Grammatical Development of Chinese among Non-native Speakers

Grammatical Development of Chinese among Non-native Speakers: From a Processability Account

By

Xiaojing Wang

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I would like to dedicate this book to my beloved parents
Mr. Ao Wang and Ms. Qin Wang

My grandparent and granduncle
Mr. Jing An Wang and Mr. Ming Cao

And all my family members

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PREFACE

Professor Manfred Pienemann, who works in Processability Theory, predicts that in the acquisition of language processing procedures, the assembly of the component parts will follow an implicational sequence. Relevant research has been done in Arabic, Japanese, English and Italian, but only two main studies have been conducted in Chinese. Therefore, this book aims to identify the natural morphosyntactic development of L2 Chinese learners, with respect to Processability Theory. The book starts with a theoretical description of Processability Theory and the related literature. It then deals with and discusses the application of tasks in class teaching and assessment.

This book will be of interest to both Chinese language learners and their teachers. On the one hand, this book will help language teachers to understand the acquisition trajectory of Chinese as a second language and to find out how and why learners' language progresses in the way it does; on the other hand, it will provide both language teachers and learners with sufficient information concerning the design and implementation of task-based materials to facilitate language development in Chinese. Generally speaking, this book will be enriching for the reader from both a theoretical and a practical perspective.

In fact, the significant number of L2 Chinese learners worldwide was the decisive factor in motivating me to embark upon such a complex task—I am intrigued by this topic. However, the journey which writing such a book took me on is strewn with triumphs, failures and near misses. Firstly, understanding Processability Theory is grueling work, as it involves a great number of complex and profound psycholinguistic concepts. Countless hours spent in the library, day after day, have helped me to progress and to deepen my understanding of the theory. In the meantime, the support offered by Professor Manfred Pienemann and his colleagues has been precious. Secondly, the time-consuming process of transcribing and analyzing speech data has tortured me to the point of fatigue, but enthusiasm and faith in this new topic helped me along the way to success.

All in all, this book will contribute to the existing research into Chinese as a second language and benefit a large number of L2 learners. More importantly, the process of completing this study has taught me how to properly conduct research.

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Also, I want to offer my special thanks to the voluntary subjects who participated in my research, for the contribution of their time and their assistance in the data collection process. I also would like to acknowledge the contribution from the other seven students, who anonymously provided Chinese language data in my pilot study.

I particularly owe my sincere gratitude to my beloved parents who have always supported me year by year. Without their financial and spiritual support, theundertaking of my research could not have been successfully achieved. I would also like to express my love to my grandparent and granduncle, who have shown me their love, care and support all the time. Special gratitude also goes to my close friends and other family members, including my dearest brother (Xiao Miao Wang) and sister-in-law.

List of Abbreviations and Acronyms

ADJ	Adjective
ADV	Adverb
ASP	Aspect (marker)
ATT	Attributive (marker)
CL	Classifier
COMP	Complement
CSL	Chinese as a second language
DC	Complement of degree
DET	Determiner
ESL	English as a second language
EXP	Experiential (marker)
FT/FA	Full transfer, full access
GCSE	General Certificate of Secondary Education
HSK	Hanyu Shuiping Kaoshi (Chinese proficiency test)
IL	Interlanguage
Info.	Information
IP	Imperatives
L1	First language
L2	Second language
LFG	Lexical Functional Grammar
LOC	Location
MM	Multidimensional Model
N	Noun
NP	Noun phrase
NUM	Number
OAC	Open Access Centre
OBJ	Object
PCL	Particle
PERF	Perfective (marker)
POSS	Possessive (marker)
PRED	Predicate
PRES	Present tense
PRO	Pronoun
PROG	Progressive (marker)
PT	Processability Theory

RC	Relative clause (Complement of Result)
S	Subject
SF	Sentence-final
SLA	Second language acquisition
SPEC	Specifier
SUBJ	Subject
SVO	Subject + Verb + Object
T/TOPI	Topic
TBLT	Task-based Language Teaching
TTR	Type-token ratio
UG	Universal Grammar
V	Verb
VF	Verb-final
VP	Verb phrase
XP	X-phrase

