. The process by which a person takes material into their mind from the environment, which may mean changing the evidence of their senses to make it fit, specially assimilating a new object into an old schema(an infant knows how to grab his favorite rattle and thrust it into his mouth). Through it, we take in new information or experiences and incorporate them into our existing ideas.
<b>Accommodation</b>	Old ideas are changed or even replaced based on new information. Remember, if new experiences cause the person to alter or completely change their existing beliefs, then it is known as accommodation.
<b>Class inclusion</b>	A skill learned during the concrete operational stage of cognitive development in which individuals can think simultaneously about a whole class of objects as well as relationships among its subordinate classes.
<b>Conservation</b>	The realization that objects or sets of objects stay the same even when they are changed about or made to look different (changes in appearance).
<b>Egocentrism</b>	The belief that you are the center of the universe and everything revolves around you
<b>Schema</b>	The representation in the mind of a set of perceptions, ideas, and/or actions or background knowledge (Brown, 2007). It can be simple(when a baby knows how to grasp an object within reach) or complex(when a high school student learns how to attack mathematical problems). It can be classified as behavioral (grasping, driving a car) or cognitive (solving problems, categorizing concepts). According to Brown (2007), Schemata (plural) are divided into two categories: Content Schemata (what we know about people, world, culture, and the universe), and Formal Schemata (which consist of our knowledge about language and discourse structure).
<b>Object permanence</b>	Child assumes that objects no longer exist if they're not visible.
<b>Focus on states</b>	Focus only on the beginning state and end state
<b>Reflexive behavior</b>	Inborn, automatic responses to stimuli (e.g., eye blinking response to bright light).

<b>Equilibrium</b>	The child requires a stable internal world. The child needs to accommodate to restore the balance, i.e., alter perception of how things work. Piaget saw the desire for equilibrium as innate and believed that it drives or motivates us to learn.
<b>Transitivity</b>	A skill learned during the concrete operational stage of cognitive development in which individuals can mentally arrange and compare objects.
<b>Reversibility</b>	The child understands that numbers or objects can be changed, then returned to their original state. For this reason, a child will be able to rapidly determine that if $4+4 = t$ , $t-4$ will equal 4, the original quantity.

## 7.7. SYNTACTIC STRUCTURES IN FIRST LANGUAGE (L1) ACQUISITION

A question which has been lingering in the minds of many developmental psycholinguists is the question of how children acquire the syntactic structure of a language. Apparently, this is due to the fact that children do not hear an adult speaking in abstract syntactic categories and schemas but only in concrete and particular words and expressions. Two types of theories have been put forward to find an answer to the above question:

1. **Continuous Theory:** This theory was first proposed by Chomsky and later on developed by Pinker. According to this theory, children do not have to learn or construct abstract syntactic structures at all, but rather they already possess them as part of their innate language faculty. This assumption (*innate syntactic competence* is fundamentally the same at all points in ontogeny) justifies the use of adult-like formal grammars to describe children's early language. In this view, the 5000 or more natural languages of the world each derive from this same innate universal grammar (UG), differing from one another only in the composition of their lexicons and in a few parametric variations of syntax that are prefigured in the human genome.
2. **Discontinuous Theory:** According to this theory, children are believed to have knowledge of grammatical categories from the very earlier stages (e.g., Bloom, 1994; Brown and Bluggi, 1964; Menyuk, 1969; Pinker, 1984). The child goal is to attach

particular words to the correct grammatical categories, and then use them with the appropriate syntactic rules. In discontinuous theories, early multiword utterances are not governed by adult-like rules (Bowerman, 1973; Braine, 1963; Maratsos, 1983).

Recent research employing both naturalistic and experimental methods has found that the vast majority of young children's early language is organized around concrete, item-based linguistic schemas. From this beginning, children then construct more abstract and adult-like linguistic constructions, but only gradually and in piecemeal fashion. The best account of these data is provided by a usage-based model in which children imitatively learn concrete linguistic expressions from the language they hear around them, and then-using their general cognitive and social-cognitive skills-categorize, schematize, and creatively combine these individually learned expressions and structures.

A number of empirical findings (most notably those of Tomasello) challenge continuous view. Most important is the discovery that virtually all of children's early linguistic competence is item-based. That is to say, children's early utterances are organized around concrete and particular words and phrases, not around any system-wide syntactic categories or schemas. Abstract and adult-like syntactic categories and schemas are observed to emerge only gradually and in piecemeal fashion during the preschool years. These new data are most naturally accounted for by a usage-based model in which children imitatively learn concrete linguistic expressions from the language they hear around them, and then-using their general cognitive and social-cognitive skills-categorize, schematize, and creatively combine these individually learned expressions and structures to reach adult linguistic competence.

## **7.8. THE STAGES OF VOCABULARY AND SYNTAX DEVELOPMENT**

Until the late 1960s, a common assumption held about later language development was that the 5 year old has mastered the syntactic structures of his/her native language (NL) and that later development mainly consisted of the addition of a sophisticated lexicon. This assumption has been challenged by two main psycholinguistic currents (As Karmiloff-Smith puts it). One was cognition-oriented, the other linguistics-oriented.

Those who advocate the cognition-oriented current follow Piaget. Piaget's studies on various categories of knowledge showed that many

crucial cognitive developments took place well beyond the age of 5. The fact that many fundamental cognitive changes have still to take place after the age 5, up to age 14, led psycholinguistic interpreters of *Piagetian theory* to hypothesize that the child's linguistic competence must also reflect these changes beyond the age of 5.

The linguistics-oriented current to challenge early language mastery was exemplified by Carol Chomsky's work on the development of complex constructions. Chomsky hypothesized that children first use linguistic rules which hold for a great number of constructions across a language. The following were considered already to be part of the implicit competence of the under 5-year-old; (a) grammatical subject is equivalent to logical subject; (b) word order necessarily reflects canonical order; c) the implicit subject of a complement verb is the NP most closely preceding it, and so forth. Any structures which violated such general principles would be candidates for acquisition after age 5. Chomsky's experiments on 5 to 10-year-old understanding of complex adjectival, verbal, and pronominal constructions showed that it was a slow process, extending to the age of 10 before the child became able to refrain from overgeneralizing the above rules to all superficially identical constructions. Chomsky argued that the only exception to late acquisition was pronominalization, which seemed to be fully mastered around age 5. She explained the earlier and more uniform acquisition of pronominal reference by the fact that pronominalization does not pertain to any specific word or word class, but derives from general principles which cover the structural relationships obtaining for whole sentences.

As Karmiloff-Smith puts it certain aspects of language are still being acquired by over-5 year old; and that many interacting linguistic and general cognitive problems are involved. Most studies indicated that the over-5 year old does, in some circumstances, have difficulty in understanding that the grammatical subject of a sentence need not necessarily be identified with the agent of the action. Over-5 year-old in the studies appeared also to expect word order to reflect the temporal order of events. The over-5 year old therefore continues to work from sound mini-theories about language, which are correct for many constructions but which have not yet been clearly tagged with standby procedures regarding exceptions.



### 7.8.1. The Role of Motherese in L1

Children seem to be cognitively ready to communicate intentionally by about 8 months of age. Although their speech is not well developed at this time, they utilize gestures in flexible ways to communicate their needs to their caregivers. According to Carrol, true intentional communication occurs when children apply their understanding of means-and-ends relationships of social goals.

Widely different opinions exist on the role of motherese in children's language development. The *motherese hypothesis* (Gleitman, Newport, and Gleitman, 1984) states that there is a relationship between the speech adjustments adults make and children language development. The strong form of this hypothesis claims that these features are necessary for language to develop properly. The weak form of the hypothesis claims that these linguistic features assist a child's development. The strong form came under attack due to inconsistency in research data. Also, it was found that although motherese is widespread, it is not universal cultures (Heath, 1983; Ochs and Schieffelin, 1995; Pye, 1986). Furthermore, there is great variation in the styles of social interaction and the form of child-directed speech (CDS) (motherese) across different cultures (Lieven, 1994). Another point is that the rate of linguistic development is not correlated with the complexity of the children's input (Ellis and Wells, 1980). What seems to be important about CDS is not merely the form of what is said to the children, but, perhaps, the content. In particular, the children who learn fastest are those who receive the most encouragement and acknowledgment of their utterances. In summary, even though CDS might not be necessary for language development, it might, nevertheless, facilitate it.

## 7.9. USING L1 IN L2 CLASSROOM

Different investigators pointed out the pivotal and central role of using L1 in the learners' comprehension, argue in favor of L1 use in the second or foreign language classroom as a strong strategy to accelerate language learning and teaching process (Cook, 2001; Pachler and Field, 2001; Swain and Lapkin, 2000, as cited in Barjesteh and Alinia, 2019). The arguments in supports of using the L1 in L2 instruction clearly inform that not only doesn't the use of the L1 have a negative impact on L2 learning, but it can help students to improve the way they learn a L2. Although English is dominant in communicative language teaching, some research showed that



L1 is used in many ESL classes (Auerbach, 1993). He proposed that, when NL is used in ESL classes, researchers, learners announce positive results. Cook (2001), an advocate of the role of L1 revealed that “bringing the L1 back from exile may lead not only to the improvement of existing teaching methods but also to innovations in methodology” (p. 189). Mattioli (2004) proposes that “most teachers tend to have opinions about NL use, depending largely on the way in which they have been trained and, in some cases, on their own language education” (p.21). A study was conducted by EFL learners and their instructors in a Spanish context by Schweers (1999) to investigate their attitudes toward using the L1 in the L2 classroom (Barjesteh and Alinia, 2019).

### 7.9.1. The Relationship Between Language and Thought

The connection between language and thought is profound. The majority of our everyday life involves the use of language. We tell our ideas to others with language, we “read” their responses and understand their meanings with language, and very often, we “speak” internally to ourselves when we process this information and make logical conclusions. It seems that rational thinking unavoidably involves a certain degree of the use of language. This connection seems so tight that, some linguists like Sapir and Whorf had to propose that thought is indeed utterly determined by language. On the other hand, some linguists hold that language and thought are two separate and independent entities. The differences in the syntactic structure and the lexicons available in different languages, for example, cannot possibly determine the way these people think. Thus we have thought in the very first place, and then language came in as a tool for expressing our thought. Still, some others, not feeling contented with either version, proposed a third possibility, that language and thought are interdependent. “Language is a regular part of the process of thinking... It is not a question of one notion taking precedence over the other, but of both notions being essential.” While the conclusion on this issue is not a simple this-or-that answer and cannot be easily drawn, this chapter will nevertheless try to provide adequate evidences in linguistic and psycholinguistic studies and seek for a reasonable conclusion.

### 7.9.2. Thought Without Language

The strong form of *Sapir-Whorf Hypothesis* proposes that language determines thought; therefore, they are identical in nature. This argument

in fact implies that thought is impossible without language. Language is a carrier of thought, just like water is to water waves. Without water acting as a medium, water waves cannot possibly exist. Following Crystal's argument, it is unarguable that many kinds of 'thinking' behavior, such as emotional expressions and painting, do not involve the use of language (Crystal, 2002). Therefore, in this chapter, we will restrict ourselves to the discussion of *rational thinking* only. However, one can find quite some evidences against such claim. Consider a newborn baby who has not yet acquired any language, experiments have shown that "infants are capable, during the first day of their life, of a kind of reaching... they are able to project their arms in the direction of a visually perceived moving object. The newborns reaching behavior manifests his capacity to process certain categories of information related to the situation and to his own actions.<sup>3</sup>" Since this reaching behavior is telic and has a certain aim, the action cannot be merely reflexive, and there must be a rational cognitive process behind.

In addition, Sachs, Truswell, and others have shown that "children who could say only single words could understand speech structures composed of more than one word, e.g., *Kiss ball* and *Smell truck*." According to Steinberg, "The fact that children have the ability to understand speech indicates that they must have the thought that is involved in the comprehension of speech." Another example of thought without language is given by the higher animals, such as apes and birds. It is commonly agreed that animals do not have language; yet, numerous experiments and observations have been done on these animals, and it has been observed that they possess at least some degree of cognitive ability, which allows them to perform cognitive processes such as problem solving tasks, matching, and simple additions. When language has been taught to these animals, they could even use them creatively. "For example, one chimp who knew the signs for *rock*, *berry*, *water*, and *bird* combined those signs to express new concepts when coming into contact with a Brazil nut and a duck; the chimp signed *rock-berry* and *water-bird*. It would be hard to claim that these animals are able to think but that their brothers and sisters cannot.

The possibility of thought without language does not only appear in these immature or non-human subjects. Even as adults with full language ability, we occasionally find ourselves better thinking in terms of imagery representations. Especially in the fields of mathematics and physics, where abstract concepts are sometimes hard to describe in words, schematic graphs are often employed to simplify the problems. Jansons, a mathematician who suffered a condition called dyslexia which brought him great difficulties in

reading and writing, explained that he did a lot of his mathematics without words of any kind:

### 7.9.3. The Dependence of Thought on Language

We have seen that the strong form of *Sapir-Whorf Hypothesis* simply does not work. If language were identical to thought, we would not be able to think without language, which is not the case. Then, we ask, is thought dependent on language, as suggested by the weak form of Sapir-Whorf Hypothesis? Or in Whorf's own terms, does language determine our *habitual thought*? It is important to first understand the term 'habitual thought.' Whorf has explained himself as follows, By "habitual thought" I mean more than simply language, i.e., than the linguistic patterns themselves. I include all the analogical and suggestive value of the patterns (e.g., our "imaginary space" and its distant implications), and all the give and take between language and the culture as a whole, wherein is a vast amount that is not linguistic but yet shows the shaping influence of language. In brief, this "thought world" is the microcosm that each man carries about within himself, by which he measures and understands what he can of the macrocosm.

Even though Frawley has commented that Whorf's meaning was not entirely clear, we will nevertheless understand it as the *general tendency in thinking*. And since this tendency is common among speakers of the same language, Whorf argued that the world view or the culture of a particular linguistic group is dependent on their common language. Whorf has given us one such example. When he worked for an insurance company, he was responsible for inspecting the causes of fires. He discovered that the term "empty gasoline drums" often mislead workers to think that the drums were indeed "empty" and safe. He reasoned that the word "empty" is used in two linguistic patterns:

1. As a virtual synonym for 'null and void, negative, inert'; and
2. Applied in analysis of physical situations without regard to, e.g., vapor, liquid vestiges, or stray rubbish, in the container.

Therefore, the use of these terms affects the way people think. However, Whorf failed to notice that such discrepancy between the word used (*empty*) and the reality (*filled with gasoline vapor*) is not due to linguistic reasons, but simply ignorance. Consider a chemist performing an experiment, such as electrolysis of water, and assume that he covers the experimental setup with a container. As the water is electrolyzed, it gradually disappears. Yet the chemist would not claim that the container is empty, because he understands

that hydrogen and oxygen have been produced inside. On the other hand, it was the ignorance of the workers which made them fail to realize the existence of gasoline vapor inside the drums, not the superficial meaning of the word “empty.”

Whorf has also illustrated his view by taking examples from different languages. He argued that in different languages, there are different lexicons which classify things in different fashions; therefore, we actually see the world differently. For example, there is a word for everything that flies except birds in the language Hopi, whereas in English, such kind of classification seems weird and alien, and we do not tend to see things that way. Similarly, in the language Dani, there are only two basic color terms, one for “dark” and one for “light,” whereas in English and many other languages, there are many more. But Frawley has pointed clearly, that this kind of differences can just be linguistic differences. Despite the different vocabularies in different languages, we can understand each other well provided that enough explanation is given on the terms concerned, and we obviously have the same biological system to sense and perceive different colors. After all, the variety of vocabularies clearly does not reflect our perception of the world, as even though we do not have a word for “male dog” (cf. *bitch* for female dog) or “back of hand” (cf. *palm* for the front or underside) in English, we are certainly aware of these ideas.

In addition, if language indeed reflects world view, we will have to ask why there are totally different world views among the same linguistic group, while people speaking different languages can share similar world views. More interestingly, what kind of world view does a multilingual hold if his world view is dependent on languages signifying contradicting world views? Moreover, the world view of a society may change while its language remains relatively unchanged. For instance, China has changed from Feudalism to Capitalism to Communism in less than 100 years, while the language has changed little. Then, in what way does the language reflect the habitual thought of Chinese people?<sup>14</sup> It seems that we are left no choices but to admit that if language determines any tendency in our thinking, it is in a very limited sense and cannot constitute what Whorf has suggested to be “habitual thought.”

#### **7.9.4. Interdependence or Independence?**

If language does not determine nor influence our thought, and its existence is merely an aid to thought; language, then, seems to us to be more like a tool

of thought than a part of it. Steinberg has summarized three main functions of language to thought:

- Providing new ideas;
- Changing beliefs and values; and
- Assisting memory.

It is seen that all of these functions only provide media for influencing our thought, but language itself does not alter the nature, content, and direction of it. Steinberg noted that language itself is neutral to the thought which it conveys. Therefore, even though language is significant in rational thinking, such importance is only due to the fact that language assists our memory and labels abstract ideas with words and sounds which can be more easily processed.

Since language seemingly plays only an assisting role to thought, it is then hard to argue why language and thought might be considered interdependent. Those who argue that they are interdependent because language is a regular part of everyday thinking simply do not provide a satisfactory reason. For comparison, we can consider the case of computer. While computers are in very widespread use for communication nowadays, do we claim that computer and thought are interdependent? The same is true to art, are we to claim that to artists who often think in terms of pictorial representations, art, and thought are interdependent? The answer to both questions is obviously no, as they are only means or tools for communicating our thought.

## 7.10. MODULARITY

Most recent nativist theories have suggested the role of genetically specified modules committed to the processing and accumulation of specific kinds of information (domains). According to these theories, development is domain-specific in contrast to the domain-general development proposed in theories like that of Piaget. These theories have argued that our knowledge and cognitive processes are “wired in” on the basis of genetic information. According to these theories, development, i.e., growth or maturation is simply the expression of a kind of genetic program. The proponents of this line of thinking base their claim on evidence of language acquired in ‘exceptional circumstances. For example, studies of Down Syndrome, autism, Specific Language Impairment, sufferers from Williams Syndrome and Savants.

