

UDK 81

DOI: 10.18413/2313-8912-2017-3-1-71-75

Vitalii Prystupa

AN INVESTIGATION OF CHINESE STUDENTS' GRAMMAR DEVELOPMENTAL SEQUENCE: A CORPUS STUDY OF ACADEMIC WRITING

PhD in Linguistics, Head of Anglo-Australian Program, Beijing Normal University,
No. 19, XinJieKouWai St., HaiDian District, Beijing 100875, P. R. China, vitprist@icloud.com

Abstract. The study investigates Chinese students' grammar developmental sequence and implications of the so-called "morpheme" studies. A brief overview of L1 and L2 research in this regard is provided. The paper explores the impact of three major dominants of acquisition order: semantic complexity, input frequency, and native language transfer.

A special corpus of Chinese students' academic writing was created to present both qualitative and quantitative data for the research. The number of texts analyzed for this research is 510, comprising 701 440 words. The research is longitudinal; the data presented in this paper were obtained in the period of February 2015 – February 2017. The research will be carried out, thus the results which we want to discuss are preliminary.

The research findings provide support for pedagogical recommendations to present the patterns in receptive grammar acquisition (input) which can result in more error-free and diversified grammatical output.

Key words: second language acquisition; corpus linguistics; grammar acquisition; natural order studies; English for academic purposes.

Introduction

Natural order studies can be traced back as early as the 1970s when the researchers paid their attention to "independent grammar assumption" inspired by an innatist view of language acquisition (Cook, 1993). This approach was prevalent in the 1970s and 1980s (due to the influence of Chomsky's Universal Grammar) and gradually lost its popularity in the 1990s.

The basic hypothesis for natural order studies was the acquisition of L1/L2 learners of grammatical morphemes and is commonly referred as morpheme studies (Ellis, 2013, p. 82). The researchers tried to establish either there was an invariant order of morpheme acquisition for L2 learners as it was stipulated for L1 learners.

The idea of morpheme acquisition research in the 1970s was supported with considerable empirical evidence that proved the notion of a consistent order (it served as a basis for Natural Order Hypothesis). The results of numerous researches supported the hypothesis of similarity of L2 acquisition with L1 acquisition (Dulay & Burnt, 1973; Krashen, Butler, Birnbaum & Robertson, 1978). Certain researchers found that the morpheme sequences for second language acquisition coincide with those of first language acquisition, thus the learners L1 does not pay a crucial role in acquiring the second language (Larsen- Freeman, 1975; Fathman, 1975). Other research results showed that the morpheme

acquisition sequence in L2 remains consistent for learners of different ages (Bailey, et al., 1974; Kessler & Idar, 1979).

In the 1980s and 1990s, the focus was shifted from empirical evidence to the identifications of different determinants of the acquisition sequence. The purpose was to reexamine the Natural Order Hypothesis, though fewer empirical researches were conducted. Still, the list of determiners with respect of L1 and L2 acquisition was suggested. For L1 acquisition the following determiners are usually cited: 1) perceptual salience (e.g. morpheme –ing, as in *playing*, can be stressed in some cases, thus, it is regarded to be salient, but the morpheme –ed, as in *played*, cannot be stressed), syllabicity (if the morpheme is syllabic or not), and lack of exception (the possessive 's is used without any exceptions, whereas the past tense –ed has exceptions for irregular verbs). These three determinants are considered to be stable and not variable, still, some researchers considered the possibility of two more determinants: semantic and/or syntactic complexity (Brown, 1973).

The list of determinants for L2 is still to be established, so far the following list has been suggested (which is wider than the list above and includes all the mentioned before determinants, thus we will enumerate those which are peculiar for L2 acquisition): morpho-phonological regularity;

syntactic complexity; frequency; semantic complexity; native language transfer; levels of morpheme activation (Andersen, 1978; Larsen-Freeman & Long, 1991; Wei, 1999,2000 a, 2000b, 2003).

The empirical evidence prove that despite some differences the order of morpheme acquisition for L2 learners will be consistent. Still, the Chinese learners of English acquire English morphemes differently compared to other L2 learners:

Table 1

Order of Acquisition of English Morphemes in L2 Studies (adapted from Jeong, 2002)

Dulay & Burt (1974)	Bailey, Madden & Krashen (1974)	Larsen-Freeman (1975)	Hakuta (1976)	Rosansky (1976)
Children-Spanish And Chinese	Adults – classified as Spanish and Non-Spanish speakers	Adults – Arabic, Japanese, Persian and Spanish	Child Japanese	Children, Adolescents, Adults (Spanish)
N= 60 Spanish = 55 Chinese	N=73	N=24	N=1	N=6
1 Article	1 Present Progressive	1 Present Progressive	1 Present Progressive	1 Present Progressive
2 Copula	2 Plural	2 Copula	2 Copula	2
3 Progressive	3 Contracted copula	3 Article	3 Auxiliary	3
4 Simple plural	4 article	4 Auxiliary	4 in	4 Article
5 Auxiliary	5 Past irregular	5 Short plural	5 to	5 Copula
6 Past Regular	6 Possessive	6 Past Regular	6 Past Auxiliary	6 Auxiliary
7 Past Irregular	7 Contracted auxiliary	7 Singular	7 on	7 Possessive
8 Long Plural	8 3 rd person present	8 Past Irregular	8 Possessive	8 Past Irregular
9 Possessive	9 Possessive	9 Long. Plural	9 Past Irregular	9 Long Plural
10 3 rd person singular	10 3 rd person singular	10 Long Plural	10 Past Irregular	10 Long Plural