PART I:

RESEARCH BACKGROUND AND APPLICATION OF PROCESSABILITY THEORY ON CHINESE

CHAPTER ONE

INTRODUCTION: THE WIDER CONTEXT

1.1 Background

Over the last two decades or so, the research of a large number of scholars has focused on a variety of topics relevant to second language acquisition (SLA). Despite the intensity of SLA research, the knowledge gained has not yet influenced the language teaching profession very much, although it has been suggested that knowledge about the nature of SLA should make up part of what should be taken into account in language teaching (Cook, 2008).

From another perspective, among the world's mainstream languages, Standard Mandarin Chinese (Chinese or *PuTongHua*) has occupied an important position. Research into the Chinese language has been ongoing for more than 45 years (Chao, 1968; He, 2004; Gao, 2005; Zhang, 2001 and 2008). Studies in Chinese, longitudinal as well as cross-sectional, are from a wide range of methodological backgrounds (Yuan, 1997, 2002 and 2007; Pienemann, 1998b and 2005; Zhang, 2001; Gao, 2005). Although these studies use a range of research methods, no research has, as yet, been conducted through the elicitation of structures among learners who take Chinese as a second language (CSL), in the non-native context, and in the developmental stages. This study aims to rectify this deficit.

To be specific, this study explores the developmental trajectory for CSL learners, and elicitation tasks are designed in order to facilitate language assessment and teaching. The fundamental theory which supports my research into the developmental stages in learners' second language (L2) is Pienemann's Processability Theory (1998b, 2005, and 2008b). Pienemann has claimed that L2 learners follow a universal grammatical route in the process of acquiring a second language.

Although quite a few studies (e.g., Kawaguchi, 1996, 1999 and 2005a; Håkansson, 2001; Mansouri, 1997 and 2002) are being carried out based on Processability Theory in a variety of languages, only a small amount of

research focusing upon Chinese has been carried out, due to its grammatical complexity (i.e., Gao, 2005; Zhang, 2001 and 2008).

1.2 Introduction of Previous Studies and Further Research Focus

With the development of the Chinese economy, a great emphasis has been laid on the Chinese language, which has a strong appeal to learners from across the world, and a large number of studies regarding Chinese as a foreign or other language have emerged (e.g., Wen, 1995a and 1997; Zhang, 2001; He, 2004; Gao, 2005, etc.). These studies have mainly discussed and tested the learning approaches and the natural acquisition order of the Chinese language by non-native Chinese speakers. One main study on CSL acquisition development by Zhang (2001) examines the development of eight Chinese morphemes in three learners. Zhang develops a sequential hierarchy of eight Chinese morphemes, based on Processability Theory, which are (1) adjective marker -*de* (2) possessive marker -*de* (3) attributive marker -*de* (4) experiential marker -*guo* (5) progressive marker -*zhe* (6) V-complement marker -*de* (7) classifier and (8) relative clause marker *de*.

Following Zhang's (2001) research, Gao (2005) has conducted a study among two groups of CSL learners, in which she identified several grammatical structures at the syntactic levels such as "*ba* structure" and "topicalization" in Chinese. However, Gao's research design, in terms of her research subjects backgrounds and the approaches used in data collection was not explicitly presented.

In Zhang (2008), the proposed hierarchy in Chinese is extended to encompass the following syntactic aspects: (1) topicalization: OSV, SOV; (2) XP SV(O)/S XP VO: adv-fronting and subordinate clause; (3) canonical SV(O): declaratives and interrogatives (y/n, *wh*- question, intonation). However, Zhang uses elicitation tasks when retrieving data which seem artificial; in addition, her research participants have been taught through sequences which follow the processability hierarchy—hence, on this basis one cannot draw firm conclusions about whether the relevant instructions will constrain CSL acquisition. Therefore, in order to develop the hypothesized stages in Chinese, and to cover the gaps discussed above, my research will attempt to test and extend the existing processability hierarchy in a different group of CSL learners and to then generate the required practice tasks.