Modularity metaphors have been fueled by a new brain-scanning technology called functional magnetic resonance imaging (fMRI). We

have all seen scans with highlighted (usually in red) areas where your brain “lights up” when thinking about X (money, sex, God, and so on). This new modularity metaphor is so intriguing that it has been employed in several books on the evolution of religion (belief modules), morality (moral modules) and economics (money modules). There is a skeptical movement afoot to curtail abuses of the metaphor, however, and it is being driven by neuroscientists themselves.

Additional skepticism arises from knowing that fMRI measures blood-flow change, not neuronal activity, that the colors are artificially added in order to see the blood-flow differences and that those images are not any one person’s brain but are instead a statistical compilation of many subjects’ brains in the experiment. “Some of the claims made by neuroscientists sound like astrology,” Poldrack told me in an interview. “It’s not the science itself that is the problem. It’s taking a little bit of science and going way beyond it.” For example, there is the problem of reversing the causal inference, “where people see some activity in a brain area and then conclude that this part of the brain is where X happens. We can show that if I put you into a state of fear, your amygdala lights up, but that doesn’t mean that every time your amygdala lights up to you are experiencing fear. Every brain area lights up under lots of different states. We just don’t have the data to tell us how selectively active an area is.”

Apparently, three important questions can be proposed regarding the modularity debate. *First*, the question of localization: at what level is the brain modular? *Second*, the question of ontogenetic and pathological universals: when and how do certain functions become modularized? *Third*, the question of domain specificity: are modules independent of one another?

First, with respect to localization, the important question for future theorizing will be why is it that certain areas take on the functions that they do in default circumstances, and why can other areas support the same functions with a fair degree of success in certain atypical circumstances but not others? With respect to ontogenetic and pathological universals, we need to ask: how can we characterize the developmental process in each case? How do altered sensitivities affect the developmental process and give rise to different phenotypic outcomes? With respect to domain-specificity, future theorizing should focus on the following issues: are there general principles by which our species handles and organizes input to produce coherent units and learn regularities? And finally, how do these domain-relevant mechanisms progressively give rise to the specialized and complex

adult brain? In our view, these types of questions will further the modularity debate on the relations between syntax, the lexicon, and other neurocognitive domains, beyond the claims of adult neuropsychological models, and where the gradual process of development is center stage.

### 7.10.1. Modularity and Domain Specificity

The word “module” is used in markedly different ways by neuroscientists and behavioral scientists, a fact that has led to considerable confusion and misunderstanding in interdisciplinary discussions of brain and language. When a neuroscientist uses the word “module,” s/he is usually trying to underscore the conclusion that brains are structured, with cells, columns, layers, and/or regions that divide up the labor of information processing in a variety of ways. In all fairness, there are few neuroscientists or behavioral scientists who would quibble with this claim. Indeed, Karl Lashley himself probably had something similar in mind, despite his notorious claims about equipotentiality and mass action (Lashley, 1950). In cognitive science and linguistics, the term “module” refers to a stronger and more controversial claim, one that deserves some clarification.

The strongest and clearest definition of modularity in cognitive science comes from Jerry Fodor’s influential book *Modularity of mind* (Fodor, 1983; Fodor, 1985). Following Noam Chomsky (Chomsky, 1957, 1965, 1988), Fodor argues that human language fits this definition of a module. Elaborating on this argument, Fodor defines modules as cognitive systems (especially perceptual systems) that meet nine specific criteria. Five of these criteria describe the way that modules process information. These include *encapsulation* (it is impossible to interfere with the inner workings of a module), *unconsciousness* (it is difficult or impossible to think about or reflect upon the operations of a module), *speed* (modules are very fast), *shallow outputs* (modules provide limited output, without information about the intervening steps that led to that output), and *obligatory firing* (modules operate reflexively, providing pre-determined outputs for pre-determined inputs regardless of the context). As Fodor himself acknowledges (Fodor, 1985), these five characteristics can also be found in acquired skills that have been learned and practiced to the point of automaticity (Schneider and Shiffrin, 1977; Norman and Shallice, 1980).

Another three criteria pertain to the biological status of modules, to distinguish these behavioral systems from learned habits. These include *ontogenetic universals* (i.e., modules develop in a characteristic sequence),



*localization* (i.e., modules are mediated by dedicated neural systems), and *pathological universals* (i.e., modules break down in a characteristic fashion following some insult to the system). It is assumed (although this assumption may not be correct) that learned systems do not display these particular regularities. The ninth and most important criterion is *domain specificity*, i.e., the requirement that modules deal exclusively with a single information type, albeit one of enormous relevance to the species.

Fodor's version of modularity unifies the three claims that language is innate, localized, and domain-specific. This is a thoroughly reasonable proposal, but other forms of mental and neural organization are possible. In fact, all logical combinations of innateness, domain specificity and localization may be found in the minds and brains of higher organisms.

### **7.10.2. General Arguments Against the Domain Specificity of Language**

A long-standing skepticism about the mental-organ claim is based on four kinds of evidence:

- Phylogenetic recency;
- Behavioral plasticity;
- Neural plasticity; and
- The arbitrariness of mappings from form to meaning.

None of these arguments constitute a disproof of domain specificity, but together they weaken its plausibility. The strongest evidence to date in favor of domain specificity comes from rare cases in which language appears to be remarkably spared despite severe limitations in other cognitive domains. Etiologies associated with this unusual profile include spina bifida and hydrocephalus, and a rare form of mental retardation called Williams Syndrome, or WMS (Bellugi, Bihle, Neville, Jernigan, and Doherty, 1991; Jernigan and Bellugi, 1990). In short, the dissociations between language and cognition observed in SLI (where language < cognition) and in Williams Syndrome (where language > cognition) cannot be used to support a mental-organ view. Things are just not that simple. Instead, these unusual profiles offer further evidence for the behavioral and neural plasticity of language. There are many ways to solve the problem of language learning. Some are more efficient than others, to be sure, but the problem can be solved with several different configurations of learning, memory, perception, and cognition. This brings us to my final point: How is it that language is learnable? There



is a branch of language acquisition research called “*learnability theory*” (e.g., Lightfoot, 1991), which uses formal analysis to determine the range of conditions under which different kinds of grammars can (in principle) be learned. Until recently, most of this research has been based upon the assumption that language learning in humans is similar to language learning in serial digital computers, where *a priori* hypotheses about grammatical rules are tested against strings of input symbols, based on some combination of positive evidence (“here is a sentence in the TL”) and negative evidence (“here is a sentence that is not permitted by the TL”). A famous proof by Gold (1967) showed that a broad class of grammars (including generative grammars of the sort described by Chomsky) could not be learned by a system of this kind unless negative evidence was available in abundance, or strong innate constraints were placed upon the kinds of hypotheses that the system would consider. Since we know that human children are rarely given explicit negative evidence, the learnability theory seems to require the conclusion that children have an extensive store of innate and domain-specific grammatical knowledge. In the last 2 years, this conclusion has been challenged by major breakthroughs in the application of a different kind of computer architecture (called neural networks, connectionism, and/or parallel distributed processing (PDP)) to classic problems in language learnability. Because connectionism makes a very different set of assumptions about the way that knowledge is represented and acquired, Gold’s pessimistic conclusions about language learnability do not necessarily apply. This new era began in 1986 with a simulation by Rumelhart and McClelland (1986) on the acquisition of the English past tense, showing that connectionist networks go through stages that are very similar to the ones displayed by children who are acquiring English (producing and then recovering from rule-like overgeneralizations like “comed” and “wented,” in the absence of negative evidence). This simulation has been severely criticized (Pinker and Prince, 1988; Kim, Pinker, Prince, and Sandup, 1991). However, a number of new works have appeared that get around these criticisms, replicating, and extending the Rumelhart-McClelland findings in several new directions (Elman, 1991; MacWhinney, 1991; Plunkett, Marchman, 1993; Marchman, 1993). The most recent example comes from Marchman (1993), who has “lesioned” neural networks at various points during learning of the past tense (randomly eliminating between 2% and 44% of the connections in the network). These simulations capture some classic “critical period” effects in language learning (e.g., smaller, earlier lesions lead to better outcomes; later, larger lesions lead to persistent problems in grammar), showing that

such effects can occur in the absence of “special” maturational constraints (compare with Newport, 1990, and Elman, 1991). In addition, Marchman’s damaged systems found it more difficult to acquire regular verbs (e.g., “walked”) than irregulars (e.g., “came”), proving that the *specific* pattern of deficits described by Gopnik and by Pinker can result from *non-specific* forms of brain damage in a general-purpose learning device. Such research on language learning in neural networks is still in its infancy, and we do not know how far it can go. But it promises to be an important tool, helping us to determine just how much innate knowledge has to be in place for certain kinds of learning to occur. In short, a great deal has been learned in the last few years about the biological foundations for language development. Evidence for innateness is good, but evidence for a domain-specific “mental organ” is difficult to find. Instead, language learning appears to be based on a relatively plastic mix of neural systems that also serve other functions. The researcher believes that this conclusion renders the mysteries of language evolution at issue in this volume somewhat more tractable. That is, the continuities that we have observed between language and other cognitive systems make it easier to see how this capacity came about in the first place (Ellis, 2008).

## 7.11. LANGUAGE OF THOUGHT (LOT)

In his (1975) Jerry Fodor offered a bold hypothesis: the medium of thought is an innate language that is distinct from all spoken languages and is semantically expressively complete. So-called “Mentalese” is supposed to be an inner language that contains all of the conceptual resources necessary for any of the propositions that humans can grasp, think or express—in short, the basis of thought and meaning. While few have followed Fodor in adopting this extreme hypothesis, some weaker form of a language of thought (LOT) view, i.e., that there is a mental language that is different from human spoken languages, is held by many philosophers and cognitive scientists. As we will see below, however, although it is fairly clear that (some) thought *is* linguistic, there is no basis for believing in a Mentalese, let alone an innate, semantically complete Mentalese.

Fodor’s LOT hypothesis may be divided into five component theses:

1. **Representational Realism:** Thinkers have explicit representational systems; to think a thought with a given content is to be appropriately related to a representation with the right meaning, e.g., to have the belief that capitalism breeds greed is to

have a representational token with the content “capitalism breeds greed” in one’s belief box.

2. **Linguistic Thought:** The (main) representational system that underlies human thought, and perhaps that underlies thought in other species too, is semantically and syntactically language-like, i.e., it is similar to spoken human languages. Specifically, this representational system consists of syntactic tokens that are capable of expressing propositional meanings in virtue of the semantic compositionality of the syntactic elements. E.g., there are mental words that express concepts (and the like) that can be formed into true or false mental sentences.
3. **Distinctness:** The LOT is not identical to any spoken language.
4. **Nativism:** There is a single genetically determined mental language possessed by humans, and perhaps (at least partially possessed) by all other thinking species.
5. **Semantic Completeness:** This language is expressively semantically complete--any predicate that we are able to semantically comprehend is expressible in this language.

Fodor developed and made explicit a theory of learning inspired by Chomsky. According to this theory, in order to learn a language or concept, one has to have a language as complex, rich and semantically powerful as the language one is learning. For him, learning is a process of hypothesis formation and confirmation. He also views learning as translation from the LOT into public language. For him, experience role is not to provide new concepts or new content to the mind or LOT, but to trigger or select the relevant parts of the LOT.

Learning a language, according to this theory, is an individual mental process because it is the individual who, when confronted by experience, utilizes his or her own private LOT. Other people play no essential role in teaching the child language. Furthermore, this theory has little room for social conventions and interactions to shape what is learned.

## 7.12. THE FINDINGS OF CHILD LANGUAGE STUDIES IN SLA

There are different approaches to the study of child language, and researchers investigate different aspects of the language acquisition process. For example, some will focus on testing particular theoretical claims; others

on developmental, cognitive, or social factors in the acquisition process; others on the development of a particular feature of language; and others on what we might learn about language development from studying what goes wrong in particular situations.

A number of questions underlie the theorizing and research on language acquisition. A crucial question is ‘What does the child bring to the task of language acquisition?’ (or ‘What is the ‘initial state?’) There is disagreement in the field as to whether linguistic concepts are innate or whether general cognitive abilities are sufficient for the child to acquire a language. The issue, then, is to what extent domain specific or domain general tools are involved in acquiring a language. A related question is: Are there constraints or biases that influence the child’s acquisition of language, and if so, what is their origin? This question is discussed in relation to the pre-linguistic domain: infants’ segmentation of the input language, as well as their development of word learning, that is, the mapping of form and meaning. Some of the word learning literature argues for innate biases. However, biases develop with exposure to a language (Smith, 1999). There are other questions-fundamental to particular aspects of the study of child language-questions related to cross-linguistic and cross-cultural similarities in the course of language acquisition, whether there are different trajectories in acquiring one or two languages and how the study of atypical language development informs theories of typical language acquisition (Barjesteh and Alinia, 2019).

### **7.13. SLA VS. L1 LEARNING**

Studies show that the order in which a language is learned by children in terms of syntax and morphemes, for example is highly similar in many cases between L1 and L2, (Dulay and Burt, 1974) that in fact the so-called errors that a child makes in learning English as a L2 are similar to those of a child learning English as L1. So negative interference as expressed in the audio-lingual concepts seems to be highly unimportant in affecting the learning processes between the two types of learners of English if one were to give a high level of importance to this study. Dulay and Burt (1974) specifically studied children in the ppc2 stage of 6 to 8 years of age.

They concluded that “The learners’ L1 does not affect the order of development in child SLA, (Ellis, 1994, p.57). This again is consistent with the implicit concept of UG as enunciated by Chomsky (1965.) And as Ellis states in regards to the LAD, “the idea that there is an independent

linguistic faculty which determines SLA is tenable” (Ellis, 1994, p.14). The caveat is that L2 learners seem better able to learn core rules as compared with L1 learners who are better capable of acquiring specific rules. (Corder p.168) Possibly indicative that  $L1 = L2$  is not such a clean proposition (for children), Dulay’s and Burt’s earlier results for Spanish children seem less conclusive in support of  $L1 = L2$ .

Corder (1967) does not contest the relevancy of LAD in SLA but rather sees an L2 learner as having a different set of hypotheses to test than a native learner exclusively studying 12 his or her mother tongue (p.168). But can we describe the learning process as being essentially different between L1 and L2 learning because of Corder’s insights? Or can one say that the L1 learning strategy may be somewhat different to an L2 learning strategy, instead. He infers that the SL learner’s use of the LAD is largely facilitated by having existing input of his “mother” language. Suffice it to say, the differences between language acquisition and language learning strategy will not be further explored given the significant attention already given to defining and framing the question.

A continuing theme has been whether people acquire a L2 in the same way as a first. If the L2 stages outlined above are also followed by L1 children, both groups are probably using the same learning process. The L2 sequence for English grammatical morphemes was similar, though not identical, to that found in L1 acquisition by Brown (1972), the greatest differences being the irregular past tense (broke), articles (the), copula, and auxiliaries (Dulay, Burt, and Krashen, 1982). Other similar sequences of syntactic acquisition have been found in L1 and L2 learnings. L2 learners, like L1 learners, start by believing that John is the subject of please in both John is easy to please and John is eager to please and only go on to discover it is the object in John is easy to please after some time (Cook, 1973; d’Anglejan and Tucker, 1975). L2 learners, like L1 children, at first put negative elements at the beginning of the sentence No the sun shining and then progress to negation within the sentence That’s no ready.

More focused research efforts into whether L1 and L2 learning were similar and the dynamics of implicit learning have been accelerated since the 1960s, through a broad though incomplete list of scholars (Brown, 1980; Chomsky, 1959, 1969. Corder, 1967; Dulay and Burt, 1973–1974; Ellis, 1984; Krashen, 1982). A good number of these works examined learning theory in the context of children. But the survivability of explicit teaching, even into early middle school, may tell us either that explicit learning has

its use in late prepubescent children and/or the archaicness of grammar-translation methods in these school systems. This author tends to support the former with qualifications after applying communicative teaching to first year Korean middle school students for almost 6 years. A subsequent investigation into definitions and theoretical considerations and applications will hopefully provide more insights into these observations.

Scholars such as Krashen have used their views on the dominance of implicit learning not only among children but adults, as well so as to underscore the extensive weighting they place on implicit learning in either L1 or L2, (Krashen, 2002, p.1). His emphasis on communicative (notational-functional) learning is an application of an implicit learning hypothesis which has had at least some effect on SLA curriculum development within the school system. For example, the Koreans, Japanese, and Hong Kong authorities have over recent years expanded their NS programs within the elementary to high school levels so as to encourage communicative learning as supportive of implicit approaches. That is, curriculum in SLA, especially for children, needs to emphasize daily and functional types of exposure and usage rather than excessive focus on grammar and lecture based types of explicit learning. However, these programs form a small part of the SLA learning picture, especially in Chinese and Korean public schools.

Various researchers have concentrated on those errors which demonstrate the influence of one's NL to second language acquisition (SLA). Before Corder's work, interference errors were regarded as inhibitory; it was Corder who pointed out that they can be facilitative and provide information about one's learning strategies (point 7, listed above). Claude Hagège (1999) is a supporter of this concept, and he mentions it in his book "The child between two languages," dedicated to children's language education. According to Hagège, interference between L1 and L2 is observed in children as well as in adults. In adults, it is more obvious and increases continuously, as a monolingual person gets older and the structures of his L1 get stronger and impose themselves more and more on any other language the adult wishes to learn. In contrast, as regards children, interference features will not become permanent unless the child does not have sufficient exposure to L2. If there is sufficient exposure, then instead of reaching a point where they can no longer be corrected (as often happens with phonetics features), interference features can be easily eliminated. Hagège stresses that there is no reason for worry if interference persists more than expected. The teacher should know that a child that is in the process of acquiring a L2 will subconsciously invent structures influenced by knowledge he already possesses. These hypotheses

he forms may constitute errors. These errors, though, are completely natural; we should not expect the child to acquire L2 structures immediately.