The list which we showed here is an abridged one and does not include the sequence of English morpheme acquisition in L1 studies, though we need to mention the morphemes stated in both lists are almost the same. Having analyzed the sequence of

morpheme acquisitions by different nationalities, we come to the conclusion that Chinese learners of English constitute a special group: the first morpheme they acquire is the article, whereas the Present Progressive comes only third.

The aim of our study is twofold: Firstly, to understand better the production of English morphemes (output) in academic writing (morphemes which are error-free and have not been learned as chunks before), it will help to organize the input in accordance with Natural Order Hypothesis. Secondly, this study investigates how the morpheme production varies among low and high performing students. Through answering these questions, we hope to gain insight into coping strategies for decreasing the number of mistakes L2 academic writing.

Literature Review

As far as the status quo of the EFL education in China is concerned, writing in English has always been foregrounded as one of the most difficult areas for both Chinese EFL teachers and learners (Chen, 2016, p.3). Academic writing is of particular difficulty for Chinese EFL learners, as it has been estimated by Shu (2004) less than 50% of the undergraduates can reach the basic pragmatic level of English to fluently conduct daily (oral) communication and read academic English articles/books associated with specialized areas, as for the postgraduate students, they are more competent in speaking and reading than undergraduate students, though they feel awkward writing English research articles for academic purposes.

There is a paradox in reality as all the Chinese students have to study English for at least 6 years at middle and high schools, many of them begin studying English being as young as 3-4 years old, it means that many students have at least 12 years of the previous history of learning English. As Shu (2004) states that students can hardly adapt to academic discourse at tertiary level because both examination- oriented Chinese school EFL education (commonly known as 高考) and general-purpose University English cannot meet the demands for high academic literacy of specialists.

Research has shown that recently more investigations appear dedicated either to the problem of vocabulary acquisition by Chinese EFL learners, or contrastive typology of languages (Prystupa, 2016), though only a few fundamental and empirical types of research focused on teaching EAP (writing) in China (Chen,2016) or developmental aspects of language production of Chinese EFL learners in writing (Chun, 2015) are available in English.

Methodology

The research employed both in-class academic essay writing and analysis of students' writing corpus which consists of 510 essays (for this particular research but still more essays will be uploaded as the research is longitudinal), comprising 701440 words.

This is a quasi-experimental study that investigated the production of English morphemes in Chinese ESL students' academic writing. In addition, this study investigated how the use of English morphemes vary among high and low performing students.

Participants

There were 102 participants spread across 4 classrooms. All students were taught by two teachers: one Chinese teacher (general writing practice + grammar) and one foreign teacher (academic writing, EAP). Both teachers were non-native speakers of English, but both were awarded academic degrees from English-speaking countries, their teaching experience exceeded 10 years. All classes followed an identical EAP program (approved by Navitas). The participants were mixed: both undergraduates and postgraduates participated in the project, the age range is 18-23 y.o. All participants had no prior experience of studying in an English-speaking country. The number of years of studying English varies: from 8 to 13 years, a mix of men and women. The L2 proficiency of the students ranged from IELTS 5.5-7.0 (5.5 being the minimum requirement to enter the program in question), with no class significantly higher or lower in L2 proficiency than any of the others, thus the students were spread into two main classes: English A (IELTS 6.5-7.0) and English B (IELTS 5.5 – 6.0). All the participants agreed to have their original data – submitted as a part of EAP program – copied and analyzed for research purposes, they were told that (non)-participation in the corpus project would not affect their assessment.

Special attention was paid to the selection of students and their prior ESL learning experience, the duration of prior language learning seems to be important for the development of cognitive-academic language proficiency (5-7 years) (Cummings, 2000).

Instruments

To create the Chinese EFL students' academic writing corpus, we used Lauren Anthony's software, which is in open access and can be downloaded from <http://www.laurenceanthony.net/software.html>. To calculate the data PSPP software was used.

Writing tasks

The participants were expected to write 5 academic essays of different types (comparative,

explanation, argument, cause and effect, comparison and contrast essays), word limit for each essay was 1500 words. As the participants of the program were the students of different majors, the topic areas suggested for essay writing were neutral: Population, Water, Climate Change, Globalization, The Information Age, Media, Social Interaction. The participants were free to choose any aspect to analyze within the given topic. Special attention was paid to the anti-plagiarism measures, all essays were submitted via anti-plagiarism software.