These objectives will be accomplished in terms of (a) the application of the processability hierarchy in the study of a different group of CSL learners, in order to validate Zhang's (2001 and 2008) and Gao's (2005) results; (b) the extension of the current CSL hierarchy to syntactic categories; (c) the design of tasks for the elicitation (and acquisition) of particular structures. Thus, my study explores the predictive and explanatory power of Processability Theory in the acquisition of Chinese as a second language.

1.3 Organization of the Book

Processability Theory (PT) is used as a descriptive framework because previous work on Chinese as a second language has successfully used this framework. In addition, PT has been shown to be typologically plausible and a useful general framework for the Teachability Hypothesis (Pienemann, 1998b). Therefore, the purpose of this study is to present additional empirical support for the sequence of the acquisition of Chinese as a second or other language and to develop tasks that can be used in a learnable and/or teachable syllabus.

This book is divided into two parts. Part one aims at validating and supplementing the research results presented in Zhang (2001 and 2008) and Gao (2005), by applying their general framework to the study of a different group of informants and the employment of different research methods. Part two is motivated by the need to address some of the difficulties encountered by the research presented in part one. The research data in part one is mainly generated from natural speech (as well as a few designed tasks), an extremely time-consuming process. In this case, appropriate tasks are designed for quick and purposeful elicitation of speech in Chinese.

Chapter 2 in part one briefly examines the foundations of PT. This is followed by a summary of the key aspects of PT, with an emphasis on universal processing sequences, underlying principles and relevant theoretical grounds. In particular, the explanation of the processability hierarchy is clearly illustrated, as is the critical debate regarding PT. Finally, this chapter investigates the relationship between teaching approaches and learners' language development, based on the Teachability Hypothesis and the Processability Theory and discusses the potential connection between these two constructs.

Chapter 3 provides information about the Chinese language. Like European languages, Chinese has its own specific morphosyntactic

features. For example, Chinese is a tenseless language. On this basis, the application of PT to CSL learners requires considerations which depart from those relevant to the application of PT to Germanic languages.

Chapter 4 presents a literature review which aims to identify the gap in CSL research concerning the aspect of language processing. Zhang's (2001 and 2008) and Gao's (2005) studies, as well as a few other studies in Chinese that have also explained the processing or development of a number of Chinese morphemes and syntactic structures, are described and reviewed, in line with this particular focus.

Chapter 5 and *Chapter 6* discuss research contexts and methodological issues, including research questions, design, methods, participation and working procedure. More importantly, in *Chapter 6*, issues relevant to participant selection and data collection and analysis are discussed. A discussion of task design is also provided, drawing upon a large body of literature. Due to the nature of PT, the discussion is specifically targeted towards analytical issues which may affect the determination of interlanguage status, such as transcription conventions and emergence criteria.

In *Chapter 7*, the collected data is illustrated, analyzed and discussed. This chapter provides a detailed account of the grammatical development in the 11-month-production of eight learners of Chinese. All the subjects' language production is analyzed, in accordance with the PT hierarchy. The data is then further investigated by examining the possible effects that data elicitation methods and formal instruction have on speech production and, ultimately, on the output of the learner language. These analytical results are compared with the results presented in previous research. Moreover, an additional textbook analysis is carried out. The grammatical contents of different textbooks, as well as the actual teaching curriculum, are evaluated and compared, with respect to the PT route, and these findings are deployed in a discussion of the relation between learners' language development and teaching contents.

Moving on to part two, *Chapter 8* provides the essential framework for task design. Then, the tasks used in previous PT-based studies are critically reviewed and discussed. On the basis of a pilot study conducted among a group of native and non-native Chinese speakers, a variety of tasks are designed and revised, according to the different grammatical structures available to the learners at PT-driven stages in Chinese.