The influence of L1 on L2 was also examined by Lakkis and Malak (2000), who concentrated on the transfer of Arabic propositional knowledge to English (by Arab students). Both positive and negative transfer were examined in order to help teachers identify problematic areas for Arab students and help them understand where transfer should be encouraged or avoided. In particular, they concluded that “an instructor of English, whose NL is Arabic, can use the students’ L1 for structures that use equivalent prepositions in both languages. On the other hand, whenever there are verbs or expressions in the L1 and L2 that have different structures, that take prepositions, or that have no equivalent in one of the languages, instructors should point out these differences.”

Not only was L1 influence examined according to language pair, but according to the type of speech produced (written vs. oral). Hagège (p. 33) discusses the influence of L1 on accent; he notes that the ear acts like a filter, and after a critical age (which Hagège claims is 11 years), it only accepts sounds that belong to one’s NL. Hagège discusses L1 transfer in order to convince readers that there is indeed a critical age for language acquisition, and in particular the acquisition of a native-like accent. He uses the example of the French language, which includes complex vowel sounds, to demonstrate that after a critical age, the acquisition of these sounds is not possible; thus, learners of a foreign language will only use the sounds existing in their NL when producing L2 sounds, which may often obstruct communication. All in all, on the basis of the above evidence and studies, one can argue that SLA to a great extent follows the footprints of L1 acquisition studies. The field of SLA, like many other disciplines, is surrounded by a host of undecipherable gray areas which do not verge on either black or white (Barjesteh and Alinia, 2019).





## CHAPTER 8

# KEY TERMS IN SECOND LANGUAGE ACQUISITION

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## 8.1. RESTRUCTURING

A concept of importance within the framework of information processing is that of restructuring, which takes place when qualitative changes occur in a learner's internal representation of the second language (L2) or in the change in the use of procedures—generally from inefficient to efficient. In terms of child language acquisition, McLaughlin described restructuring in the following way: “Restructuring is characterized by discontinuous, or qualitative change as the child moves from stage to stage in development. Each new stage constitutes a new internal organization and not merely the addition of new structural elements.” Lightbown (1985, p. 177) provides the following rationale for restructuring: [Restructuring] occurs because language is a complex hierarchical system whose components interact in nonlinear ways. Seen in these terms, an increase in error rate in one area may reflect an increase in complexity or accuracy in another, followed by over-generalization of a newly acquired structure, or simply by a sort of overload of complexity which forces a restructuring, or at least a simplification, in another part of the system.

McLaughlin and Heredia (1996) relate restructuring, or representational changes, to a novice-expert continuum, whereby researchers study changes that take place when a beginner at some skill gains greater expertise. In their summary, they note that “experts restructure the elements of a learning task into abstract schemata that are not available to novices, who focus principally on surface elements of a task. Thus, experts replace complex sub-elements with schemata that allow more abstract processing” (p. 217). In relating this to language learning, one can think of chunk learning whereby learners have fixed phrases, but may not have unpackaged these phrases into anything meaningful. Rather, the string of sounds is a chunk with a holistic meaning. As she or he becomes more proficient, the component parts become clear. In these situations, when this occurs, a learner's speech may on the surface appear simpler, but may in reality represent greater syntactic sophistication. Thus, the learner has moved from formulaic speech to speech that entails an understanding of structure. To put this somewhat differently, the learner is moving from exemplar-based learning to a stage in which representations are more rule-based.

For restructuring to occur, two things seem to be required: (1) noticing features of language that the learner has not yet acquired (referred to as ‘noticing the gap’), and (2) the use of tasks that require the learner to use new and more complex grammar, i.e., that require the use of certain target-

language forms and which ‘stretch’ the learner’s language knowledge, requiring a ‘restructuring’ of that knowledge. Activities that involve ‘stretched output’ are those that expand or ‘restructure’ the learner’s grammatical system through increased communicative demands and attention to linguistic forms.

McLaughlin (1990) noted two concepts that are fundamental in L2 learning and use: automaticity and restructuring. Automaticity refers to control over one’s linguistic knowledge. In language performance, one must bring together a number of skills from perceptual, cognitive, and social domains. The more each of these skills is routinized, the greater the ease with which they can be put to use.

Restructuring refers to the changes made to internalized representations as a result of new learning. *Changes that reflect restructuring are discontinuous or qualitatively different from a previous stage.* Learning means the inclusion of additional information which must be organized and structured. Integrating new information into one’s developing L2 system necessitates changes to parts of the existing system, thereby *restructuring* or *reorganizing*, the current system and creating a (slightly) new L2 system. Mere addition of new elements does not constitute restructuring.

The term restructuring refers to the qualitative changes that take place in learners’ interlanguages (ILs). These changes relate to both the way knowledge is represented in the minds of learners and also the strategies they employ. One way of characterizing restructuring is in terms of Anderson’s ACT Theory, whereby declarative knowledge is organized into procedural knowledge. Another way is in terms of the shift from exemplar-based to rule-based representation. McLaughlin (1990, p. 118) gave the ‘classic’ example of the U-shaped learning of the past tense in English and also the process by which formulaic sequences become analyzed. The primary mechanism of restructuring is automatization. McLaughlin (1987) claimed that “once procedures at any phase become automatized ... learners step up to a ‘metaprocedural’ level which generates representational change and restructuring” (p. 138). In other words, restructuring involves the replacement of existing procedures with more efficient ones. This process is facilitated by the flexible use of learning strategies (Gass and Selinker, 2008, pp. 234–237; Richards and Reppen, 2014; VanPatten and Benati, 2015, pp. 155, 156).

## 8.2. LANGUAGEING

Swain (2006) defines languaging as “the process of making meaning and shaping knowledge and experience through language.” In particular, languaging about language is an integral part of the language learning process itself: Languaging about language is *one of the ways we learn language*. This means that the language (the dialog or private speech) about language that learners engage in takes on new significance. In it, we can observe learners operating on linguistic data and coming to an understanding of previously less well understood material. In languaging, we see learning taking place (Swain, 2006, p. 98).

Swain and Lapkin (2011) define languaging “as that practice when language is used in order to work at solving a problem or clarifying an issue.” Swain (2006) also identifies two types of languaging: private speech and collaborative dialog.

Collaborative dialogs: Donato (1994) has shown that students’ participation in collaborative dialog, through which learners can provide support for each other or scaffold each other’s learning by discussing the use of language, has spurred their language development. Other research (Swain and Lapkin, 1998) corroborates the value of language-related episodes (LREs) that arise during a dialog where students explicitly discuss grammatical points. Such dialogs serve both as a cognitive tool and as a means of communication that can promote grammatical development. Private Speech: Private speech is the kind of languaging in which the L2 learner talks to himself/herself so as to solve a problem or clarify an issue for himself/herself. Some L2 learners who go through a *silent period* engage in private conversations with themselves, thus, perhaps, preparing themselves for social speech later (Celce-Murcia et al., 2014, p. 266; Ellis, 2008, pp. 538–543).

## 8.3. ROTE LEARNING VS. MEANINGFUL LEARNING

Ausubel (1964) made a distinction between rote and meaningful learning. Meaningful learning “subsumes” new information into existing structures and memory systems, and the resulting associative links create stronger retention. Rote learning refers to taking in isolated bits and pieces of information that are not connected with one’s existing cognitive structures, and in turn, it has little chance of creating long-term retention.

## 8.4. RESPONDENT CONDITIONING VS. OPERANT CONDITIONING

Ivan Pavlov is the best known classical behaviorist and is known for respondent conditioning, while Skinner's type of conditioning is called operant conditioning in which one "operates" on the environment. Here, the importance of a (preceding) stimulus is deemphasized in favor of rewards that *follow* desired behavior.

## 8.5. FOCUS ON FORM (FONF), FOCUS ON FORMS (FONFS), FOCUS ON MEANING (FONM)

Focus on form (FonF) is a central construct in task-based language teaching. The term was first introduced by Michael Long (1988, 1991) to refer to an approach where learners' attention is attracted to linguistic forms as they engage in the performance of tasks. It contrasts with a structure-based approach-FonFs-where specific linguistic forms are taught directly and explicitly (a traditional form-centered approach). Long (1997) also sought to distinguish 'FonF' from focus on meaning (FonM)-an approach to teaching that emphasized incidental and implicit language learning through content-based instruction or immersion programs where the learners' focus was more or less entirely on meaning. Theorists such as Schmidt and Long are insistent that FonF refers to form-function mapping (i.e., the correlation between a particular form and the meaning or meanings it realizes in communication) (Table 8.1).

**Table 8.1.** Long's Views About Approaches to Language Teaching

Focus on Forms	Focus on Meaning	Focus on Form
No needs analysis	Usually no needs analysis	A needs analysis of the target tasks learners need to perform provides the basis of a task-based syllabus
No realistic models of language	Older learners cannot fully acquire a second language (L2) 'naturally' and thus FonM cannot succeed in enabling such learners to achieve high levels of L2 proficiency	Attracts attention to forms that otherwise learners might not notice

Ignores the fact that learning a new word or rule is a slow and gradual process	Even prolonged exposure to the L2 does not ensure that learners will acquire non-salient linguistic features	Allows for the slow and gradual process involved in the learning of L2 linguistic features
Fails to recognize that the teachability of grammatical forms is constrained by their learnability	Learners need negative evidence because positive evidence is insufficient to guarantee the acquisition of some grammatical features	Respects the learner's internal syllabus
Tends to result in boring lessons	FonM is inefficient because it results in only slow progress	Is under learner control because it only occurs in response to the learner's communication problems
Results in more false beginners than finishers	Can result in confidence and fluency in the use of the L2 but limited accuracy in use of the target language system	Assists the development of form-function mapping and so promotes both fluency and accuracy

Long's views about FonF can be characterized as entailing a FonF that:

- arises in interaction involving the second language (L2) learner;
- is reactive (i.e., occurs in response to a communication problem);
- is incidental (i.e., it is not pre-planned);
- is brief (i.e., it does not interfere with the primary FonM);
- is typically implicit (e.g., it does not involve any metalinguistic explanation);
- induces 'noticing' (i.e., conscious attention to target linguistic forms);
- induces form-function mapping;
- constitutes an 'approach' to teaching (i.e., FonF) that contrasts with a traditional form centered approach (i.e., FonFs).

Preemptive focus-on-form (attempts by the students or the teacher to make a particular form the topic of the conversation even though no error (or perceived error) in the use of that form has occurred) grew only as an extension of FonF originally proposed by Long (Celce-Murcia et al., 2014, p. 35; Ellis, 2016).

## 8.6. DIFFERENT TYPES OF CORRECTIVE FEEDBACK (CF)

Over the years, a number of taxonomies of oral feedback strategies have been proposed (Allwright, 1975; Chaudron, 1977; Lyster and Ranta, 1997; Seedhouse, 1997; Ranta and Lyster, 2007; Sheen and Ellis, 2011). For example, Sheen and Ellis (2011) suggest nine feedback types on the basis of six basic strategies originally identified by Lyster and Ranta (1997). These feedback techniques are separated along two dimensions: (1) *input-providing* vs. *output prompting*; and (2) *implicit* vs. *explicit*. The former distinguishes feedback types on the basis of whether feedback provides or elicits (i.e., input-providing, and output-prompting, respectively) the correction, while the latter has to do with the explicitness of the corrective force.

There are four feedback moves that are input-providing: conversational recasts, didactic recasts, explicit correction and explicit correction with metalinguistic explanation. These strategies provide both positive and negative evidence and demonstrate to learners how their incorrect utterances can be correctly reformulated. Recognizing that recasts are “elastic in nature” (Mackey and Goo, 2007), Sheen and Ellis (2011) distinguish between *conversational recasts* (i.e., implicit) and *didactic recasts* (i.e., explicit). Conversational recasts (i.e., when the error, or phrase containing an error, is repeated back to the learner in its corrected form) are implicit in nature in that they occur when a learner’s incorrect utterance causes a communication problem and that they usually take the form of confirmation checks. In contrast, if recasts occur when there is no communication breakdown, and the primary focus is on form, they are seen as serving a didactic function.

In addition to didactic recasts, corrections (e.g., *It’s “she walks to school,” not “walk”*) and corrections with metalinguistic explanations (e.g., *It’s “she walks to school,” not “walk.” You need -s on the verb because “she” is third-person singular*) are also classified as explicit input-providing feedback strategies. Output-prompting feedback strategies, on the other hand, provide negative evidence to learners by signaling that their utterances are problematic. Learners are given an opportunity to self-correct their errors and produce modified output. Five strategies fall into the category of this sort of feedback: repetitions, clarification requests, metalinguistic clues, elicitations, and paralinguistic signals. *Repetitions* (e.g., *She walk to school?*) and *clarification requests* (e.g., *What? Huh?*) prompt learners to respond without breaking the communication flow. These are considered



to be negotiation for meaning. On the other hand, the corrective force of *metalinguistic* clues (e.g., *You need past tense*), *elicitations* (e.g., *Say that again?*) and *paralinguistic signals* (i.e., a gesture or facial expression to indicate that the learner has made an error) is overt in that learners clearly recognize that their utterances are being corrected (Hall, 2016, p. 503; Hinkel, 2011, p. 593, 594).

*Reformulation* as corrective feedback (CF) in which the instructor reconstructs the incorrect section to make it more normal. It stops erroneous education because learners are provided with instruction regularly, and therefore do not keep on to do incorrect practice. In reformulating the concept, the justification is to keep the initial meaning but then to change the form to cause it to look more natural. According to Hanaoka and Izumi (2012), the disadvantages of traditional feedback methods are compensated by reformulation techniques. Reformulation, which was found in pupil's draft is a useful practice for instructors to provide tasks for pupils and encourage them to do the tasks (Farsi and Barjesteh, 2016).

## 8.7. U-SHAPED LEARNING

Destabilization, as discussed above, is a consequence of restructuring and often results in what are known as U-shaped patterns. U-shaped patterns reflect three stages of linguistic use. In the earliest stage, a learner produces some linguistic form that conforms to target-like norms (i.e., is error-free). At Stage 2, a learner appears to lose what he or she knew at Stage 1. The linguistic behavior at Stage 2 deviates from TL norms. Stage 3 looks just like Stage 1 in that there is again correct TL usage (Gass and Selinker, 2008, pp. 234–237).

Ellis (2012, p. 139) provides a two dimensional classification of CF strategies (Table 8.2).

**Table 8.2.** Dimensions of Corrective Feedback Strategies (Ellis, 2012, p. 139)

CF/Type	Implicit	Explicit
Input-providing CF	Recast	Explicit correction
Output-prompting CF	Repetition Clarification request	Metalinguistic clue Elicitation

Input-providing CF provides the learners with input indicating target language (TL) norms, while output-prompting CF indicates that an error has been made but does not supply the correct form, encouraging learners to try to self-correct. Feedback Lyster and Ranta (1997) refer to six different types of feedback used by the four teachers in their study:

1. **Explicit Correction:** It refers to the explicit provision of the correct form. As the teacher provides the correct form, he or she clearly indicates that what the student had said was incorrect (e.g., “Oh, you mean,” “You should say”).
2. **Recasts:** It involves the teacher’s reformulation of all or part of a student’s utterance, minus the error. Following Doughty (1994a, b), this widely used term from the L1 acquisition literature has been adopted by Lyster and Ranta. Spada and Froehlich (1995) refer to such reformulations as “paraphrase” in the COLT scheme; Chaudron (1977) included such moves in the categories of “repetition with change” and “repetition with change and emphasis.” Recasts are generally implicit in that they are not introduced by phrases such as “You mean,” “Use this word,” and “You should say.” However, some recasts are more salient than others in that they may focus on one word only, whereas others incorporate the grammatical or lexical modification into a sustained piece of discourse. Recasts also include translations in response to a student’s use of the L1. In their initial analysis (Lyster and Ranta, 1995), they included translation as a separate type of feedback but then combined this category with recasts for two reasons: First, translation occurred infrequently and, second, when it did occur, translation clearly served the same function as a recast.
3. **Clarification Requests:** According to Spada and Froehlich (1995, p. 25), indicate to students either that their utterance has been misunderstood by the teacher or that the utterance is ill-formed in some way and that a repetition or a reformulation is required. This is a feedback type that can refer to problems in either comprehensibility or accuracy, or both. Lyster and Ranta have coded feedback as clarification requests only when these moves follow a student error. A clarification request includes phrases such as “Pardon me.” It may also include a repetition of the error as in “What do you mean by X?”

4. **Metalinguistic Feedback:** It contains either comments, information, or questions related to the well-formedness of the student's utterance, without explicitly providing the correct form. Metalinguistic comments generally indicate that there is an error somewhere (e.g., "Can you find your error?," "Non, "No, not X," or even just "No."). Metalinguistic information generally provides either some grammatical metalanguage that refers to the nature of the error (e.g., "It's masculine") or a word definition in the case of lexical errors. Metalinguistic questions also point to the nature of the error but attempt to elicit the information from the student (e.g., "Is it feminine?").
5. **Elicitation:** It refers to at least three techniques that teachers use to directly elicit the correct form from the student. First, teachers elicit completion of their own utterance by strategically pausing to allow students to "fill in the blank" as it were. Such "elicit completion" moves may be preceded by some metalinguistic comment such as "No, not that. It's a..." or by a repetition of the error. Second, teachers use questions to elicit correct forms (e.g., "How do we say *X* in French?"). Such questions exclude the use of yes/no questions: A question such as "Do we say that in French?" is metalinguistic feedback, not elicitation. Third, teachers occasionally ask students to reformulate their utterance.
6. **Repetition:** It refers to the teacher's repetition, in isolation, of the student's erroneous utterance. In most cases, teachers adjust their intonation so as to highlight the error. In addition to the preceding six feedback types, Lyster and Ranta initially included in their analysis a seventh category called *multiple feedback*, which referred to combinations of more than one type of feedback in one teacher turn. Because this category revealed little information as to the nature of the combinations, they became interested in examining the various combinations to determine (a) whether certain combinations tended to occur more than others and (b) whether one particular type of feedback tended to override others in terms of illocutionary force. Repetition clearly occurred with all other feedback types with the exception of recasts: in clarification requests ("What do you mean by *X*?"), in metalinguistic feedback ("No, not *X*. We don't say *X* in French."), in elicitation ("How do we say *X* in French?"), and in explicit correction ("We don't

say *X* in French; we say *Y*.”). Because repetition was common to these combined feedback moves, it was the clarification request, metalinguistic feedback, elicitation, and explicit correction that distinguished them, not the repetition.