Discussion

As Biber states: "Grammatical features contribute to the general perception that academic writing is more complex, structurally elaborated, and explicit in meaning than most other spoken and written registers" (Biber, 2016, p.14). The results of our research show that Chinese ESL learners in their academic writing show grammatical diversity in the cliché phrases that they memorized as chunks and use them actively as coherent and cohesive elements, such phrases as: *there is a growing body of literature that recognizes the importance of ...; several attempts have been made to ...; one observer has already drawn attention to the paradox in ...; what follows is an account of ...; turning now to the experimental evidence on ...* and many others, still we do not take them into consideration as they had been given to students before the essay writing during pre-writing sessions and students were expected to memorize them, thus these chunks cannot be analyzed as "real" output.

Our core interest was to investigate the use of English morphemes in academic writing and to see if there is a correlation between high and low performing students. We have chosen the following grammar phenomena for investigation: English verb tense and aspect system, voice, modal verbs (hedges to express vagueness), non-finite forms of the verb.

Table 2

The use of English tense system in academic writing by Chinese ESL students

Tense (active voice)	Low- Performing Students (65 students)	High- Performing Students (37 students)
Present Simple	91%	98%
Past Simple	83%	94%
Present Perfect	61%	79%
Present Progressive	78%	82%
Past Perfect	12%	37%
Future	67%	86%

Table 2 illustrates the number of error-free sentences. The results show that grammar tense that causes fewer problems is the Presents Simple Tense,

it can be explained by high input frequency and low semantic complexity. The tense which caused the biggest confusion is the Past Perfect Tense, this can be explained by low input frequency (usually the explanation of this verb tense is disregarded in Chinese high schools and universities), high semantic complexity for Chinese students (this can be explained by the difference between Chinese and English grammar systems; the Chinese language uses present tense to express the past tense through time adjuncts, the perfective aspect, which signifies the occurrence or completion of action, is expressed through the perfective particle 了. As Chinese tense system is relatively easy compared to the English one, we can say that perfect aspect seems to be the most problematic for Chinese students, who tend to correlate 了 with the Past Simple Tense but not with the Past Perfect Tense. Native language transfer is significant in this example. The same explanation can be applied to the future tense.

Table 3

The use of the Passive Voice in academic writing by Chinese ESL students

	Low- Performing Students (65 students)	High -Performing Students (37 students)
Passive Voice	53%	64%

Table 3. presents the total number of error-free sentences with the passive voice. We do not diversify the table according to tense and aspect as our prior concern was in the investigation of the general principles of the passive voice use. In Chinese, the passive voice, which is usually associated with structural elaboration and academic writing, appears to be used less than in English. The analysis of students' academic essays shows that there is a strong tendency in using the active voice, while the use of the passive voice is not systematic and grammatically erroneous. This phenomenon can be explained by insufficient input and direct language transfer (the influence of L1 on L2).

Table 4

The use of English modal verbs in academic writing by Chinese ESL students

Tense (active voice)	Low- Performing Students (65 students)	High -Performing Students (37 students)
Can	79%	94%
May	65%	94%
Must	61%	69%
could	78%	82%

Modal verbs with the meaning of vagueness in academic writing (hedge) seem to be a problematic area for Chinese ESL learners. They have a strong

preference for the use of the indicative mood without using hedges in academic writing. The data show that among the modal verbs that Chinese students use are *can, may, must and could*. First two are often used interchangeably but the preference is given to the modal verb "can", here our results coincide with Susan Hutson's data (Hutson, 2015, p.210). The modal verb "must" comes third in the rating of the most frequently used modals in Chinese ESL students' academic writing. The data show that other modal verbs, such as *have to, should, ought to, might*, were not used in the essays we analyzed. It can be the result of low-frequency input, the semantic difficulty of *should* and *ought to* for Chinese students who often confuse these two modal verbs.

Our results of our research are still preliminary. The generalizability of these results is subject to certain limitations. The small sample size analyzed for this research allows us to make the following assumptions:

1. There may be a taxonomy of certain English morpheme acquisitions at higher intermediate levels of L2 proficiency. Though as not all grammar morphemes in Chinese ESL students were analyzed, we can suppose that the most difficult for acquisition are the Past Perfect tense (both active and passive voice), modal verbs (hedges) and the passive voice for all grammar aspects.

2. Special attention should be paid to the development of grammar morphemes in academic writing, as this genre is characterized by its grammar elaboration and explicitness.

Conclusion

The present study was designed to Chinese ESL students' developmental sequences of English morphemes acquisition. The results show that there are certain English morphemes that are produced error-free with high frequency, though the other morphemes are often grammatically erroneous or just absent in the output. Three possible explanations for these phenomena were suggested: semantic complexity, input frequency, and native language transfer. Still, it is not clear which factor of these three prevails for each grammar morpheme. This study just outlines the future investigation of the problem and is the pilot project that provides the preliminary data.

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Vitalii Prystupa

PhD in Linguistics, Head of Anglo-Australian Program, Beijing Normal University