In conclusion, *Chapter 9* reiterates and summarizes the key findings of the study. It reflects on the limitations of the research and makes some recommendations for future CSL research either within the PT framework

or in terms of language development. The personal experience I have gained through this practice is also illustrated.

CHAPTER TWO

THEORETICAL FOUNDATION OF PROCESSABILITY THEORY: A REVIEW OF LITERATURE

Second Language Acquisition (SLA) studies in the framework of Universal Grammar (UG) have usually investigated "what" the language acquired is, but rarely explain clearly "how" the language is acquired. VanPatten (1989) has emphasized that the processes underlying acquisition itself have never really become a focus of inquiry in SLA. Processing-constraint theories work on this logical problem.

Norris and Ortega (cited in Doughty and Long, 2005) have claimed that the epistemological approach to SLA focuses on the construction of linguistic mental representations, and does not concern itself much with interpreting how such representations become available to the learners via a predictable route. However, greater emphasis has been placed upon this issue in recent years, and an increasing number of studies carried out on this aspect. One of the goals of SLA is to clarify how learners can acquire complex L2 properties, and why they may not acquire all aspects of L2 grammatical features during their lifetimes. The reasons are being investigated from a range of different angles. From a psychological point of view, this problem can be explained as a mathematical issue, requiring a dynamic human processor added by Processability Theory. My research contributes to the investigation of how an L2 is processed, according to Processability Theory.

The focus of this chapter is a review of the literature relating to L2 processing and development. The aim of this review is to provide the necessary background and foundation for the present study on language processing constraints and the grammatical structures regarding L2 developmental procedures. This review concentrates on the linguistic concepts which account for the transition mechanisms of L2 processing, and the effort to understand and explain the L2 developmental route.

Firstly, an introduction of Processability Theory is outlined, in order to develop a full picture of the theoretical basis of the current study. Then, the fundamental aspects of research into Processability Theory are discussed, in order to reinforce comprehension of its core inclusions and concepts. Next, the core concepts of Processability Theory are demonstrated, on the basis of their typological plausibility, psycholinguistic constraints and a processability hierarchy, with reference to empirical support for the approach in the context of studies on a variety of languages. In addition, a framework for psycholinguistic language processing—Lexical Functional Grammar—will be introduced, since it is required for the explanation and interpretation of the features of language targeted by Processability Theory and its underlying processing trajectory. Further discussion and critique of Processability Theory will then be provided, with detailed arguments and examples. Finally, the challenge of the Teachability Hypothesis (as well as learnability issues) for the application of Processability Theory in practical teaching and learning will be stated.

2.1 Introduction of Processability Theory (PT)

Since the mid-1980s, Pienemann (1984 and 1985) and his colleagues have tried, precisely and empirically, to explain the deep insights of L2 development from a psycholinguistic point of view. Pienemann (1998c) established a universal hierarchy which explains processing complexity. His tests found that instruction and the learners' first language (L1) backgrounds will have little effect on learners' L2 acquisition if the learners are not yet ready to integrate new linguistic knowledge into their existing mental system. PT was "born" out of this background.

The aim of PT is to solve the following developmental problem: why does the development of L2 competence follow a describable route? The actual construct assumed by this theory is that language processing mechanisms constrain SLA. Therefore, language development occurs mainly on the basis of the removal of these processing constraints (Pienemann, 1998c).

Pienemann (1998c) states that the three main features of PT are (1) language-specific, (2) incremental and (3) linear. The explanations offered thus assume that language processing procedures are universal but also language-specific. For example, when applying the processability hierarchy to a particular language, the grammatical features of the target language should be considered. As highlighted by Pienemann (2008a), some scholars have attempted to apply the developmental hierarchy

generated for English or German directly to other languages, without appropriate comprehension of the features of these target languages. Such an indiscriminate approach to the application of the processability hierarchy of English to Chinese, for instance, is not feasible since there is no tense aspect or third-person (3rd person) singular in Chinese language, as in English. Thus, linguistic features of each individual language should be specifically identified, in addition to recognising the universal properties of the developmental trajectory. Adopting this perspective does not lead to contradiction.