They thus coded these as instances of clarification request, metalinguistic feedback, elicitation, and explicit correction, respectively. Feedback coded as repetition, then, involves the teacher’s repetition, in isolation, of the student’s error. Another combination that occurred was recast and metalinguistic feedback. It soon became evident, however, that such a combination was not “multiple” and necessitated instead the creation of the category “explicit correction.” That is, as soon as the teacher’s provision of the correct form is somehow framed meta linguistically, then the characteristics of a recast, along with its condition of implicitness, no longer apply. Similarly, when elicitation accompanied either a recast or an explicit correction, this was coded as “explicit correction” in order to consistently capture in the coding instances where correct forms were explicitly provided: Finally, there were a few instances of elicitation occurring with metalinguistic feedback. This was coded as “elicitation” because the elicitation technique prevails in terms of illocutionary force in that uptake is clearly expected (Gass and Selinker, 2008, pp. 234–237).

## 8.8. RECASTS

Recasts are just one of the several possible corrective strategies that teachers employ to deal with learner errors. Lyster and Ranta (1997) identified six corrective strategies other than recasts (i.e., explicit correction, clarification requests, metalinguistic information, elicitation, and repetition):

1. **Explicit Correction:** Teacher supplies the correct form and clearly indicates what the student has said was incorrect.
2. **Recasts:** Teacher reformulates all or part of the student’s utterance but does not explicitly say that the student’s utterance is wrong.
3. **Clarification Requests:** Teacher uses phrases such as “*Pardon?*” and “*I don’t understand.*”
4. **Metalinguistic Information:** The teacher provides comments, information, or questions related to the well-formedness of the student’s utterance, such as “*C’est masculine.*”
5. **Elicitation:** The teacher directly elicits a reformulation from students by asking questions such as “*How do we say that in*

*French?*” or by pausing to allow students to complete the teacher’s utterance, or by asking students to reformulate their utterance.

6. **Repetition:** Teacher repeats the student’s ill-formed utterance, adjusting intonation to highlight the error. Recast is a form of feedback, though they are less direct and more subtle than other forms of feedback. A recast is a reformulation of an incorrect utterance that maintains the original meaning of the utterance where the NS reformulates the non-native speaker (NNS’s) incorrect utterances. Recasts can take many different forms as Sheen (2006) and Loewen and Philp (2006) have shown. For example, a recast may occur by itself or in combination with another CF strategy; it may or may not include prosodic emphasis on the problematic form; it may be performed with rising intonation (i.e., as a confirmation check) or with falling intonation (i.e., as a statement); it may be partial (i.e., reformulate only the erroneous segment in the learner’s utterance) or complete (i.e., reformulate all of it); and it may involve correcting just one or more than one feature. Depending on the particular way the recast is realized, it may be implicit (as in the case of full recasts performed in isolation, as a confirmation check, and without any prosodic emphasis) or much more explicit (as in the case of partial recasts performed in conjunction with another CF strategy, such as repetition, and as a statement with prosodic emphasis).

## 8.9. UPTAKE

‘Uptake’ is a term that has been used to refer to a discourse move where learners respond to information they have received about some linguistic problem they have experienced. The move typically occurs following CF, as in Extract 1.

- **Extract 1:**
  - S: I have an ali[bi].
  - T: you have what?
  - S: an ali[bi].
  - T: an alib-? An alib[ay].
  - S: ali [bay].
  - T: okay, listen, listen, alibi.
  - SS: alibi.

The linguistic problem here arises in turn (1), where a student mispronounces the word ‘alibi.’ The teacher responds in (2) with a request for clarification, signaling that there is a linguistic problem. (3) is an uptake move but the student fails to repair the pronunciation error. This results in explicit correction by the teacher in (4), a further uptake move in (5), which again fails to repair the error, more explicit correction by the teacher in (6), and a final choral uptake move in (7), where the class as a whole now pronounces ‘alibi’ correctly. From this example, it should be clear that uptake following CF can be of two basic kinds- ‘repair’ (as in turn 7) or ‘needs repair’ (as in turns 3 and 5). Lyster and Ranta (1997) also distinguished different categories of these two basic types, as shown in Tables 8.3 and 8.4.

**Table 8.3.** Different Types of Uptake Move with Description (Repair)

SL. No.	Repair	Description
1.	Repetition	i.e., The student repeats the teacher’s feedback
2.	Incorporation	The student incorporates repetition of the correct form in a longer utterance
3.	Self-repair	The student corrects the error in response to teacher feedback that did not supply the correct form
4.	Peer-repair	A student other than the student who produced the error corrects it in response to teacher feedback

**Table 8.4.** Different Types of Uptake Move with Description (Needs Repair)

SL. No.	Needs Repair	Description
1.	Acknowledgement	The student says ‘yes’ or ‘no’
2.	Same error	The student produces the same error again
3.	Different error	The student fails to correct the original error and in addition produces a different error
4.	Off-target	The student responds by circumventing the teacher’s linguistic focus

5.	Hesitation	The student hesitates in response to the teacher's feedback
6.	Partial repair	The student partly corrects the initial error

Ellis, Basturkmen, and Loewen (2001) defined 'uptake' more broadly. They noted that there are occasions in communicative lessons where teachers or learners themselves pre-empt attention to a linguistic feature (e.g., by asking a question). In student initiated exchanges, the student still has the opportunity to react, for example, by simply acknowledging the previous move or by attempting to use the feature in focus in his/her own speech. Extract 3 provides an example of this type of uptake. In teacher-initiated exchanges, learner uptake is also possible, for example, when the learner repeats the linguistic form that the teacher has identified as potentially problematic.

• **Extract 2:**

- S: You can say just January eighteen<th>?
- T: Jan-January eighteen? January eighteen? Mmm It's okay, It's a little casual (.) casual. Friends (.) January eighteen, okay, but usually January THE eighteenth or THE eighteenth of January.
- S: January THE eighteenth.
- T: the, yeah, good.
- To take account of this type of uptake Ellis et al. proposed the following definition:
- Uptake is a student move.
- The move is optional (i.e., a FonF does not obligate the student to provide an uptake move).
- The uptake move occurs in episodes where learners have demonstrated a gap in their knowledge (e.g., by making an error, by asking a question or by failing to answer a teacher's question).
- The uptake move occurs as a reaction to some preceding move in which another participant (usually the teacher) either explicitly or implicitly provides information about a linguistic feature. It should be noted, however, that most of the research that has examined learner uptake has been based on the narrower definition (i.e., uptake as the move following CF) Ellis, 2009, 2012, pp. 178–181; Lyster and Ranta, 1997; Mackey, 2007).

## 8.10. FORM-FOCUSED INSTRUCTION

Form-focused instruction has been operationalizing as either proactive or reactive (Doughty and Williams, 1998; Rebuffot and Lyster, 1996). Proactive form-focused instruction involves preplanned instruction designed to enable students to notice and to use TL features that are otherwise difficult to learn through exposure to classroom input. Reactive form-focused instruction occurs in response to students' language production during teacher-student interaction and includes CF as well as other attempts to draw learners' attention to the TL. Since proactive form-focused instruction involves preplanned instruction of some linguistic items/information, it is, thus, rooted in "intentional" learning of target forms, and it is not in response to feedback and learner error.

## 8.11. CRITERIA FOR DEFINING IMPLICIT AND EXPLICIT KNOWLEDGE

Ellis (2005) lays out some criteria for defining implicit and explicit knowledge, summarized in Table 8.5.

**Table 8.5.** Taxonomy for Defining Implicit and Explicit Knowledge

<b>Taxonomy</b>	<b>Implicit Knowledge</b>	<b>Explicit Knowledge</b>
Degree of awareness	Response according to feel	Response using rules
Time available	Time pressure	No time pressure
Focus on attention	Primary focus on meaning	Primary focus on form
Systematicity	Consistent responses	Variable responses
Certainty	High degree of certainty in responses	Low degree of certainty in responses
Metalinguistic knowledge	Metalinguistic knowledge not required	Metalinguistic knowledge encouraged
Learnability	Early learning favored	Late form-focused instruction favored

*Source: Mitchell, Myles, and Marsden (2013, p. 137).*



## 8.12. SCAFFOLDING

Aljaafreh and Lantolf (two proponents of the sociocultural theory (SCT) of SLA) developed a ‘Regulatory Scale’ to illustrate how the tutor’s interventions could be ranged on a continuum from implicit to explicit correction. When the feedback needed by individual students moved closer to the Implicit end of the scale, they were considered to be moving towards more independent and self-regulated performance, and this was consequently taken as positive evidence of learning. Sociocultural theory views language as a ‘tool for thought.’

It is therefore critical of ‘transmission’ theories of communication, which present language primarily as an instrument for the passage back and forth of predetermined messages and meanings.

Dialogic communication is seen as central to the joint construction of knowledge (including knowledge of language forms), which is first developed inter-mentally, and then appropriated and internalized by individuals. Similarly, private speech, meta-statement, etc., are valued positively as instruments for self-regulation, that is, the development of autonomous control over new knowledge (Mitchell and Myles, 2004, pp. 197, 211, 220).

## 8.13. THE ZONE OF PROXIMAL DEVELOPMENT

The ZPD has had a substantial impact on developmental psychology, education, and applied linguistics. The most frequently referenced definition of the ZPD is “the distance between the actual developmental level as determined by independent problem solving and the level of potential development as determined through problem solving under adult guidance or in collaboration with more capable peers” (Vygotsky, 1978, p. 86). The ZPD has captivated educators and psychologists for a number of reasons. One is the notion of assisted performance, which, though not equivalent to the ZPD (*ZPD is not the same thing as scaffolding*), has been a driving force behind much of the interest in Vygotsky’s research. Another compelling attribute of the ZPD is that, in contrast to traditional tests and measures that only indicate the level of development already attained, the ZPD is forward-looking through its assertion that what one can do today with mediation is indicative of what one will be able to do independently in the future. In this sense, ZPD-oriented assessment provides a nuanced determination of both development achieved and developmental potential.

### 8.13.1. Common Misconceptions About the ZPD

There are two general misconceptions about the ZPD, easily the most widely used and yet least understood of the central concepts of SCT (Chaiklin, 2003). The first is that the ZPD is equivalent to scaffolding (or assisted performance), and the second is that it is similar to Krashen's notion of  $i + 1$  (e.g., Krashen, 1982).

Both assumptions are inaccurate. Scaffolding, a term popularized by Jerome Bruner and his colleagues nearly four decades ago (Wood, Bruner, and Ross, 1976), refers to any type of adult-child (expert-novice) assisted performance. Scaffolding, unlike the ZPD, is thought of in terms of the amount of assistance provided by the expert to the novice rather than in terms of the quality, and changes in the quality, of mediation that is negotiated between expert and novice (Stetsenko, 1999). With regard to misconceptions about equivalences between ZPD and Krashen's  $i + 1$ , the fundamental problem is that the ZPD focuses on the nature of the concrete dialogic relationship between expert and novice and its goal of moving the novice toward greater self-regulation through the new language.

Krashen's concept focuses on language and the language acquisition device (LAD), which is assumed to be the same for all learners with very little room for differential development (e.g., Dunn and Lantolf, 1998; Thorne, 2000). Krashen's hypothesis claims that language develops as a result of learners comprehending input that contains features of the new language that are "slightly" beyond their current developmental level. As researchers have pointed out, there is no way of determining precisely the  $i + 1$  of any given learner in advance of development.

It can only be assumed after the fact. In terms of the ZPD, development can be predicted in advance for any given learner on the basis of his or her responsiveness to mediation. This is what it means to say that what an individual is capable of with mediation at one point in time, he or she will be able to do without mediation at a future point in time. Moreover, development is not merely a function of shifts in linguistic performance, as in the case of Krashen's model, but is also determined by the type of, and changes in, mediation negotiated between expert and novice (Baralt, Gilabert, and Robinson, 2014; VanPatten and Williams, 2015, pp. 212, 214, 215).

## 8.14. PRABHU'S CONCEPT OF REASONABLE LEVEL OF CHALLENGE

In task sequencing, sequencing should be determined by the task's level of "reasonable challenge." The concept of reasonable challenge implies that learners should not be able to meet the challenge too easily but *should* be able to meet it with some effort. According to Gibbons (2006, p. 26): It is worth noticing that within the SLA area, although from very different theoretical standpoints, related notions to that of the zone of proximal development have also been put forward, for example, Krashen's 'input hypothesis' and the notion of  $i + 1$  (Krashen, 1985), Prabhu's 'reasonable challenge' (Prabhu, 1987), and Swain's 'pushed language' (Swain, 1985; Gibbons, 2006, p. 26).

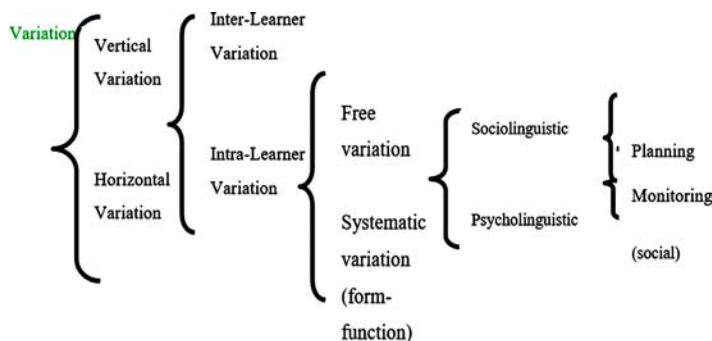
## 8.15. PARAMETERS/PARAMETER SETTING

Parameters are mostly associated with syntactic theory, specifically Chomskyan theory and Universal Grammar (UG). Parameters are particular variations on a type of syntactic feature, and these features are finite in number. One such parameter is the null subject parameter. A null subject refers to the fact that verbs can appear without an explicit or overt subject, and the sentence is grammatical. For example, in Spanish *Hablo* 'I speak' and *Habla* 'he speaks' are allowed. In addition, *Está lloviendo* 'It's raining' is allowed; in fact, it is required that weather expressions in Spanish have no equivalent of it. These are all grammatical sentences. In English, however, such sentences are prohibited: '\*Speaks,' '\*Is raining.' In short, languages vary as to whether they allow null subjects or not, and linguists talk about *the parameter being set* one way or another. Spanish and Italian, for example, are null subject languages and thus have the *parameter set* to +null subjects. English and French are not null subject languages and have the *parameter set* to null subjects. Developments in syntactic theory have led to increasingly abstract notions of parameters, such as +/–strong agreement, which may affect word order. In SLA, the question has been whether or not learners can "reset" parameters to the L2 value if their L1 value is different. In the case of going from Spanish to English, the learner would have to *reset* from + to – null subject, while the English speaker learning Spanish would have to reset from – to + null subject. *Resetting of parameters* occurs when appropriate input data from the environment interact with the information contained in UG. Research to date suggests that parameter resetting can occur, but it is not a given. Some scholars have argued that only certain kinds of parameters can be reset. And, of course, there has been discussion

of the degree to which L1 parameters are transferred into SLA from the beginning. One of the most widely read and cited scholars working within parametric matters in SLA (as well as UG) is Lydia White, although there are many others who have examined SLA from a UG framework (Gass and Selinker, 2008, pp. 230–236).

## 8.16. HORIZONTAL VARIATION

It refers to the variation evident in learner language at a particular moment or stage in a learner's development. It contrasts with *vertical variation* which refers to the differences in learner language evident from one time to another. It reflects the development that is taking place in the learner's IL. A typology of variability in learner language The outline of the typology is shown in Figure 8.1. The typology addresses variation in choice of linguistic form. It excludes functional variation (i.e., variation in the choice of language function).



**Figure 8.1.** A typology of variation in the choice of linguistic form in learner language.

A basic distinction is made between horizontal and vertical variation. Horizontal variation refers to the variation evident in learner language at any single time, while vertical variation refers to variation over time and is, therefore, coterminous with order/sequence of development. There is some evidence to suggest that horizontal variation mirrors vertical variation for, as Widdowson (1979) puts it, “change is only the temporal consequence of current variation” (p. 195), a view that accords with the role of change in the dynamic paradigm. Horizontal variation is subdivided into inter-and intra-learner variation. Inter-learner variability reflects individual learner factors such as motivation and personality, but it also arises as a result of social

factors such as social class and ethnic grouping, as the Labovian paradigm has demonstrated, and also as a result of psycholinguistic factors, such as working memory (WM). As these same social and psycholinguistic factors are also involved in intra-learner variation, there is clearly an interaction between individual learner factors such as sex, social class, and WM and the situational factors involved in style-shifting; the markers involved in stylistic variation also function as social indicators. Intra-learner variation can take the form of either free variation or systematic variation. Free variation arises when linguistic choices occur randomly, making it impossible to predict when a learner will use one form as opposed to another. The existence of free variation in learner language is, however, controversial. Many sociolinguists consider that free variation does not exist or that it occurs for only a very short period of time and is of minor interest. Gatbonton (1978) and Ellis (1999) have, however, argued that free variation constitutes an important mechanism of development. Systematic variation occurs when it is possible to identify some factor that predisposes a learner to select one specific linguistic form over another. Systematic variation is evident in form-function analyses that demonstrate that, at any one time of development, learners' grammars reflect particular configurations of form-function mapping. That is, learners organize their linguistic systems in such a way that specific forms are used to realize specific language functions. Thus, the choice of one linguistic form in preference to another is determined by the language function the learner wishes to perform.

Systematic variation is conditioned by both sociolinguistic and psycholinguistic factors. Sociolinguistic accounts of variation distinguish internal and external sources. Internal variation is determined by linguistic context (i.e., the elements that precede and follow the variable structure in question) and other linguistic factors such as markedness. External variation is accounted for in terms of the social factors that are configured in different situational contexts of language use that conspire to categorically or probabilistically influence the learner's choice of linguistic forms. The situational context covers a whole host of factors. Preston (1989) offers a detailed breakdown (for example, time, topic, purpose, and tone). Psycholinguistic sources of variability include the means learners use to control their linguistic resources (i.e., *planning* and *monitoring*) under different conditions of language use. They have been investigated in terms of task-induced variability. The goal of variationist research is to describe and account for learners' choice of linguistic forms. The assumption is made that variability in learner language is systematic (i.e., that it is possible to

identify the factors that will account for why one form is preferred to another in different sociolinguistic and psycholinguistic contexts). There remains the possibility, however, that at least some of this variability is non-systematic (i.e., learners select randomly from their linguistic repertoires) (Ellis, 2008, pp. 129, 130, 442, 964, 977, 978, 982).

