THE ACQUISITION OF TENSE-ASPECT MORPHOLOGY: A CROSS-SECTIONAL

STUDY OF THE CHINESE NATIVE ESOL LEARNERS' INTERLANGUAGE

by

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(Under the Direction of Don R. McCreary)

ABSTRACT

The present study attempts to explore the acquisition of the English tense and aspect systems by ESOL Chinese native speakers. By duplicating the research method used in Bardovi-Harlig's (1992) study and a grammaticality acceptability judgment test in Section 3.10 of Gass, Sorace and Selinker's book *Second Language Learning Data Analysis* (1999), a cross-sectional study was conducted on 94 Chinese ESOL learners across three proficiency groups. Results show that these learners displayed a pattern of form preceding meaning appropriateness in acquiring the tense and aspect system of English. Learners relied on other systematic but non-target-like alternatives to facilitate their L2 acquisition. This expands on the prior results: correct and incorrect responses explained by the relationship of form and meaning of English. Language universals, verbal aspects, first language transfer, and lexical cues, etc: the combination of several factors worked together on these learners' acquisition of the tense and aspect system in English.

INDEX WORDS: Tense and aspect, Grammatical aspect, Lexical aspect, the Aspect hypothesis, the Defective tense hypothesis, Chinese ESL/EFL learners, tense and aspect marking in Chinese, Second language acquisition.

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DEDICATION

This work is dedicated to the loved ones in my life: my parents and my dearest David.

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SECTION 1

INTRODUCTION

The expression of temporality is one of the central conceptual domains in language. When we talk about situations, we distinguish them in the past, present, and future. Events also differ in their internal structures as ongoing or completed. Different languages rely on different resources for temporal references, but they all have the means to express these basic concepts about time. As a matter of fact, acquisition of tense and aspect systems has been the focus of many descriptive and pedagogical accounts of language and has always occupied an important place in the curricula of many language programs (Bardovi-Harlig 2000). In order to correctly express temporal references in English, a learner must at least have a good command of: 1) the English tense and aspect systems; 2) the interaction of grammatical aspect and inherent lexical aspect; 3) the establishment of temporal relations of events on the discourse level (Bardovi-Harlig 1992).

In the past two decades, beginning with seminal studies by American and European researchers, the acquisition of tense and aspect systems has received more and more attention in both first and second language acquisition research. Along the lines of concept-oriented research of the acquisition of language tense and aspect systems, a general pattern of acquisition sequence has been proposed. Many researchers in this area agree that second language learners generally go through three stages in acquiring tense and aspect systems: from heavily relying on pragmatic devices (e.g., contextual clues, chronological orders) to using more and more lexical devices and finally applying more grammatical morphology (Yang and Huang, 2004). Along another line of research, which is form oriented focusing especially on the distribution of verbal morphology, it has been observed that in both first and second language acquisition, "the emerging verb

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inflections appear to function in ways distinct from the target [language]" (Robinson 1995).

Two language universal tendencies, namely the Aspect Hypothesis (Anderson 1991; Weist et al.

1984, Robinson 1990, Bardovi-Harlig 1994, 1995, 1998) and the Discourse Hypothesis (Godfrey

1980; Wolfson 1982; Kumpf 1984; Flashner 1989) have been proposed to account for the

investigation and explanation of this phenomenon.

Aiming at investigating the acquisition of the tense and aspect system in English by

Chinese ESOL learners, the present study duplicated the research method used in Bardovi-

Harlig's (1992) study with the supplement of a grammaticality acceptability judgment test

adopted from Section 3.10 in Gass, Sorace and Selinker's book *Second Language Learning Data

Analysis* (1999). Data was collected from a questionnaire survey of 94 Chinese native speaking

students who study English as a foreign and/or second language across three proficiency levels.

This questionnaire contains three tasks: a grammaticality acceptability judgment task, a cloze

passage and an optional composition writing task. Data obtained were examined and analyzed

with a focus on the relationship between form and meaning in the development of time reference

in English of these learners' interlanguage. The following theories and hypotheses in language

acquisition were addressed to explain the features found in these learners' interlanguage: 1) the

influence of typological language universals; 2) the effect of lexical aspect on the development

of verbal morphology, 3) the transfer of the tenseless L1 (Chinese) onto the acquisition of

English L2 which grammaticalizes both tense and aspect.

SECTION 2

BACKGROUND

TERMS AND DEFINITONS

Temporality: Tense and Aspect

Tense and aspect are two of a set of categories, which are often collectively referred to as the tense- modality-aspect (TMA) system, involving linguistic markings on verbs. The discussion of any one of them must take consideration of both their independent functions and the interrelationship between them for the following two reasons. First, the linguistic forms expressing these notions have a tendency to morph into other categories within this set. Second, a single linguistic form can often have more than one function. This is particularly true in the research on the acquisition of tense and aspect systems, since both of them express temporal concepts.