The language-specific feature also yields multiple structures at each processing stage. It establishes that structures belonging to the same stage are all processable in the same manner.

Within the umbrella of PT, the learners' L2 production follows the sequence of processing routines which the current state of the computational mechanism—language processor—can manage. Thus, Pienemann (1998c) claims that the development of language builds on learners' current linguistic capacity and knowledge. Following the preceding stages, linguistic competence is incrementally accumulated. Put very simply, L2 ability at any one stage implies the existence of L2 ability at all earlier stages (Doughty and Long, 2000). The developmental stages in PT cannot be jumped, and the learners' language production can only proceed to the point where the structure of a phrase has been created and the associated lemmata have been activated (Pienemann, 2005).

Accordingly, the developmental trajectory of the L2 knowledge follows a linear sequence (Cook, 2009; Glahn et al., 2001; Pienemann, 1998c). However, even though the output of the processor is linear, it may not be mapped onto the underlying meaning in a linear way (Pienemann, cited in Pienemann and Keβler, 2011). Such linearization problems operate at the grammatical level and involve the storage of grammatical information. Thus, if a learner has not developed a given required procedural skill in the implicational hierarchy, the hierarchy will be cut off on the way to the target grammar. In this case,

> "the rest of the hierarchy will be replaced by a direct mapping of conceptual structures onto surface form as long as there are lemmata which can match the conceptually instigated searches of the lexicon".
>
> *—Håkansson, Pienemann and Sayehli, 2002: 263*

It seems that the task of acquiring a language focuses on the production of relevant grammatical structures, but in fact, this requires the

development of the procedural skills needed for the production of these grammatical structures; otherwise, learners may just remember the structure *per se* as a chunk. Therefore, under the developmental dimension of PT, stages are explained in terms of a universal hierarchy of processing procedures: skill-based, language-specific, and lexical-grammatical "encoding operations" (Levelt, 1989).

Within the formulation of the PT framework, processing capacity is articulated within a number of psycholinguistic models and theories including feature unification (which guarantees that each component or constituent of a sentence does actually fit together) and information exchange between the constituents of a string (Pienemann, 1998c). Originally, this theoretical basis formed the processability hierarchy of English as a second language (ESL), under a series of empirical studies (Johnston, 1985; Pienemann, 1998c and 2005; Kawaguchi, 2005a). In Johnston's (1985) cross-sectional study of 16 Polish and Vietnamese learners of English, which include 12 grammatical rules contained in the ESL table (ref. Table 2-1), the results are presented in the form of an implicational table with 100% scalability, which indicate that "there is no single piece of evidence to contradict the implicational pattern" in Table 2-1 (Pienemann, 1998c: 177). In other words, Johnson's study strongly supports the English processability hierarchy.

Further evidence to support the proposed ESL hierarchy is provided by a cross-sectional study of 13 ESL children learners (aged 8-10 years) acquiring 14 English structures, which also resulted in an implicational table with 100% scalability (Pienemann and Mackey, 1993).

To extensively support the feasibility of this processability hierarchy, additional longitudinal evidence has been found regarding the cumulative hierarchy of interrogatives implicit in the ESL scale (Cazden et al. 1975; Rosansky, 1976). Six Spanish ESL learners were studied and the results were aligned with the identified ESL processing procedures drawn from PT. The processing procedures applied to English are displayed below in Table 2-1.

In Table 2-1, an implicational scale of ESL processability hierarchy is laid out. Grammatical structures are listed on the left-hand side, while the morphological and syntactic patterns have been separately listed in the table. During actual speech production and comprehension of ESL learners, the above path illustrates the way interlanguage (IL) grammars are incrementally processed by the linguistic system. It also outlines the model of psycholinguistic processing assumed by PT and illustrates how stages fall out of it.