## **8.17. GRAMMATICALIZATION**

Some functionalist models of second language acquisition (SLA) consider that early SLA is characterized by the use of pragmatic strategies for conveying meanings that are conveyed grammatically by native speakers (NSs). Gradually, learners move from this pragmatic mode to a grammatical mode as they learn the grammatical properties of the L2. The term grammaticalization was first introduced at the beginning of the 20<sup>th</sup> century to refer to a specific process whereby content words change into function words such as prepositions and auxiliaries, or even become grammatical markers such as affixes. However, the concept has also been used in a more general sense to denote the transformation whereby a lexical item gradually acquires grammatical status. Ramat (2001) points out that the implicit notion of grammaticalization goes back as far as the 19<sup>th</sup> century when it was used within a historical linguistic framework to indicate one of the most characteristic developments languages may undergo. It is this broader sense of the term that usage-based linguists have used to explain the emergence of grammar from functional language use. Tomasello (2003) argues that during the process of communication, words are strung together into sequences, forming patterns of use that become consolidated into grammatical constructions. Non-nativist linguists offer this process as the alternative to seeing the origins of grammatical structures in some sort of inherent human linguistic endowment:

Grammaticalization processes are well-attested in the written records of numerous languages in their relatively recent pasts, and it is a reasonable assumption that the same processes were at work in the origin and early evolution of language, turning loosely organized sequences of single symbols into grammaticized linguistic constructions (Tomasello, 2000, p. 162).

Ellis and Larsen-Freeman (2006) argue that the grammaticalization process involves, in effect, the automatization of frequently occurring sequences of linguistic elements, which results in the emergence of syntactic

constructions and then in subsequent shifts in their function due to frequency effects. Thus, frequency plays a crucial role in the diachronic development and change of languages. It is important to note that this diachronic evolution is a gradual process, which has been indicated in linguistic accounts by using metaphors such as ‘graded scales’ or ‘grammaticalization chains’ (VanPatten and Benati, 2015, pp. 155, 156).

## 8.18. LANGUAGE-RELATED EPISODES (LRES)

Language-related episodes (LRE) is a construct studied within the context of interaction. Briefly defined, LREs refer to instances where learners consciously reflect on their own language use, or, more specifically “instances in which learners may (a) *question the meaning of a linguistic item*; (b) *question the correctness of the spelling/pronunciation of a word*; (c) *question the correctness of a grammatical form*; or (d) *implicitly or explicitly correct their own or another’s usage of a word, form or structure*” (Leeser, 2004, p. 56; see also Swain and Lapkin, 1998; Williams, 1999). LREs, as Williams (1999) notes, encompass a wide range of discourse moves, such as requests for assistance, negotiation sequences, and explicit and implicit feedback, and are generally taken as signs that learners have noticed a gap between their ILs (or their partners’ ILs) and the system of the TL. The following example illustrates a language-related episode where students discuss the gender of the word for ‘map.’

- **Learner 1:** *The names on the map. Is it the (male) map or the (female) map?*
- **Learner 2:** *The (male) map*

Based on this example, it might be possible to conclude that Learner 1 recognized a gap in her knowledge of Spanish gender, and thus produces an LRE (an explicit request for assistance). A number of studies investigating L2 learners’ use of LREs have found that LREs not only represent language learning in process but are also positively correlated with L2 development (Ellis, 2008, p. 265, 830; VanPatten and Williams, 2015, p. 190).

## 8.19. BUTTERFLY EFFECT

Complex dynamic systems exhibit nonlinearity, which means that an effect is not proportionate to a cause. In a nonlinear system, a small change in



one parameter can have huge implications downstream. This sensitivity has been called the “*butterfly effect*,” to make the point that a small change, such as a butterfly’s flapping its wings in one part of the world, can have a big impact on the weather elsewhere.

## **8.20. CONTROLLED AND AUTOMATIC PROCESSING**

The distinction between controlled and automatic processing is one of routinization and the creation of associations in long-term memory (LTM), not one of conscious awareness, as Krashen’s acquisition-learning distinction suggests. The distinction is also not one of separateness, because automatic processing presupposes the existence of controlled processing. SLA, in this view, takes place by the initial use of controlled processes. With time and with experience in specific linguistic situations, learners begin to use language more automatically, thus leaving more attentional resources for new information that requires more control. Segalowitz (2003) points out that the picture in reality is not so clear cut. Grammatical learning is not simply a matter of moving from the knowledge of examples to automatic use based on rules; nor does it move from the effortful use of rules to automatic retrieval of chunks stored in memory. Segalowitz and DeKeyser (2001) suggest a need to investigate these two modes together (rule-based learning and exemplar-based learning) in order to understand how learners put information together to produce language in a way that NSs do; that is, fast, effortless, and unconscious (Gass and Selinker, 2008, pp. 230–234).

## **8.21. NOTICING THE GAP AND NOTICING THE HOLE**

Swain has hypothesized that, under certain circumstances, output promotes noticing (one of the three functions of output that relate more to accuracy than to fluency in L2 learning, the other two being ‘hypothesis formulation and testing’ and ‘metatalk’). There are several levels of noticing: (a) noticing the form: Learners may simply notice a form in the TL due to the frequency or salience of the features themselves; (b) ‘notice the gap principle’ or ‘cognitive comparisons’ (proposed by Schmidt and Frota, 1986): Learners may notice not only the TL form itself but also that it is different from their own IL; (c) noticing the hole (proposed by Doughty and Williams): Learners may notice that they cannot say what they want to say precisely in the TL. Noticing the hole may be an important stimulus for noticing the gap (Doughty and Williams, 1998, pp. 66, 67).



## 8.22. INTERNALIZATION AND IMITATION

Vygotsky (1981) stated that the challenge to psychology was to “show how the individual response emerges from the forms of collective life [and] in contrast to Piaget, we hypothesize that development does not proceed toward socialization, but toward the conversion of social relations into mental functions” (p. 165). The process through which cultural artifacts, including language, take on a psychological function is known as internalization (Kozulin, 1990). Drawing from earlier theorists such as Janet (see Valsiner and van der Veer, 2000), Vygotsky (1981) described the process of internalization as follows.

Any function in the child’s cultural development appears twice, or on two planes. First, it appears on the social plane, and then on the psychological plane. First, it appears between people as an interpsychological category, and then within the child as an intrapsychological category. This is equally true with regard to voluntary attention, logical memory, the formation of concepts, and the development of volition (p. 163).

As this quotation makes clear, higher-order cognitive functions, which include planning, categorization, and interpretive strategies, are initially social and subsequently are internalized and made available as cognitive resources. This process of creative appropriation occurs through exposure to, and use of, semiotic systems such as languages, textual (and now digital) literacies, numeracy, and mathematics, and other historically accumulated cultural practices. In this sense, internalization describes the developmental process whereby humans gain the capacity to perform complex cognitive and physical-motor functions with progressively decreasing reliance on external mediation and increasing reliance on internal mediation. According to Gass and Selinker (2008), internalization is the process that allows us to move the relationship between an individual and his or her environment to later performance. One way internalization occurs is through imitation, which can be both immediate and intentional and delayed, as seen, for example, in early child language research by Weir (1962), in which imitation/practice was observed by children when they were alone in bed. This is also known as private speech and has been observed in L2 classrooms by Ohta (2001) and by Lantolf and Yáñez (2003). The items focused on by learners in these imitation/private speech situations are controlled by the learner and not necessarily by the teacher’s agenda.

Regulation is a form of *mediation*. As children learn language, they also learn to regulate their activities linguistically. There are three stages of

development on the way to self-regulation. The first stage involves the use of objects as a way of thinking (object-regulation). One can think of parents using objects (e.g., pieces of candy) to help children with the abstract concept of counting. A second stage is known as other-regulation whereby learning is regulated by others rather than objects. Finally, self-regulation, the final stage occurs when activities can be performed with little or no external support. This occurs through internalization of information (addition without the use of pieces of candy, although some external support is required in the case of more complex mathematical manipulations) (Gass and Selinker, 2008, p. 284; VanPatten and Benati, 2015, pp. 81, 82; VanPatten and Williams, 2015, pp. 211, 212).

### **8.23. FOCUS ON FORM/S (FONF/S)**

In the subfield of instructed second language acquisition (ISLA), many researchers have focused their attention on the key question Does instruction makes a difference? What this question refers to is whether explicit intervention by teachers or other speakers regarding the formal properties of language (e.g., grammar) aids acquisition. Does providing rules help? Does providing feedback help? What kind of practice is useful for promoting the growth of grammar? These questions are examples of researchers' interests in this subfield. In the early 1990s, a distinction was made in ISLA between FonF and FonFs.

FonF generally refers to any intervention in which simultaneous attention is brought to both meaning and how that meaning is encoded. Normally, this would happen in a communicative context as in the case of recasts. In a recast situation, a learner produces something nonnative-like during a conversation, and the interlocutor responds by recasting what the learner says in a native-like way as part of that interlocutor's indication that he or she understood the learner. Thus, the main focus is on meaning with only a brief sidestep to formal features of language as the conversation continues (overt error correction in which a teacher stops and corrects a learner explicitly as part of practice).

FonFs is generally defined as an explicit or overt focus on the formal properties with either little or no attention to meaning. Teachers who drill students repetitively engage in FonFs. Activities such as fill in the blank, in which the learner does not have to pay attention to what the sentence means in order to complete the sentence, are FonFs exercises. The distinction between FonF and FonFs originated with Michael Long, although other

researchers, such as Rod Ellis, Catherine Doughty, and Jessica Williams, have produced scholarship related to FonF and forms.

## 8.24. FOSSILIZATION AND LEARNING PLATEAU

The basic assumption in SLA research is that learners create a language system, known as an IL. This concept validates learners' speech, not as a deficit system, that is, a language filled with random errors, but as a system of its own with its own structure. This system is composed of numerous elements, not the least of which are elements from the NL and the TL. There are also elements in the IL that do not have their origin in either the native language (NL) or the TL. These latter are called new forms and are the empirical essence of IL. What is important is that the learners themselves impose structure on the available linguistic data and formulate an internalized system. Central to the concept of IL is the concept of fossilization, which generally refers to the cessation of learning. The *Random House Dictionary of the English Language* (Flexner and Hanck, 1988, p. 755) defines fossilization of a linguistic form, feature, rule, and so forth in the following way: "to become permanently established in the IL of a L2 learner in a form that is deviant from the target-language norm and that continues to appear in performance regardless of further exposure to the TL." Because of the difficulty in determining when learning has ceased, some hold (e.g., Long, 2003) that it is more appropriate to refer to stabilization of linguistic forms, rather than to fossilization or permanent cessation of learning. In SLA, one often notes that learners reach plateaus that are far from the TL norms. Furthermore, it appears to be the case that fossilized or stabilized ILs exist no matter what learners do in terms of further exposure to the TL. Unfortunately, a solid explanation of permanent or temporary learning plateaus is lacking at present due, in part, to the lack of longitudinal studies that would be necessary to create databases necessary to come to conclusions regarding "getting stuck" in another language.

Ultimate attainment refers to the point at which learners seem to stop progressing. We say that their grammar (linguistic system) has reached stasis. Ultimate attainment for all unimpaired L1 learners is a native system. The great question in SLA is whether L2 learners' ultimate attainment can be native-like or whether it will always be different in some way from what NSs possess as a linguistic system. Concepts integral to the notion of ultimate attainment include *fossilization and stabilization*.

### 8.24.1. Backsliding and Fossilization

The question of what is acquired is not an easy one; it has been operationalized in different ways in the past (for an extended discussion on this issue, see Norris and Ortega, 2003). One can be misled into thinking that a correct utterance or even two or three correct utterances suggest that a particular structure has been acquired. However, there are many factors that one must consider. For example, learners appear to “backslide;” that is, correct forms appear, but then seem to disappear. The reasons for this are often complex. The fact of “backsliding,” however, underscores the need and difficulty of pinpointing L2 knowledge.

A synthesis of models proposed by Corder (1973), Gass and Selinker (2001), and Long (2003) suggests that L2 learners progress through four stages, based on observations of learners’ speech (and writing) production and on the errors they make in the process:

1. **Presystematic Stage:** Corder (1973) observed that in the early stages L2 learners may make a number of random errors, since they are only marginally aware of a given subset of the L2 system. Consider these actual written utterances by ESL students, in which the intended meaning is quite a mystery:

*The different city is another one in the other two. I want to become a physicotrafic. I will studied for 6 years. Society has it's hard-living's bitterness way into the decaded-dragging and full troubled life.* The incoherence of such sentences may have come from learners guesses (do you have any idea what a “physicotrafic” is?) or bold attempts to express a thought, but without control of structure and/or lexicon.

2. **Emergent Stage:** Now, the learner’s linguistic production becomes more consistent as certain rules, words, and phrases (possibly correct in the learner’s mind) are induced and applied. A hearer or reader should at this stage be able to discern what the intended meaning is. Here are more written ESL examples (that might make you smile a little):
  - He was just a peony in the hands of big powders;
  - All work without a play makes Jack a doornail;
  - American food made me interesting to taste;
  - Wars do not happen on the spot of moments.

While meaning may be interpretable, this stage may also be characterized by some backsliding (Selinker, 1972), in which the learner seems to have grasped a rule or principle and then regresses to a previous stage. The phenomenon of moving from a correct form to an incorrect form and then back to correctness is referred to as U-shaped learning (Gass and Selinker, 2001). In general, the learner is still unable to correct errors when they are pointed out by someone else. Avoidance of structures and topics is typical. Consider the following conversation between a learner (L) and a NS of English:

*L: I go New York.*

*NS: You're going to New York?*

*L: [doesn't understand What?*

*NS: You will go to New York?*

*L: Yes.*

*NS: When?*

*L: Uh, 1992. NS Oh, you went to New York in 1992.*

*L: Yes, uh, ... I go 1992.*

Such a conversation is reminiscent of the situation in first language (L1) acquisition where children in LI situations could not discern any error in their speech.

1. **Systematic Stage:** In this third stage, the learner is now able to manifest more consistency in producing the L2. The most salient difference between the second and third stages is the ability of learners to repair their errors when they are pointed out-even very subtly-to them. Consider the English learner who described a popular fishing-resort area:

*L. Many fish are in the lake. The fish are serving in the restaurants near the lake.*

*NS: [smiling] The fish are serving? L: Oh, no, [laughing] uh, fish are being served in restaurants!*

2. **Post-Systematic Stage:** In the final stage, which some researchers (Long, 2005) call stabilization, the learner has relatively few errors and has mastered the system to the point that fluency and intended meanings are not problematic. This fourth stage is characterized by the learner's ability to self-correct.

*In this space-age when many satellites are hovering on our heads-ah, I mean, uh, overheads.*

*He passed out with very high score-s-sorry, I mean, he passed the test with high score. I like Abraham Lincoln because he has known many people in Japan-um, ah, no, no, he... many, many Japanese people know him!*

In the fourth stage, learners can stabilize too fast, allowing minor errors to slip by undetected, and thus manifest fossilization (Selinker and Lamendella, 1979) of their language.

*Error gravity* concerns the seriousness of an error. Judges appear to use different criteria in assessing/evaluating error gravity. Khalil (1985) identified three general criteria: intelligibility, acceptability, and irritation. Intelligibility concerns the extent to which sentences containing different kinds of error can be comprehended. Acceptability is a rather vague criterion, involving judgments of the seriousness of an error. Irritation concerns the emotional response of an addressee but is also related to the frequency of errors (Brown, 2014, pp. 244–246; Ellis, 2008, pp. 56, 57, 961; Gass and Selinker, 2008, pp. 12, 81; VanPatten and Benati, 2015, p. 200).

## 8.25. TASK TYPES

1. Tasks can be ‘unfocused’ or ‘focused.’ Unfocused tasks are tasks that are designed to provide learners with opportunities for communicating using language in general. Focused tasks are tasks that have been designed to provide opportunities for communicating using some specific linguistic feature (typically a grammatical structure). However, the target linguistic feature of a focused task is ‘hidden’ (i.e., learners are not told explicitly what the feature is). Thus, a focused task can still be distinguished from a ‘situational grammar exercise’ as in the latter learners are made aware of what feature they are supposed to be using, in other words, learners are expected to orient differently to a focused task and a situational grammar exercise.
2. Tasks can also be ‘input-providing’ or ‘output-prompting.’ Input-providing tasks engage learners in listening or reading, while output-prompting tasks engage them in speaking or writing. Thus, a task can provide opportunities for communicating in any of the four language skills. Many tasks are integrative; that is,

they involve two or more skills.

3. Tasks also differ in terms of the type of “gap” they contain. Prabhu (1987) distinguished three types of gap: (1) an information gap, (2) an opinion gap (where students all have access to the same information which they use as a basis for discussing the solution to some problem), and (3) a reasoning gap (where students are required to derive some new information from given information through processes of deduction or practical reasoning). A convergent task is an *opinion-gap task* that requires students to agree to a solution to a problem, e.g., deciding what items to take on to a desert island. And a divergent task is an *opinion-gap task* where students are assigned different viewpoints on an issue and have to defend their position and refute their partners,’ e.g., discussing the pros and cons of television.
4. Another significant distinction concerns whether the task is ‘closed’ (i.e., there is just one or a very limited number of possible outcomes) or ‘open’ (i.e., there are a number of different outcomes that are possible). In general, information-reasoning-gap tasks are ‘closed’ while opinion-gap tasks are ‘open.’
5. Tasks vary in complexity. A number of different factors influence the complexity of a task, for example, whether the task language relates to the here-and-now (as when describing a picture that can be seen) or the there-and-then (as when narrating a movie after watching it). Another factor that can affect complexity is whether the task involves single activity (e.g., listening to someone describe a route and drawing the route in on a map) or a dual activity (e.g., listening to someone describe a route and drawing in both locations missing on the map as well as the route taken) (Ellis, 2003, 2014, pp. 90, 200).