Linguistic modality characterizes the attitude of the speaker concerning the position expressed in an utterance, such as the notions of obligation, necessity, ability, possibility, and reality (Li and Shirai 2000). Tense describes the relation of an event time to a reference time, often the speech time. It functions as the "temporal deixis" indicating time of situations: either in future, present or past. In other words, tense locates the time of an event being talked about from the time at which the speaker utters the sentence. The past tense is used when event time is prior to speech time; the future time is used when speech time is event time; and the present is used when the two overlap with each other. Other choices of tenses are available to express more complicated concepts, for instance, the pluperfect and the future perfect (Comrie 1985). Aspect refers to the "temporal contour," that is the temporal characteristics of a situation described independently of its relation to any reference time. Distinct from tense which signals

the relationship of situation at different time points, aspect discusses a single situation as being ongoing or completed.

Grammatical aspect vs. Lexical aspect

In the previous research of the acquisition of tense and aspect systems, the concept of aspect is often distinguished further into two conceptual types: grammatical aspect and lexical aspect. Grammatical aspect, also named "viewpoint aspect" (Smith 1983), is expressed explicitly through grammatical markers, linguistic devices such as the auxiliaries and verb inflections. Examples of grammatical aspect include the progressive aspect in English and the perfective and imperfective distinction common in Spanish, Greek and many Slavic languages. Lexical aspect is also labeled as inherent aspect, situational aspect, Aktionsart, and semantic aspect. It refers to the characteristics that are inherent in a particular lexical item which describe the situation as it is expressed by an unmarked predicate, independent of any grammatical marking or time frame. In other words, as it is pointed out by Robinson (1995:346), "lexical aspect resides in the 'sense' of a predicate, not in its 'reference' or in an isolated verb." (For further information please refer to Brinton 1988:23) For instances, "run" and "run a mile" may both refer to the same situation. The first verb phrase "run", in contrast to its counterpart "run a mile" has an atelic sense, but no clearly defined ending point; and the second phrase "run a mile" has a well defined ending point, in other words: a telic sense, as indicated by the length of the running, a mile.

The classification of lexical aspects

Different schemes have been proposed to account for the semantic distinctions encompassed by the notions of lexical aspect. Comrie (1976) pointed out three binary distinct features of 'lexical aspect': stative vs. dynamic; atelic vs. telic; and durative vs. punctual. A

four-way classification for lexical aspectual classes, whose roots can be dated back to Aristotle, has also been proposed by Vendler (1967). The four semantic categories proposed by Vendler are: achievement, accomplishment, activity and state. And later, this classification schema was developed further by Dowty (1979) and Mourelatos (1981). Anderson (1989, 1991) first mapped Comrie's three binary distinctions plan onto Vendler's four way classification, and adopted this framework in second language acquisition research.

Figure1: Mapping of verb semantic distinctions on Vendler's classification (Robinson 1995:347)

State	Activity	Accomplishment	Achievement
⬅=======stative	dynamic=======	==============	=========➡
⬅===========	=========atelic	telic=========	=========➡
⬅===========	==============	=======durative	Punctual====➡

As pointed out by Robinson (1995), viewed in this way and as in much of the literature on aspect hypothesis (for details please refer to: Review of Literature), the three aspectual contrasts appear to have an implicational relationship: stative entails durative, punctual entails telic and telic entails dynamics, which implies a linear classification of lexical aspect. The stative vs. dynamic contrast can be understood in terms of energy. Stative predicates describe involuntary situations that need no energy to continue; dynamic predicates denote situations that require a constant infusion of energy. Stative predicates express existence; dynamic predicates occurrence. The telic vs. atelic contrast is determined by whether there is a well-defined endpoint inherent in the nature of the situation; an atelic predicate only indicates an arbitrary terminus. Telic predicates imply a sense of incompleteness if the goal is not reached, whereas, atelic predicates have no such implications. Durative predicates refer to situations lasting for

some time; punctual predicates denote events as transpiring in an instant or at the exact juncture between two situations.

The following list generalizes Vendler's four categories of verb lexical aspectual concepts: (Li and Shirai 2000: 14-18)

• State: referring to situations as homogeneous, with no successive phased or endpoints, involving no dynamicity. E.g., know and love.

• Activity: referring to situations consisting of successive phases over time with NO inherent endpoint. E.g., walk, run and swim.

• Accomplishment: denoting situations having successive phase, but encoding a natural end point and often a change of state. E.g., paint a picture, build a house and run a mile.

• Achievement: encoding a natural endpoint, events having no duration (punctual and instantaneous). E.g., fall, win the race, and reach the summit.