Table 2-1 ESL processing procedures (Pienemann, 2003: 695)

Processing Procedure	L2 Process	Morphology	Syntax
6 S-bar procedure	Main and sub-clause	/	Cancel Inversion
5 S-procedure	Inter-phrasal information	3sg -s	Do-2nd, Aux-2nd, Neg-do2nd
4 Phrasal procedure (verb phrase)	Phrasal information within verb phrase (VP)	/	Y/N inversion Copula inversion
3 Phrasal procedure (noun phrase)	Phrasal information within noun phrase (NP)	NP agreement	Adv-fronting, Do-front, Neg+V
2 Category procedure	Lexical morpheme	Plural-s, past-ed Possessive pronoun	Canonical order
1 Word/lemma	Words	Invariant forms	Single constituent

It is seen that the morphological forms of English included in this hierarchy are correlated with processing procedures in a straight-forward manner. At stage 2, the diacritic features, such as the plural forms in English, occur at the lexical level; therefore, no information exchange is required for this process, as long as the diacritic feature is marked in one constituent only.

At stage 3, information exchange exists in the noun phrase (NP) between the head of the NP and other NP constituents. For instance, in the plural agreement of the phrase “three books”, the number “three” should be matched with the noun “books” within the phrase. In terms of verb phrases (VP), phrasal information exchange within the VP occurs at stage 4. For instance, in question forms containing a copula (e.g., “Is she good?”), the copula has to be brought into an initial position. The subject and the copula are then inverted. Students at this stage cannot distinguish direct and indirect questions in English (Pienemann, 2011).

Inter-phrasal information, at stage 5, needs to be in place for the operation to be executable—there is an exchange of information across constituent boundaries. In the Subject-Verb agreement marking (3rd person singular), the features “person” and “number” have to be unified and deposited in the S-procedure. According to our best current understanding of ESL procedures, “Cancel Inversion” lies at the sixth stage of the

hierarchy, and includes the information exchange between the main and subordinate clauses. The table also shows that the word order phenomena observed in direct questions do not apply in the context of indirect questions (Pienemann, 2011). Therefore, a matrix clause may be added in order to resolve this problem.

From another perspective, this identified ESL hierarchy, constrained by developmental skills, has been used as a measurement of English language acquisition among L2 learners with various L1 backgrounds. A shorthand version of the original procedure has been developed by Pienemann (1998c) called Rapid Profile, based on on-line observation of the English L2 learners' language production, with the assistance of a series of tasks either designed or revised by Pienemann (1998c).

Summing up, the application of PT to English has illustrated PT's predictive power. PT is currently being extended to incorporate pragmatic principles into the developmental approaches to SLA research (Pienemann, Di Biase and Kawaguchi, 2005), in an effort to obtain a more complete picture of PT. In other words, research into PT is being enriched by appealing to a variety of linguistic aspects and principles.

2.2 Foundational Research Regarding PT

Around 40 years ago, Dulay and Burt (1973 and 1974) reported that English children acquiring English as an L2 follow a particular order in the acquisition of grammatical morphemes, regardless of their first language. Since then, Krashen (1985) has shown and concluded that language learners acquire certain grammatical structures in a predictable order, some tending to come earlier and others later. But no specific and systematic picture of the acquisition order has been drawn, based upon these findings. Recently, additional studies have contributed to this area in SLA (e.g., Pienemann and Johnston, 1993; Shi, 1998; etc.).

Hawkins' (2003) findings have led to a general agreement that L2 learners follow a predictable route of development, mostly independent of age, native language, type of exposure or educational background, indicating that a universal developmental trajectory exists. To be more specific, Nunan (cited in Nunan, 1987) has highlighted that early morpheme order studies indicate a predetermined order of acquisition, unchanged by instruction. Therefore, if teachers attempt to teach learners what they are not ready for, the result will be confusion and false hypotheses (Corder, 1981; Pienemann, 1998c).

In this context, PT proposes a hierarchy that provides information for teachers/instructors to use when helping L2 learners to construct their linguistic knowledge. Two main aspects should be discussed before going further with the theory. First, the concept of IL must be clearly identified as a key stage of language development discussed within the theory; in addition, the fundamental research conducted in the construction of PT needs to be illustrated.