## 8.26. IMPLICIT AND EXPLICIT KNOWLEDGE

Rod Ellis (2014) makes a distinction between implicit knowledge and explicit knowledge:

1. **Implicit Knowledge:** It is procedural, is held unconsciously, and can be verbalized only if it is made explicit. It is accessed rapidly and easily, and thus is available for use in rapid fluent communication. In the view of most researchers, competence in an L2 is primarily a matter of implicit knowledge.



2. **Explicit Knowledge:** It “is the declarative and often anomalous knowledge of the phonological, lexical, grammatical, pragmatic, and socio-critical features of an L2 together with the metalanguage for labeling this knowledge” (R. Ellis, 2004, p. 24). It is held consciously, is learnable and verbalizable, and is typically accessed through controlled processing when learners experience some kind of linguist difficulty in the use of the L2.

A distinction can be made between (1) explicit knowledge as analyzed knowledge, which entails a conscious awareness of how a structural feature works, and (2) explicit knowledge as metalingual explanation, which consists of knowledge of grammatical metalanguage and the ability to understand explanations of rules. Thus a person can possess explicit knowledge even though he or she lacks the language needed to express it. Neurolinguistic research (e.g., Ullman, 2001) indicates that different neural structures are involved in acquiring and storing these two types of knowledge (Celce-Murcia et al., 2014, p. 36).

## **8.27. STRUCTURE-BASED PRODUCTION; COMPREHENSION TASKS, CONSCIOUSNESS- RAISING (C-R) TASKS**

Ellis (2003) refers to three principal ways in which researchers have set about designing focused task:

1. **Structure-based Production Tasks:** In a key article, Loschky and Bley-Vroman (1993) discuss what they call ‘structure-based communication tasks.’ They distinguish three ways in which a task can be designed to incorporate a specific TL feature: 1. task-naturalness, 2. task-utility, and 3. Task essentialness.
2. **Comprehension Tasks:** Comprehension-based tasks may be more successful in eliciting attention to a targeted feature than production-based tasks because learners cannot avoid processing them. Ellis considers tasks that are designed to oblige learners to process a specific feature in oral or written input. These tasks go under various names: comprehension tasks (Loschky and Bley-Vroman, 1993), interpretation tasks (Ellis, 1995) and structured-input tasks (VanPatten, 1996). Comprehension tasks are based on the assumption that acquisition occurs as a result of input-processing. This is the assumption which posits that intake arises as a result of learners paying conscious attention to linguistic



forms in the input (*noticing*). Noticing involves attention to form as learners attempt to understand the message content. In the case of unfocused comprehension tasks, no attempt is made to structure the input to promote intake; thus, learners can avoid processing syntactically by relying on semantic processing (Swain, 1985). In the case of focused comprehension, however, the input is contrived to induce noticing of predetermined forms; syntactic processing is required. Ellis considers two ways in which this has been attempted:

- **Input Enrichment:** It involves designing tasks in such a way that the targeted feature is (1) frequent and/or (2) salient in the input provided. Enriched input can consist of oral/written texts that learners simply listen to or read, or written texts in which the target structure has been graphologically highlighted in some way (for example, through the use of underlining or bold print), or oral/written texts with follow-up activities designed to focus attention on the structure, for example, questions that can only be answered if the learners have successfully processed the target structure.
- **Input Processing (IP):** ‘Input-processing instruction’ is a term coined by VanPatten (1996). Its goal is to “alter the processing strategies that learners take to the task of comprehension and to encourage them to make better form-meaning connections than they would if left to their own devices” (p. 60).

3. **Consciousness-Raising (C-R) Tasks:** These tasks differ from the kinds of focused tasks we have considered above in two essential ways. First, whereas structure-based production tasks, enriched input tasks, and interpretation tasks are intended to cater primarily to implicit learning, C-R tasks are designed to cater primarily to explicit learning—that is, *they are intended to develop awareness at the level of ‘understanding’ rather than awareness at the level of noticing*’ (Schmidt, 1994). Thus, the desired outcome of a C-R task is awareness of how some linguistic feature works. Second, whereas the previous types of task were built around content of a general nature, for example, stories, pictures of objects, opinions about the kind of person you like, C-R tasks make language itself the content. In this respect, it can be asked whether C-R tasks are indeed tasks. They are in the sense that learners are required to talk meaningfully about a language point using their own linguistic resources. That is, although there is some linguistic feature, only think about it and discuss it. The ‘taskness’ of a C-R task lies not

in the linguistic point that is the focus of the task but rather in the task learners must engage in order to achieve an outcome to the task. The rationale for the use of C-R tasks draws partly on the hypothesized role of explicit knowledge as a facilitator for the acquisition of implicit knowledge and partly on the claims in the psychological literature that learning is more significant if it involves greater depth of processing (for example, Craik, and Lockhart, 1972). C-R tasks cater for discovery learning through problem solving (Bourke, 1996), in accordance with the general principle that what learners can find out for themselves is better remembered than what they are simply told (Ellis, 2003, pp. 151–163).

## **8.28. FLUENCY**

Fluency is often discussed in relation to accuracy. While most L2 professionals tend to agree on what it means to be accurate in a language, the concept of fluency is not as easy to define. Hartmann and Stork (1976) state that a person is fluent when he or she uses the language's structures accurately while at the same time concentrating on meaning, not form. The fluent speaker uses correct patterns automatically at normal conversational speed. Interestingly, here accuracy is seen as a major part of fluency. An early advocate of the fluency accuracy polarity was Brumfit (1984). He contrasts the two in pedagogical contexts and makes the distinction that "accuracy will tend to be closely related to the syllabus, will tend to be teacher-dominated, and will tend to be form-based. Fluency must be student-dominated, meaning-based, and relatively unpredictable towards the syllabus" (p. 121). Brumfit further points out that fluency is meant "to be regarded as natural language use, whether or not it results in native-speaker-like language comprehension or production" (p. 56). It involves maximizing the language so far acquired by the learner by creating natural use in the classroom as much as possible.

Lennon (1990, as cited in Abaspour and Barjesteh, 2018) differentiates a broad sense of fluency referring to all-round oral proficiency with a narrow sense, referring to the speed and smoothness of delivery. Lennon (1990, p. 26) defines the term fluency as "the rapid, smooth, accurate, lucid, and efficient translation of thought or communicative intention under the temporal constraints of on-line processing."

The notion of utterance fluency refers to the temporal values of speech or the “oral features of utterances that reflect the operation of underlying cognitive processes” (Segalowitz, 2010, p. 48). However, perceived fluency refers to the “inferences listeners make about a speaker’s cognitive fluency based on their perception of utterance fluency” (Segalowitz, 2010, p. 48, as cited in Abaspour and Barjesteh, 2018).

Fillmore (1979) proposes that fluency includes four abilities: (1) the ability to talk without awkward pauses for relatively long periods of time; (2) the ability to talk in coherent and semantically dense sentences that show mastery of syntax and semantics; (3) the ability to say appropriate things in a variety of contexts; and (4) the ability to use language creatively and imaginatively.

These are abilities that language users all possess to varying degrees. Fillmore’s categories are interesting in that they relate to language but also to personality. They also show that there is an interaction between language use and knowledge of the world. In particular, this is seen in the third and fourth characteristics. Hedge (1993) describes fluency as “the ability to link units of speech together with facility and without strain or inappropriate slowness or undue hesitation” (p. 275). Similarly, Richards and Schmidt (2010) describe fluency as “the features which give speech the qualities of being natural and normal, including native-like use of pausing, rhythm, intonation, stress, rate of speaking, and use of interjections and interruptions” (p. 222).

These descriptions emphasize a smoothness of language delivery, without too many pauses or hesitations. They suggest natural language use, not necessarily speaking quickly.

Thornbury (2005) describes features of fluency centered primarily around pausing. A speaker’s rate of speech is important, but it is not the only factor or even the most important one. Research on listeners’ perceptions of a speaker’s fluency suggests that pausing is equally important. Thornbury’s four features of fluency are: (1) Pauses may be long but not frequent. (2) Pauses are usually filled. (3) Pauses occur at meaningful transition points. (4) There are long runs of syllables and words between pauses. Fluency as a concept, it seems, includes many perspectives, and the features that make it up are still being debated. Koponen and Riggenbach (2000) conclude that “there can ultimately be no single all-purpose definition of fluency” (p. 19) (Celce-Murcia et al., 2014, pp. 121, 122).

## 8.29. BILINGUALIZED DICTIONARIES

Bilingualized dictionaries may have some advantages over traditional bilingual or monolingual dictionaries. Bilingualized dictionaries essentially *do the job of both a bilingual and a monolingual dictionary*. Whereas bilingual dictionaries usually provide just an L1 synonym, *bilingualized dictionaries include L2 definitions, L2 sentence examples, as well as L1 synonyms. Bilingualized dictionaries were found to result in better comprehension of new words than either bilingual or monolingual dictionaries* (Laufer and Hader, 1997). A further advantage is that they can be used by all levels of learners: Advanced students can concentrate on the English part of the entry, and beginners can use the translation. For beginners, teachers may want to examine the bilingualized *Longman-Mitsumura English-Japanese Dictionary for Young Learners* (1993), which includes Japanese translations, definitions, and examples. Currently, neither Collins COBUILD, Longman, nor Oxford (all publishers with access to large, updated computerized English language databases) has bilingualized dictionaries for intermediate and advanced learners (Richards and Renandya, 2002, p. 263).

## 8.30. WHAT ARE NEEDS?

Needs is actually an umbrella term that embraces many aspects: What are learners' goals, backgrounds, and abilities? What are their language proficiencies? Why are they taking this course? What kinds of teaching do they prefer? What situations will they need to write in? How are writing knowledge and skills used in these situations? 'needs' could be interpreted in various ways according to the viewpoints of those who define it, e.g., instructors, students, supervisors, personnel, and investors might interpret 'needs' of learners in different ways. Overall, there is a common point in all definitions that knowing about the needs of learners provides teachers with a wealth of information leading to a better curriculum development by teachers exactly in line with their real educational needs (Mortazavi and Barjesteh, 2017).

Needs can be perceived objectively by teachers or subjectively by learners, can involve what learners know, don't know, or want to know, and can be analyzed in a variety of ways (e.g., Brown, 1995). Once again, needs analysis is not unique to language teaching. It is used widely in corporate training and aid development programs worldwide as a basis for securing funding and credibility by linking proposals to genuine needs (e.g., Pratt, 1980). In education contexts, needs analysis emerged in the 1960s through the

English for specific purpose (ESP) movement as the demand for specialized language programs expanded and, in North America, as the “behavioral objectives” movement sought to measure all goals with convincing precision and accountability (Berwick, 1989). Today, needs analysis is a form of educational technology represented in a range of research methodologies which can be applied before, during, or after a language course. Despite this apparently straightforward description, needs are not always easy to determine and can refer to students’ Immediate language skills or future goals, the requirements of employers, institutions, or exam bodies, or the visions of government organizations acting for the wider society. While needs are often seen as the gap between current and target needs (often called “lacks”), this gives a misleading objectivity to the process, suggesting that teachers simply need to identify and address an existing situation. In reality, needs reflect judgments and values and as a result, are likely to be defined differently by different stakeholders, with school administrators, government departments, parents, employers, teachers, and learners themselves having different views (Richards, 2001: 54). Teachers construct a picture of what learners need from a course through their analyzes, bringing to bear their values, beliefs, and philosophies of teaching and learning. To simplify this, we can distinguish between present situation analysis and target situation analysis (cf. Dudley-Evans and St John, 1998):

1. **Present Situation Analysis:** It refers to Information about learners’ current abilities, familiarity with writing processes and written genres, their skills and perceptions; what they are able to do and what they want at the beginning of the course. Data can therefore be both objective (age, proficiency, prior learning experiences) and subjective (self-perceived needs, strengths, and weaknesses).
2. **Target Situation Analysis:** It concerns the learner’s future roles and the linguistic skills and knowledge required to perform competently in writing in a target context. This involves mainly objective and product-oriented data: identifying the contexts of language use, observing the language events in these contexts, listing the genres employed, collecting, and analyzing target genes (Table 8.6).

**Table 8.6.** Present Situation and Target Situation Analysis

Present Situation Analysis	Target Situation Analysis
<p>Why are learners taking the writing course?</p> <ul style="list-style-type: none"> <li>• Compulsory or optional</li> <li>• Whether obvious need exists</li> <li>• Personal/professional goals</li> <li>• Motivation and attitude</li> <li>• What they want to learn from the course</li> </ul> <p>How do learners learn?</p> <ul style="list-style-type: none"> <li>• Learning background and experiences</li> <li>• Concept of teaching and learning</li> <li>• Methodological and materials preferences</li> <li>• Preferred learning styles and strategies</li> </ul> <p>Who are the learners?</p> <ul style="list-style-type: none"> <li>• Age / sex / nationality / L1</li> <li>• Subject knowledge</li> <li>• Interests</li> <li>• Sociocultural background</li> <li>• Attitudes to target culture</li> </ul> <p>What do learners know about writing?</p> <ul style="list-style-type: none"> <li>• L1 and L2 literacy abilities</li> <li>• Proficiency in English</li> <li>• Writing experiences and genre familiarity</li> <li>• ORTHOGRAPHY</li> </ul>	<p>Why does the learner need to write?</p> <ul style="list-style-type: none"> <li>• Study, work, exam, promotion, etc.</li> </ul> <p>What genres will be used?</p> <ul style="list-style-type: none"> <li>• Lab reports, essays, memos, letters, etc.</li> </ul> <p>What is the typical structure of these genres? What will the content areas be?</p> <ul style="list-style-type: none"> <li>• Academic subject, professional area, personal interest, secondary school, craftsman, managerial</li> </ul> <p>Who will the learner use the language with?</p> <ul style="list-style-type: none"> <li>• Native or nonnative speakers</li> <li>• Reader's knowledge — expert, layman, etc.</li> <li>• Relationship — colleague, client, teacher, subordinate, superior</li> </ul> <p>Where will the learner use the language?</p> <ul style="list-style-type: none"> <li>• Physical setting: office, school, hotel</li> <li>• Linguistic context: overseas, home country</li> <li>• Human context: known/unknown readers</li> </ul>

*Source: Hutchinson and Waters (1987, pp. 62, 63).*

### 8.31. GRAMMARING

To address the “carry-over” or “inert knowledge problem,” whereby students know the rules but do not necessarily apply them when they are communicating, Larsen-Freeman (2003) suggests that grammar instruction needs not only to promote awareness in students but also to engage them in meaningful production (Toth, 2006). Output production pushes students to move beyond semantic processing of the input to syntactic processing (Swain, 1985). Then, too, when students attempt to produce constructions, they have an opportunity to test their hypotheses on how the construction is formed or what it means or when it is used (Shehadeh, 2003). Following these attempts, they can receive feedback on their hypotheses and modify them as necessary. Therefore, Larsen-Freeman maintains that the proper goal of grammar instruction should be grammaring, the ability to use grammar constructions accurately, meaningfully, and appropriately. The addition of —ing to grammar is meant to suggest a dynamic process of grammar using. To realize this goal, it is not sufficient for students to notice or comprehend grammatical constructions or to repeat or transform them, as in the example lesson at the beginning of this chapter. *Students must also practice the meaningful use of grammar in a way that takes into account “transfer appropriate” processing* (Roediger and Gynn, 1996). This means that, for students to overcome the inert knowledge problem, they must practice using constructions to make meaning under psychologically authentic conditions, where the conditions of learning and the conditions of use are aligned (Segalowitz, 2003; Celce-Murcia et al., 2014, pp. 263, 264).

### 8.32. FOUR SENSES OF CONSCIOUSNESS

Schmidt (1994) distinguished four senses of consciousness. First, there is *consciousness as intentionality*. That is, learners can set out to learn some element of the L2 deliberately, or they can learn something incidentally while focused on some other goal (for example, while processing input for meaning). This sense of ‘conscious’ then juxtaposes ‘intentional’ and ‘incidental’ learning. Second, there is *consciousness as attention*. Irrespective of whether acquisition takes place intentionally or incidentally, learners need to pay conscious attention to form. This sense of consciousness encompasses the Noticing Hypothesis. Third, there is *consciousness as awareness*. That is, learners may become aware of what they are learning. Schmidt acknowledged that this is a contentious issue. He noted that whereas some cognitive psychologists such as Reber (1993)



have argued that learning is essentially implicit (i.e., takes place without awareness), others (such as Carr and Curran, 1994) have argued that learners consciously form and test hypotheses. Thus, while it is not *controversial to claim that awareness is involved in learning explicit knowledge, it is less clear whether consciousness is involved in the development of implicit knowledge*. Fourth, there is consciousness as control. That is, the actual use of knowledge in performance involves conscious processes of selection and assembly. Schmidt proposed that whereas fluent performance is essentially unconscious, it may have originated in earlier guided performance, as proposed by Anderson (1993). Schmidt's seminal work has established a clear role for consciousness in SLA and helped to show what this consists of. The general position that Schmidt adopted is that the role of unconscious learning has been exaggerated. Increasingly, SLA researchers have moved away from debating the role of consciousness to examining how attention functions in SLA. In making sense of the different positions that have been advanced, it is helpful to distinguish a number of different senses of 'attention.' Eysenck (2001), for example, pointed out that its primary use in cognitive psychology is to refer to selectivity in processing. He then distinguished focused attention,' which is studied by asking participants to attend to only one of two or more input stimuli, and divided attention,' which is studied by requiring participants to attend simultaneously to two or more input stimuli. With this important distinction in mind, we will examine how different SLA researchers have theorized the role of attention, starting with Schmidt (Ellis, 2008, p. 434).