The English Tense and Aspect System

English verbal inflection system marks tense, "the location of an event in time (Comrie 1985); and aspect, "ways of viewing the temporal constituency of a situation (Comrie 1976)"; sometimes together with the concept of modality which expresses the relationship of a verb with reality and intent. In English, time references of present and past are morphologically marked by verbal inflections: *-ed, -s, -Ø* for the regular forms or irregular verb forms like *was, were, had, went*. Because the reference of future time in English is expressed by using the modal auxiliary *will* or the semi-auxiliary *be going to* without the use of verbal inflections, strictly speaking, English only has two tenses: present and past; future time is not referred as a morphologically marked "future tense." Aspect is marked together with tense inflections in English by three aspectual morphemes: the zero aspect morpheme *-Ø* , the progressive auxiliary *–ing* and the

perfective auxiliary *have/has –ed* for the regular verbs or *have/has* + irregular forms like *been, gone, taken*.

In the following examples, sentence pair (1) shows a contrast in tense, and sentence pair (2) indicates a contrast in grammatical aspect.

(1).   Mary dances. (a)   Mary danced. (b)

(2).   Mary danced. (a)   Mary was dancing. (b)

In pair (1), the verbal predicate in sentence (a) is in the present tense and the predicate of the (b) sentence in the past tense. In pair (2), both sentence (a) and (b) are in the past tense, with the (a) sentence marking the simple past and the (b) sentence indicating the past progressive.

<u>Tense and Aspect Systems in Chinese</u>

As a tenseless language, Chinese does not grammatically realize temporal locations of events in time. In stead, Chinese relies heavily on the use of lexical expressions, namely time adverbials to express tense, as showed in the following examples:

1) Present: 现在   他   去上海。

Xian(4)zai(4) ta(1)   qu(4)shang(4)hai(3).

Right now   he   go to Shanghai

He is going to Shanghai.

2) Past: 去年   他   经常   去上海。

Qu(4)nian(2)   ta(1)   jing(1)chang(2) qu(4) shang(4)hai(3).

Last year   he   often   go to Shanghai.

He often went to Shanghai last year.

3) Future: 明天   他   去上海。

Ming(2)tian(1) ta(1)   qu(4)shang(4)hai(3).

Tomorrow he go to Shanghai

He will go/is going to Shanghai tomorrow.

Tenses are also expressed in Chinese by using pragmatic devices such context clues, chronological order in narration, etc.; and aspectual particles.

Aspect is grammatically marked in Chinese by aspectual particles. They are: 了 *le,* 过 *guo* for perfective marking; and 在 *zai*，着 *zhe* for imperfective (progressive) marking. These particles provide different ways of indicating the temporal contour of a situation without locating the event in time as showed in the following sentences:

1) Perfective: 她 去 了 上海。

Ta(1) qu(4) le shang(4)hai(3).

She go [particle] Shanghai

She went to Shanghai.

她 去 过 上海

Ta(1) qu(4) guo shang(4)hai(3)

She go [particle] Shanghai

She had been to Shanghai.

2)Imperfective: 她 在 叫你的名字。

Ta(1) zai(4) jiao(4)ni(3)de ming(2)zi(4)

She [particle] call your name

She is calling your name.

她 叫 着 你的名字

Ta(1) jiao(4) zhe ni(3)de ming(2)zi(4)

She call [particle] your name

She is calling your name.

The perfective particles 了 *le* reports an event as a whole or as completed and the other perfective marker 过 *guo* "suggests experience, or something having occurred 'at least once before'" (Matthew and Yip 1994: 206). Both particles 了 *le* and 过 *guo* provide a view of entirety (terminative/complete) of events in time. Both imperfective particles 在 *zai*，着 *zhe* give a partial view of events (Smith 1991) with 在 *zai*, indicating ongoingness of activities and 着 *zhe* describing "a continuous activity or state without change" (Matthew and Yip 1994: 202).

It is of special interest that the linguistic devices applied in Chinese for temporal reference match the general tendencies of the three-state sequence, namely from relying on pragmatic devices to lexical devices and grammatical morphology, in the acquisition of second language time references.

SECTION 3

REVIEW OF LITERATURE

Many areas of second language acquisition research are inspired by related research in first language acquisition. Likewise, the study of the acquisition of tense and aspect systems in a second language is also rooted in previous studies in child language acquisition. In first language acquisition researches, Bronckart and Sinclair (1973) first found that French children under six years of age tend to use verb forms expressing tense concepts in adult language to express aspectual notions. Based on their data from a series of experimental production tasks on 74 French speaking children, children tended to use the 'perfective' past form, (passé composé) for the majority of accomplishment and achievement verbs and the present tense (présent) for verb predicates with inherent durations. Similar results were also obtained from Antinucci and Miller's (1976) longitudinal studies on one English speaking child and seven Italian speaking children.