2.2.1 Interlanguage and Its Underlying Perception

The prior linguistic knowledge of L2 learners will, to some extent, condition the way they construct their acquisition of a new language. It is evident that even though L1 does play a certain role in the process of L2 acquisition, learners cannot simply map their L1 features onto the target language (Dulay and Burt, 1974; Dulay, Burt and Krashen, 1982; Su, 2001; Langman and Bayley, 2002). It has also been emphasized that language learners are not parrots, simply repeating words they hear; instead, they mentally construct their linguistic systems according to the new target language system (Selinker, 1972 and 1992; Pienemann, 1995).

Selinker (1972 and 1992) has conceived of this linguistic system as IL which is a dynamic system of incremental complexity. In the construction of an IL grammar, L2 learners need to construct a target grammar that goes beyond the finite input data (Richards and Sampson, 1974; Corder, 1981; Yip, 1995).

During the process of language construction, IL is in a state of flux and has few stable features (Littlewood, 1992; Yip, 1995). In fact, IL is a product in the process of moving from L1 to L2. It seems that L2 learners go through a series of transitional stages towards learning the target language, from the initial-state grammars that the learners construct. So, IL is in a state of change, which indicates the unstable property of this linguistic system—it can either develop gradually, or fall back to an earlier state (Towell and Hawkins, 1994).

Normally, it is expected that a learner's IL will move closer and closer to the target language and contain fewer and fewer errors. Some scholars have claimed that, ideally, IL growth develops as a gradual and sequential progression; that is to say, IL growth occurs on a continuum in which some new rules (applied and developed by learners) slowly spread and acquire greater coverage within the grammar (Corder, 1981; Smith, 1994). However, based upon observations of L2 learners, some errors probably

never disappear entirely. Such errors are pinpointed as *fossilized*, and become permanent features of learners' IL speeches (Littlewood, 1992).

Fossilization is actually a unique characteristic of IL. Once the permeability of IL is lost, structural features are maintained in the developmental process which then become subject to fossilization (Pienemann, 1998b). Long (2003) defines fossilization as the continuity which results in the learners' IL competence being non-target-like. Some language learners may stabilize at a certain stage of language acquisition, and their IL development may cease, in which case even conscious efforts are often fruitless. Minor changes may sometimes be observed, but the learners will backslide to a stable state in the end (Bley-Vroman, 1990; Smith, 1994; Eubank, Selinker and Smith, 1995).

On the basis of these features of fossilization, it can be seen that there are certain constraints which hold back the development of a learner's L2. Ideally, these constraints, inherent in a certain developmental hierarchy, will be gradually moderated and removed during the language learning and development process (Pienemann, 1998c); fossilization actually indicates that there is no guaranteed release of processing constraints in the developmental process and that IL may be stopped or held back. From the processing perspective, learners' IL is expected to develop with no fossilization.

It may be asked whether there is any possibility that learners with various L1s might follow a similar series of transitional stages, and whether their IL developmental routes might be similar.

Clahsen and Muysken (1986) observed that a group of adult L2 learners of German (with different L1s) acquired German word order patterns in the same series of stages. They therefore claimed that learners from different L1 backgrounds processed L2 knowledge independently of their L1s. Another study by Håkansson, Pienemann, and Sayehli (2002) has shown that Swedish learners of German cannot acquire verb-second pattern at the initial stage, though this pattern does exist in both German and Swedish languages. From this case, it can be seen that typological similarity (or difference) does not necessarily shorten (or extend) learning barriers. Other empirical evidence has also indicated that typological proximity does not guarantee L2 learners' ready access to L1 knowledge, and that processing constraints may override typological distance (Di Biase, 2002; Håkansson, Pienemann, and Sayehli, 2002).

Pienemann (1998c) has proposed that L2 learners with different L1s inherently deal with learning problems in a strikingly similar sequence,