### **8.33. LANGUAGE ACQUISITION DEVICE (LAD)**

Nativist approach to the study of child language asked some of those deeper questions. The term nativist is derived from the fundamental assertion that language acquisition is innately determined, that we are born with a genetic capacity that predisposes us to a systematic perception of language around us, resulting in the construction of an internalized system of language. This innate knowledge, according to Chomsky, is embodied in a "little black box" of sorts, a LAD. Mc Neill (1966) described LAD as consisting of four innate of four innate linguistic properties:

- The ability to distinguished speech sounds from other sounds in the environment;
- The ability to organize linguistic data in to various classes that can later be friend;



- Knowledge that only a certain kinds are not; and
- The ability to engage in construct evaluation of the developing linguistic system so as to construct the simplest possible system out of the available linguistic input.

Positioning that all human beings are genetically equipped with abilities that enable them to acquire language, researchers expanded the LAD notion in to a system of universal linguistic rules that went well beyond what was originally proposed for the LAD. UG research is attempting to discover what it is that all children, regardless of their environmental stimuli.

### **8.34. LANGUAGE ACQUISITION SUPPORT SYSTEM (LASS)**

Jerome Bruner emphasizes the critical roles of parents and other early caretakers in the child's language development. In addition to the presence of the LAD proposed by Chomsky, Jerome Bruner (1983) suggests that there is also a LASS (language acquisition support system). According to Bruner, adults provide a framework of 'scaffolding' which enables the child to learn. In contexts that are familiar and reutilized the adult, one step ahead of the child, cues the child's responses. By providing ritualized dialog and constraints through questioning and feedback to the child, the adult prepares the cognitive base on which language is acquired.

### **8.35. MODULARITY**

The notion of modularity is a view that each level of language processing operates independently of the others. A modular system is one which consists of several largely independent components which interact in such a way that the whole system performs some task or tasks successfully. Since the early 1980s, the concept of modularity has become prominent in linguistics and cognitive science in at least two ways. An issue of controversy has been the extent to which the mind should be viewed as *modular* or *unitary*. That is, should we see the mind as a single, flexible organism, with one general set of procedures for learning and storing different kinds of knowledge and skills? Or, is it more helpfully understood as a bundle of modules, with distinctive mechanisms relevant to different types of knowledge?

Gregg (2003) distinguished Chomsky's modularity (Specialized data based), and Fodor (IP module). Chomsky believes that language knowledge is independent from another aspect of mind. Language faculty is separated

from other mental faculty such as logic, mathematic, vision. Thus the theory divided the mind into separate compartment, separate module. UG is a theory of language module which has its own principle distinct from other module. This is contrasted with the unitary concept that the mind is a single unitary system like, connectionism (McClelland et al., 1986) or ACT model. Discussion of modularity is much influenced by Fodor. He views the mind as composed of a set of central systems which handle generalized operations such as attention or memory (The opposing view here is holism, the belief that the mind is essentially a seamless whole, with no specialized subparts). These are supplied with information by input systems which process sensory information and language. The input systems are modular, and each has specific functions. Fodor characterizes the systems as:

1. **Domain-Specific:** Input via the ears is processed as simple auditory input in the case of music or the noise of traffic, but is recoded phonologically by the speech module if it takes the form of speech.
2. **Mandatory:** We cannot help hearing an utterance as an example of speech.
3. **Fast:** The processes are highly automatic.
4. **Informationally Encapsulated:** A module receives information from other modules and passes it on, but its immediate operation is not affected by information contained elsewhere. So, while engaged in processing a spoken word, we cannot use context to identify the word more quickly (this does not preclude the use of contextual information at a later, post-perceptual stage).
5. **Localized:** Input systems are part of the hard-wiring of the brain; there is a fixed neural architecture for each. The modular view has consistently found support from within linguistics, most famously in the further debate between Chomsky and the child development psychologist, Jean Piaget. Piaget argued that language was simply one manifestation of the more general skill of symbolic representation, acquired as a stage in general cognitive development; no special mechanism was therefore required to account for L1 acquisition.

Chomsky's general view is that not only is language too complex to be learned from environmental exposure (his criticism of Skinner), it is also too distinctive in its structure to be 'learnable' by general cognitive means. In fact, Chomsky has been arguing that the human language faculty

is modular: that it must consist of a fairly large number of semi-autonomous units, each of which is responsible for certain particular aspects of our linguistic competence. This belief is strongly reflected in Chomsky's theory of grammar, the government- and -binding theory, which posits a number of specialized grammatical modules; each of these has its own requirements, and all must be satisfied for a sentence to be well-formed (Mithcell and Myles, 2004).

## 8.36. MEDIATION

Mediation is a central theme that runs throughout Vygotsky's thinking. In his texts, he distinguished between two basic types of mediation (Lantolf and Thorn, 2006).

### 8.36.1. Implicit Mediation

Implicit mediation, generally involves spoken language, is based on what Clark (1998, as cited in Wertsch, 2007, p. 180) calls "the supra-communicative perspective view of language," which contrasts with the traditional communicative perspective whereby speaking and thinking are two completely autonomous processes and speaking only functions to express and communicate thought.

### 8.36.2. Explicit Mediation

According to Wertsch (2007, p. 180), "explicit mediation is explicit because it is intentionally and obviously introduced into the course of an activity either by the individual or by someone else like a teacher." From this perspective, learning is a socially mediated process. It is dependent on face-to-face interaction and shared processes, such as joint problem solving and discussion.

The most fundamental concept of SCT is that the human mind is mediated. From Vygotsky's perspective, "human do not act directly in the physical world, they need tools to change the world. Similarly, they need symbolic (or psychological) tools to mediate and regulate their own psychological activity" (Lantolf, 2006, p.1). *For example*, when people eat hot dishes, they will not directly use their hands to touch the food; they will use forks, spoons, or chopsticks instead to help them to get the food, the forks, spoons, and chopsticks in these cases are physical tools. Similarly, when people want to talk with others, they will use language and gestures for

communication, in these cases, language, and gestures are symbolic tools. In a word, the process of mediation is like a triangle diagram of human-tool-world. Thus, the core of mediation is the use of tools. Vygotsky suggests that while physical tools are outwardly directed, symbolic tools are inwardly or cognitively directed (Lantolf and Thorne, 2007).

### 8.36.3. Forms of Mediation

According to Lantolf and Thorne (2007, p. 204), “children regulate their own activity through linguistic means by participating in activities (mental and physical) in which their activity is first regulated by others.” The process of self-regulation moves through three stages.

Regulation is one form of mediation (Lantolf and Thorne, 2007, p.203). While mediation is viewed in a broader context-the world as a whole, regulation concerns more in aspect of teaching and learning. Generally, there are three stages of regulation: *object-regulation*, *other-regulation*, and *self-regulation*. Children’s cognition developed from object-regulation to other regulation and eventually self-regulation. In the first stage, children are often controlled by or use objects in their environment in order to think (Lantolf and Thorne, 2007). This stage is known as *object regulation* (Lantolf and Thorne, 2007).

## 8.37. LONG-TERM MEMORY (LTM)

A store for permanent information, including world knowledge, the lexicon and general linguistic competence. In many accounts, LTM is distinguished from a sensory memory store of very brief duration, and from a limited-capacity WM which holds currently relevant information and handles cognitive operations. LTM supplies information to WM when it is required and receives information from WM that is destined for long-term storage. An item of information (e.g., a phone number or a name that we want to remember) can be consolidated and transferred from WM to LTM by *rehearsal*—by repeating it silently in our minds. Similarly, the more often we retrieve a particular item of information from LTM, the easier it becomes to access it and the less likely it is to be lost. Information that is rarely retrieved may decay, as in *language attrition*. Some accounts suggest that this is due to the loss of *retrieval cues* linked to the information sought. LTM would appear to involve multiple memory systems, each with different functions. A distinction is made between two particular types of knowledge: *Declarative knowledge* (knowledge that) and *Procedural knowledge* (knowledge how).

In a classic account of how *expertise* is acquired, information is received into LTM in declarative form and gradually becomes proceduralized as WM makes more and more use of it. A novice first draws on declarative knowledge in the form of a series of steps to which conscious attention (control) has to be given. In time, some of these steps become combined (composed), and the process becomes more and more automatic until it comes to form procedural knowledge. Two types of declarative memory are generally recognized:

- Episodic memory stores events; it is specific in terms of time and place; and
- Semantic memory stores generalized world knowledge.

The second may develop from the first. Imagine that a child stores in episodic memory a set of encounters with real-world entities that adults label *dog*. From these experiences, it can extrapolate a set of common features (or possibly a *prototype*); it thus forms a category in semantic memory which serves to identify the whole class of dogs. An alternative, *exemplar-based* view would minimize the role of semantic memory and suggest that we identify examples of a category like *dog* by relating them to many previous encounters with entities that have received this label, all of them stored episodically as individual events. Semantic memory in LTM is sometimes represented as schematic in form. A schema is a set of interrelated features associated with an entity or concept. For example, the schema for *penguin* might include: black and white, Antarctic, ice floe, fish, and paperback publisher. Schematic information strongly influences the way in which we process incoming information, and is sometimes critical to the understanding of a text. The ease with which a memory is retrieved from LTM is determined by how strongly encoded it is and by how precise are the available cues. Effective remembering may depend upon activating the same cues at retrieval as were originally encoded with the memory (the encoding specificity hypothesis). When subjects are asked to memorize the second words of some two-word compounds (e.g., *strawberry jam*), the first word (*strawberry*) provides a powerful cue in later recall. However, the same does not occur if a different cue such as *traffic* is used.

### 8.38. POSITIVE AND NEGATIVE EVIDENCE

In language acquisition, two types of evidence are important for the learner. Positive evidence is evidence that something is possible in the language being learned. For example, if a learner of Spanish encounters sentences

that have no subject, this serves as positive evidence that subjects do not (always) have to be overtly expressed in Spanish. Negative evidence is evidence that something is not possible. For example, in English, one can say *He sometimes goes there*, *sometimes he goes there*, or *He goes there sometimes*, but it is ungrammatical to say *\*He goes sometimes there*, an order that is possible in some other languages (French, for example).

Direct negative evidence in this case would consist of an explicit correction made by a teacher or conversational partner. The non-occurrence of such sentences in input may also constitute indirect negative evidence to the learner, but a learner could think that even though he or she has not heard such sentences, they are possible. Some SLA theorists believe that neither direct nor indirect negative evidence plays a role in language learning and that only positive evidence contributes to acquisition, any information that provides information on the result of behavior. For example, in phonetics, feedback is both air- and bone-conducted. This is why we do not sound to ourselves as we sound to others and find tape-recordings of our own voices to be odd and often embarrassing. In discourse analysis, feedback given while someone is speaking is sometimes called backchanneling, for example, comments such as *uh*, *yeah*, *really*, smiles, headshakes, and grunts that indicate success or failure in communication. In teaching, feedback refers to comments or other information that learners receive concerning their success on learning tasks or tests, either from the teacher or other persons.

One central issue in SLA theory-building is determining what types of linguistic input are most beneficial for L2 learners. On one hand, some researchers argue that negative evidence, information regarding the impossibility of certain linguistic structures in the language being acquired, is not necessary (and perhaps not consistently available) for L1 acquisition. They maintain that UG drives L1 acquisition solely on the basis of exposure to positive evidence, or exemplars of possible utterances in the language, which are present in all grammatical speech. However, research on SLA (especially in immersion contexts) has suggested that positive evidence alone may not be sufficient for the acquisition of certain L1-L2 contrasts or structures that are not present in the L1 form-focused instruction can involve providing learners with explicit information before or during exposure to L2 input, by means of either grammatical explanation or negative evidence in the form of CF. Much research has investigated the role of explicit grammatical explanation or rule presentation in SLA, generally finding it beneficial.

As far as CF is concerned, in both cognitive psychology and SLA, feedback has been directly linked to the process of hypothesis formation and testing, which has been shown to facilitate restructuring and system learning.

*Recast:* In SLA, a type of negative feedback in which a more competent interlocutor (parent, teacher, native-speaking interlocutor) rephrases an incorrect or incomplete learner utterance by changing one or more sentence components (e.g., subject, verb, or object) while still referring to its central meaning. Recasts have the following characteristics:

- They are a reformulation of the ill-formed utterance;
- They expand the utterance in some way;
- The central meaning of the utterance is retained;
- The recast follows the ill-formed utterance.

*Negative evidence* (information that a particular utterance is deviant vis-à-vis TL norms), it was pointed out that, at least with regard to children, it cannot be a necessary condition for acquisition. What, then, about L2 learning? It is undoubtedly the case that adults (at least those in formal learning situations) do receive more correction than children, and it may further be the case that adults must have negative evidence (i.e., that it is a necessary condition) in order to accomplish the goal of learning a L2. While this research has been based primarily on theoretical arguments, there is some empirical evidence that negative evidence is in some instances necessary for SLA. Acquisition appears to be gradual and, to state the matter simplistically, takes time and often requires numerous “doses” of evidence. That is, there is an incubation period extending from the time of the initial input (negative or positive) to the final stage of restructuring and output.

Although White’s study is important in showing that negative evidence may be necessary to trigger a permanent change in a learner’s grammar, it does not show that positive evidence (i.e., input) alone is insufficient. (In fact, the question group of White’s study received little information about adverbs from the naturalistic classroom data to which they were exposed.) positive evidence can reveal to learners the presence of information in the L2 that is different from their NL, but that negative evidence is necessary to show what is not possible in the L2 when it is possible in the NL.

*Negative evidence* refers to the type of information that is provided to learners concerning the incorrectness of an utterance. This might be in the form of explicit or implicit information. If positive, it can be either authentic or modified. If modified, it can be simplified or elaborated.



Negative evidence can also be of two types: pre-emptive (occurring before an actual error-as in a classroom context) or reactive. If reactive, it can be explicit or implicit. Explicit evidence is an overt correction. Implicit evidence can result in a communication breakdown or in a recast. Recasts, in turn, can be simple (a repetition) or elaborated (a change to a [generally grammatical] form). Negotiation for meaning, and especially negotiation work that triggers interactional adjustments by the NS or more competent interlocutor, facilitates acquisition because it connects input, internal learner capacities, particularly selective attention, and output in productive ways. It is proposed that environmental contributions to acquisition are mediated by selective attention and the learner's developing L2 processing capacity, and that these resources are brought together most usefully, although not exclusively, during negotiation for meaning. Negative feedback obtained during negotiation work or elsewhere may be facilitative of L2 development, at least for vocabulary, morphology, and language specific syntax, and essential for learning certain specifiable L1-L2 contrasts.

### **8.39. AUTOMATICITY**

Automaticity is the ability to do things without occupying the mind with the low level details that are required; this is usually the result of learning, repetition, and practice. For instance, when riding a bicycle, we do not have to concentrate on turning the pedals, balancing, and holding on to the handlebars but instead, those processes are automatic, and we can concentrate on watching the road and traffic around us.

McLaughlin (1990) noted two concepts that are fundamental in L2 learning and use: automaticity and restructuring. Automaticity refers to control over one's linguistic knowledge. In language performance, one must bring together a number of skills from perceptual, cognitive, and social domains. The more each of these skills is routinized, the greater the ease with which they can be put to use. SLA, in this view, takes place by the initial use of controlled processes. With time and with experience in specific linguistic situations, learners begin to use language more automatically, thus leaving more attentional resources for new information that requires more control.

According to Gass and Selinker (2008) theory of automaticity relates to theories of cognitive capacity and cognitive load, which suggest that at any given time, we have a finite amount of attention to give to an activity or process. When a process becomes more automatic, less attention is needed,



and attention can therefore be given to other processes or tasks. Automatic processing involves the activation of certain nodes in memory each time the appropriate inputs are present. This activation is a learned response that has been built up through the consistent mapping of the same input to the same pattern of activation over many trials. Because an automatic process utilizes a relatively permanent set of associative connections in long-term storage, most automatic processes require an appreciable amount of training to develop fully. Once learned, however, automatic processes occur rapidly and are difficult to suppress or alter. In short, automatic processes function rapidly and in parallel form (Shiffrin and Schneider, 1987; Gass and Selinker, 2008).

### **8.39.1. Advantages of Promoting Automaticity**

Promoting automaticity in learning will allow students to process information quickly and accurately, which will in turn help with fluency. All automaticity proposals for enhancing SLA are based, in one way or another, on the idea that extended practice under particular conditions and circumstances will increase fluency by developing automaticity. The challenge with using extensive drill and practice activities, however, is that they are usually boring for students which reduce motivation and investment in the language. The job of the language teacher is to incorporate activities that promote automaticity in a way that provides opportunity for transfer to new situations, real-life communication, and materials that relate to students' interests (Ellis, 1994).

Automaticity is the performance of a skill without conscious control. It results from the graduated process of proceduralization (Hulstijn, 1990). In the field of cognitive psychology, Anderson expounds a model of skill acquisition, according to which persons use procedures to apply their declarative knowledge about a subject in order to solve problems. On repeated practice, these procedures develop into production rules that the individual can use to solve the problem, without accessing long-term declarative memory. Automatization or automatic processing is a notion based on the work of psychologists such as Shiffrin and Schneider (1977, cited in McLaughlin, 1990) who suggested that the way in which we process information may be either controlled or automatic, and that learning involves a transition from controlled to automatic processing via practice. McLaughlin (1987, p. 136) points out that repeated performance of the components of the task through controlled processing leads to the availability of the automatized routines.

### **8.39.2. How Do People Develop Automaticity?**

Different models of skill acquisition show how people develop automaticity with practice, and they break down a complex process over time into understandable stages. In learning a foreign language, just as with other skill acquisition processes, we must start from an absolute beginning stage at which we have no language and must progress over time until we have acquired language proficiency. Ultimately, we hope to attain the stage where we can exert control over language well enough to allocate our attention to understanding and responding to the content of the messages — to actual communication. In real mainstream classroom instruction, however, it is hard to see how the process of acquiring functional proficiency levels over stages is actually acknowledged and dealt with (McLaughlin and Heredia, 1996). In terms of input and what is the object of study, discourse is typically broken down into smaller, discrete items for analysis and manipulation. The items are typically grammar points, key vocabulary, typical expressions, and the language associated with communicative situations and functions, etc. For each isolated item, explanation, and opportunities for practice activities are often given (Hulstijn, 1990).

Instructors assume that it is the learners' responsibility to practice what has been covered in class until they have acquired the target proficiency. On the other hand, many learners seem to think they have practiced enough after only a few times, even if the learners remain well short of being fluent and proficient in the objective of study. Keeping in mind what instructors and learners think about the matter; however, as Yoshimura (2000) mentioned learners typically stay at the faltering, controlled processing stage. In terms of the Anderson (1995) model as mentioned by Yoshimura (1999), it might be said that in much instruction the associative stage is neglected, but it is at this stage where learners come to coordinate many individual elements as a bridge to the autonomy stage. Too many of our language learners never develop skills to the point where they can perform more integrative and complex tasks of language use, communication, and literacy.

They need to free up their cognitive and memory resources by becoming fluent, automatic, and efficient at certain elements of processing in order to devote their mental resources to more involved, complex tasks of real communication and interaction. In short, they need to stick it out with some practice tasks until stages of automaticity have been reached. After practicing distinct skills until fluency with them has been reached, learners then need to practice them in more integrative, less framed tasks. In so doing, they will

also learn how to balance their attention span; their cognitive and memory resources can be more efficiently shared out to the various integrated parts of increasingly complex tasks.

## 8.40. AUTONOMY

Holec (1981) defines autonomy as ‘the ability to take charge of one’s learning.’ autonomy is a capacity for detachment, critical reflection, decision-making, and independent action autonomy is not synonymous with self-instruction and self-direction. To him, *self-instruction* refers to situations in which learners are working without the direct control of the teacher; and *self-direction* refers to situations in which learners accept responsibility for all the decisions concerned with learning but not necessarily for the implementation of those decisions. Benson (2001) who described learner autonomy as “a multidimensional capacity that will take different forms for different individuals, and even for the same individual in different contexts or at different times. Holec (1981) sees ability and accountability as working in five main areas: *shaping objectives, defining contents and development, choosing methods and techniques to be used, observing the procedure of acquisition, and appraising what has happened* (as cited in Vaziri and Barjesteh, 2019).

1. **Proactive Autonomy:** Learners are able to take charge of their own learning, determine their objectives, select methods and techniques and evaluate what has been acquired.
2. **Reactive Autonomy:** Enables learners to organize their resources autonomously in order to reach their goal.

### 8.40.1. Degrees of Autonomy

- Awareness;
- Involvement;
- Intervention;
- Transcendence;
- Creation.

The term autonomy refers to the individual effort through which learners initiate language, problem solving, strategic action and the generation of linguistic input (Brown, 2007).

## 8.41. NEEDS ANALYSIS

The very concept of language needs has never been clearly defined. However, in broad terms, NA can be described as identifying “what learners will be required to do with the foreign language in the target situation, and how learners might best master the TL during the period of training” (West, 1994, p. 1). Bachman and Palmer (1996) argue that ‘needs analysis, or needs assessment, involves the systematic gathering of specific information about the language needs of learners and the analysis of this information for purposes of language syllabus design’ (p.102).

Hutchinson and Waters (1987) distinguish between two types of needs: target needs and learning needs. Target needs comprise necessities (what the learner has to know in order to function effectively in the target situation), lacks (the gap between target and existing proficiency of the learner), and wants (the learners’ view on their needs). Learning needs, on the other hand, is a cover term for all the factors connected to the process of learning like attitude, motivation, awareness, personality, learning styles and strategies, social background, etc. West (1994, p. 4) extended Hutchinson and Waters’ classification of need Analysis and proposed the following taxonomy:

1. **Target Situation Analysis:** What the learners need to know in order to function effectively in the target situation.
2. **Deficiency Analysis:** The gap between what the target trainees know at present and what they are required to know or do at the end of the program. Other aspects of deficiency analysis investigate whether students are required to do something in the TL that they cannot do in their NL.
3. **Strategy Analysis:** it mainly identifies the learners’ preferred learning styles. Obviously, the focus here is on methodology, but there are other related areas such as: reading in and out of the class, grouping size, doing homework, learning habits, correction preferences.
4. **Means Analysis:** It is mainly concerned with the logistics, practicalities, and constraints of needs-based language courses.
5. **Language Audits:** This basically includes any large-scale exercise forming the basis of strategic decisions on language needs and training requirements carried out by or for: (1) individual companies; (2) professional sectors; and (3) countries or regions.

## 8.42. MOTIVATION, ORIENTATION, AND ATTITUDE

*Motivation* is usually defined as an inner drive, desire, or need to perform a particular action. Barjesteh (2018) postulated that three different perspectives (i.e., behavioral, cognitive, constructivist) for motivation. From *behavioristic perspective*, it is a matter of anticipation of reward. Various experts in the field such as Skinner, Pavlov, and Thorndike put this type of motivation as the cornerstone of their study. From the *cognitive aspect*, it relies on an individual's decision, and the choice people make as to what experiences or goal they will approach or avoid. From the constructivist perspective, each person is motivated differently, which is derived from interactions with the peers (Dornyei, 2005; Ellis, 2008). From this perspective, a number of influential theories emerged which aimed to explain the concept of motivation such as *attribution theory* (Weiner, 1992), self-efficacy theory (Bandura, 1993), self-worth theory (Covington, 1992), goal-setting theories (Locke and Latham, 1990), and self-determination theory (Deci and Ryan, 1985).

*Attitude* is a set of beliefs that a learner holds towards members of the TL group, TL culture, and also his/her own culture. A set of Attitude is personal feelings, opinions, or biases about races, cultures, ethnic groups, classes of people, and languages. Attitudes, like all aspects of the development of cognition and affect in human beings, develop early in childhood and are the result of parents' and peers' attitudes, of contact with people who are different in any number of ways, and of interacting effective factors in the human experience. These attitudes form a part of one's perception of self, of others, and of the culture in which one is living. *Orientation* is the underlying reason to learn an L2 (Barjesteh, 2018).

## 8.43. ANXIETY

The subjective feeling of tension, apprehension, and nervousness connected to an arousal of the autonomic nervous system. Intricately intertwined with self-esteem, self-efficacy, inhibition, and risk taking, the construct of anxiety plays a major affective role in SLA.

Anxiety has received the most attention in SLA research, along with lack of anxiety as an important component of self-confidence. Anxiety correlates negatively with measures of L2 proficiency, including grades awarded in foreign language classes, meaning that higher anxiety tends to go with lower levels of success in L2 learning. In addition to self-confidence, lower anxiety may be manifested by more risk-taking or more adventuresome

behaviors. The research on anxiety suggests that anxiety, like self-esteem, can be experienced at various levels. At the deepest, or global, level, trait anxiety is a more permanent predisposition to be anxious. Some people are predictably and generally anxious about many things. At a more momentary, or situational level, state anxiety is experienced in relation to some particular event or act. As in the case of self-esteem, then, it is important in a classroom for a teacher to try to determine whether a student's anxiety stems from a more global trait or whether it comes from a particular situation at the moment. Trait anxiety, because of its global and somewhat ambiguously defined nature, has not proved to be useful in predicting L2 achievement. However, recent research on language anxiety, as it has come to be known, focuses more specifically on the situational nature of state anxiety. Three components of foreign language anxiety have been identified in order to break down the construct into researchable issues: (1) *Communication apprehension*, arising from learners' inability to adequately express mature thoughts and ideas. (2) *Fear of negative social evaluation*, arising from a learner's need to make a positive social impression on others. (3) *Test anxiety*, or apprehension over academic evaluation. Yet another important insight to be applied to our understanding of anxiety lies in the distinction between debilitating and facilitative anxiety, or what Oxford called harmful and helpful anxiety. More recently, tension is identified as a more neutral concept to describe the possibility of both 'dysphoric' (detrimental) and 'euphoric' (beneficial) effects in learning a foreign language. We may be inclined to view anxiety as a negative factor, something to be avoided at all costs. But the notion of facilitative anxiety and euphoric tension is that some concern—some apprehension—over a task to be accomplished is a positive factor. Otherwise, a learner might be inclined to be 'wishy-washy,' lacking that facilitative tension that keeps one poised, alert, and just slightly unbalanced to the point that one cannot relax entirely. The feeling of nervousness before giving a public speech is, in experienced speakers, often a sign of facilitative anxiety, a symptom of just enough tension to get the job done. There is clear evidence to show that anxiety is an important factor in SLA. However, anxiety (its presence or absence) is best seen not as a necessary condition of successful L2 learning, but rather than as a factor that contributes in differing degrees in different learners, depending in part on other individual difference factors such as their motivational orientation and personality. Research into language anxiety has attempted to relate language anxiety to the developmental aspects of language learning and to a model of language processing.

#### 8.44. BASIC INTERPERSONAL COMMUNICATION SKILLS (BICS) VS. COGNITIVE ACADEMIC LANGUAGE PROFICIENCY (CALP)

A term developed by Cummins which refers to the kind of L2 proficiency that learners require in order to engage effectively in face-to-face interaction. Basic interpersonal communication skills (BICS) are the skills required for oral fluency and sociolinguistic appropriateness. They are *basic* in the sense that they develop naturally as a result of exposure to a language through communication. BICS is contrasted with cognitive academic language proficiency (CALP), which refers to the kind of L2 proficiency required to engage effectively in academic study. More specifically, Cummins has proposed that language proficiency be conceptualized along two interacting continua. One continuum relates to the extent of the contextual support available for expressing or receiving meaning. At one extreme, a task might require *context-embedded language* where communication derives from interpersonal involvement in a shared reality, while at the other the task might require *context-reduced language*, where shared reality cannot be assumed. The other continuum concerns the extent to which a task is cognitively demanding. This reflects the amount of information that must be processed simultaneously or in close succession and also the extent to which the information needed to perform the task has become automatized. Thus, CALP, unlike BICS, involves the ability to communicate messages that are precise and explicit in tasks that are context-reduced and cognitively demanding. Cummins has also argued that there is a *common underlying proficiency* between two languages. It is possible to transfer skills, ideas, and concepts that students learn in their L1 into the L2.

The notion of the CALP/BICS distinction has been attacked on a number of grounds, most notably that it promotes a deficit theory since it attributes the academic failure of bilingual/minority students to low cognitive/ academic proficiency rather than to inappropriate schooling. The ongoing controversy highlights the absence of consensus regarding the relationship of language proficiency to academic achievement.

#### 8.45. REGISTER, DISCOURSE, GENRE, TEXT TYPE

Discourse is the meaning that a first-person intends to express in producing a text, and that a second person interprets from the text (Widdowson, 2007). Genre is a use of language which conforms to certain schematic and textual



conventions, as agreed by a particular discourse community. Cook (1989) defines discourse as stretches of language perceived to be meaningful, unified, and purposive. Johnstone (2008) believes that discourse is the actual instances of communicative action in the medium of language. It is a meaningful symbolic behavior in any mode.

Finch (2005, p.227) defines register as socially or situationally defined style of language. Many field of discourse, such as religion and medicine, have their own language style. These are professional or technical registers. In a more general term: 'register' is also used to indicate degrees of formality within language use. A business letter, for example, will employ a more formal register than a domestic chat. Most subjects can be talked about in a variety of different styles along a scale of more or less formality. This is partly because of the considerable stylistic variations that exist in the lexicon.

A number of definitions of genre have been influential in the area of *and text type* genre analysis, notably those of Martin (1984) and Swales (1990). Martin's definition has been particularly influential in the work of the Australian genre-based approach to teaching writing. Martin (ibid.: 25) describes genre as 'a staged, goal-oriented, purposeful activity in which speakers engage as members of our culture.' Further examination of Martin's work, in which he gives examples of genres such as poems, narratives, expositions, lectures, seminars, recipes, manuals, appointment-making, service encounters, and news broadcasts, clearly shows that his definition takes largely the same perspective on genre as that of Biber (1988). Swales' (1990) definition of genre as 'a class of communicative events, the members of which share some set of communicative purposes which are recognized by the expert members of the parent discourse community' shows that he, too, views the notion of genre from a similar perspective to that expressed by Biber. Various examples have been presented of the rhetorical structuring of different text types. For instance, Meyer (1975), in an analysis of the rhetorical organization of 'expositions,' presents four main types of text structure: time order, collections of descriptions, comparisons, and cause and effect. Other discussions of rhetorical patterning in texts can be found in the work of Hoey (1983), who discusses problem-solution, general-particular, matching contrast, and hypothetical-real texts, and Crombie (1985), who presents examples of the problem-solution and the topic-restriction-illustration type of text. Hedge (1988) presents text type categories such as static descriptions, process descriptions, narratives, cause, and effect, discussions, compare, and contrast, classifications, definitions, and reviews.



McCarthy (1991) and McCarthy and Carter (1994) discuss rhetorical variation in texts, and present a number of examples of commonly occurring text types. Each of these descriptions of rhetorical patterning is extremely useful for the language learning classroom.

## 8.46. MIND AND BRAIN

Clark (2000) makes a distinction between the brain and the mind. As he asserts, the human brain is the organ of soft nervous tissue which fills the skull of humans. But the mind is an ‘emergent property’ of the brain. In other words, the mind comes after the brain-mental events are the subjective experiences of the physical events which occur in our brains.

To put it in Libet’s words (2006): The mind can only be regarded as a subjective experience, which is accessible only to the individual who has it. Thus, it can only be studied by reports given by the subject her/ himself. It cannot be observed or studied by an external observer with any type of physical device. In this sense, subjective experience (the conscious mind) appears to be a non-physical phenomenon.

Of course, Libet (2006) cites de Laplace (1914), who believed that if the nature of the molecules and structures in any system were known, one could describe and predict all of its behaviors. But he considers this idea as the ultimate materialist! Gould (2009) believe that the *mind* is not a thing, but rather a *distributed process*, and hence it is *difficult to localize*. The Mind is like a verb, an action, and is thus difficult to point to and grasp-unlike the Brain, which is like a noun, and is thus easy to find and embrace.

Wilder Penfield, a world authority on brain surgery, in his book, *Mystery of the Mind* (1975), declares that the brain is a computer; the mind is a programmer. Just as a computer becomes useful when it is given a program and operated by somebody outside itself, it is the mind that gives the program instructions to the brain. According to Penfield, the mind and the brain are connected but separate beings. Finally, in search for the question of what is the mind? he could not help accepting the existence of the spiritual energy and the existence of the soul.

Eccles and Robinson (1984) insist that the mind and the brain are different entities when they assert that we are a combination of two things or entities: our brains on the one hand; and our conscious selves on the other. The self is central to the totality of our conscious experiences as persons through our whole life. At the end of his life-long fight against materialism,

Eccles (1994) points out that “The most important program... is to challenge and negate materialism and to reinstate the spiritual self as the controller of the brain” (p. 49).

### **8.47. EVERYWARE**

The term *everyware*, introduced by Greenfield (2010, cited in Kazemainy et al., 2020), refers to the pervasive nature of mobile technology as facets of the same paradigm of interaction. Everyware use wearable computers and artificial intelligence (AI) to access all places, which may seem unreachable without its existence and penetration; meanwhile, the presence of everyware is so natural and relaxing that the intricate technology itself has disappeared from the ubiquitous functionality.

### **8.48. WAIT-TIME**

Rowe (1974, as cited in Kamdideh and Barjesteh, 2019) defines wait-time as the amount of silent time a teacher allows to pass before and after a student response to a question. Rowe’s research documented that teachers typically wait less than 30 seconds after asking a question before calling on students to respond. She argues that for many students, this provides little opportunity to process the question and formulate an answer. Rowe (1969) defined two types of wait time: wait time I was defined as the duration of the pause after a teacher utterance; and wait time II was defined as the duration of the pause after a student utterance. An extended or criterion wait time I and II was defined as an average of between 3 and 5 seconds. In most instances wait time I is related to the pause following a teacher question and wait time II is the pause after a student response to a question. Kamdideh and Barjesteh (2019) concluded that the extended wait-time can promote EFL Learners willingness to communicate (Kamdideh and Barjesteh, 2019).

### **8.49. HOME LITERACY PRACTICE (HLP)**

Leseman and de Jong (1998) defined HLP language behaviors which experience literacy learning environments. HLPs refer to experiences with various literacy-related activities, like knowledge usage processes. Sénéchal, LeFevre, Thomas, and Daley (1998) demonstrated that home literacy activities are divided into two forms: formal and informal. Formal literacy practices refer to activities in which language learners focus on understanding print itself. On the other hand, in the informal printed literacy,

the focus is on developing comprehension of the message or story. HLPs are divided into a variety of activities based on purposes, participants, and types of interaction including reading, writing, school-related activities like homework, entertainment like reading game rules, religious activities like reading Bibles, domestic chores such as reading and writing shopping lists and paying bills, and communication by reading and writing letters, notes, and holiday cards (Barjesteh, Vaseghi, and Yousefi, 2016).



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# Trends in Second Language Acquisition

This book tends to help EFL/ESL learners at the postgraduate level to cope with the main trend in second language acquisition (SLA). This book briefly introduces the main current theories in the field of SLA, outlining basic ideas in each as well as their basic claims. It offers students concise introductions to core topics in SLA in encyclopedia-like descriptions of a number of key terminologies used in the literature. It goes without saying that these terminologies are not exhaustive, and we apologize in advance for any terms we may have left out. The goal is not to be exhaustive but rather to provide a sketchy overview of the basics for the readers. We wrote this book with the intention of providing our intended readership, including MA students, PhD students, teachers, and researchers, with a substantive source by which they can acquire a first-hand, immediate experience with the ins and outs of exams and interview requirements. Citations provided within this section will lead the reader to the original. The book is helpful for readers interested in SLA and EFL/ESL teaching, and it can be used in both undergraduate and graduate courses. Its clear and concise overview of the main issues, terms, and people in SLA makes it a must-have reference for anyone in applied linguistics. The most outstanding feature of the book is its concise description and controversial topics dominating polemical debates defining the interlocking dimensions comprising the field of English language teaching. We believe that this book is well-suited for candidates in master's degree and PhD programs as well as language teachers. The organization of the book is, in fact, transparent enough to support student learning about the successful handling of their content knowledge. We hope that the reading of the book caters to the continuing process of inquiry which is the ultimate goal in the new-found reformulation of ideas evolving in the history of language teaching and learning.



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