To account for this non-normative use of tense morphology, researchers first attributed it to a cognitive deficit. Bronckart and Sinclair (1973), Antinucci and Miller (1976), and also Smith (1980), all proposed a cognitive developmental explanation suggesting that young children have not developed the cognitive construct of past tense and thus were unable to use the verbal morphology to denote temporal deixis. In related work on first language acquisition, Bickerton (1981) proposed his language bioprogram hypothesis based on his pidgin and creole studies and the reinterpretation of the above tense and aspect studies. He claimed that human-beings are innately equipped with the ability to make certain semantic distinctions such as punctual vs. non-punctual (punctual/durative), state vs. process (stative/dynamic), and specific vs. non-specific. He used findings from the above two studies as evidence for the punctual and non-punctual

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distinctions that children make.

Weist et al. (1984) disputed this cognitive deficit account, which they labeled the defective tense hypothesis using experimental and naturalistic data on the acquisition of first language Polish. They found evidence for the early deictic use of past tense inflections, independent of aspect. However, later reanalysis by Bloom and Harner (1989) and Andersen (1989) of their data found that Weist et al.'s conclusions were based on isolated utterances and were thus not always tenable. However, the overall counts still revealed that past inflection was more likely to occur with telic than atelic verbs. These results have been reinforced by first language acquisition studies of English (Bloom et al. 1980; Shirai 1991), Turkish (Aksu 1978), Portuguese (Simoes and Stoel-Gammon 1979), Greek (Stephany 1981), Hebrew (Berman 1985), and Spanish (Jacobsen 1986).

Regarding the characteristics of the learners tested, results from second language acquisition research also found parallel correlations indicating lexical aspectual constraints on the distribution of inflections in the interlanguage of learners from a variety of first language backgrounds. Early research of the tense and aspect systems in second language acquisition have been dominated by studies of untutored adult learners (e.g., Kumpf 1982; Flasher 1989; Robinson 1995). However, there were more and more emerging investigations of the acquisition of the tense and aspect systems in second language showing the influence of lexical aspectual class on an expanded target population: instructed learners (Bardovi-Harlig and Reynolds 1995), foreign language learners (Bardovi-Harlig and Bergstrom 1996; Bergstrom 1995; Hasbun 1995; Ramsey 1990). Some of the recent studies were characterized by the introduction of the controlled elicitation tasks which offered easy comparison across large learner populations (Bardovi-Harlig and Reynolds 1995; Bergstrom 1995). Another feature of

these recent studies was the emphasis on a more refined classification of the lexical aspects determined by traditional linguistic tests (Andersen and Shirai 1994, 1996; Shirai and Andersen 1995; Robinson 1995; Shirai 1991; Li and Shirai 2000).

Both of the results of earlier individual longitudinal studies using naturalistic data on uninstructed language acquirers and the more recent studies with increased variation in learner backgrounds and elicitation tasks showed the influence of lexical aspect in the acquisition of second language tense and aspect systems. (For a detailed review of the past studies on the aspect hypothesis please refer to Bardovi-Harlig 2000: 206-210).

What is commonly known as the aspect hypothesis has been formulated under different names, including the defective tense hypothesis (Andersen 1991), the primacy of aspect hypothesis (Robinson 1990) and the relative defective hypothesis (Andersen 1989). The defective tense hypothesis, specifically its strong version, deems that "in the beginning stages of language acquisition only inherent aspectual distinctions are encoded by verbal morphology, not tense or grammatical aspect" (Andersen 1991: 307). In the primacy of aspect hypothesis, " aspect is primary in the sense not that morphemes that denote aspect in the target language are acquired first, but that target language verbal morphemes, independent of their function in the target language are first used by the learner to mark aspect" (Robinson 1990: 316). From the evidence of a single learner of English, Robinson also found that the previous strong version of an absolute defective tense hypothesis did not always hold; he further concluded in this study that " verbal morphology correlates with lexical aspect at least during some stage in the development of interlanguage" (1990:330). Andersen and Shirai (1994:133) reformulated the relative defective hypothesis: "first and second language learners will initially be influenced by the inherent semantic aspect of verbs or predicates in the acquisition of tense and aspect markers

associated with or affixed to these verbs."

Except for the above form-oriented studies, scholars along another line of research have also been attempting to account how the concept of time is expressed by second language learners. When verbal morphology is not available in learners' interlanguage, pragmatic and lexical devices are used to express temporality (von Stutterheim and Klein 1987, Bardovi-Harlig 1999). Schumann (1987) found "a stage prior to either aspect or tense where learners rely solely on the pragmatic functions of adverbs" in his study of the interlanguage of five uninstructed basilang speakers. In this stage, concepts of time references were expressed by using "calendric expressions, sequentiality, and context (implicit reference) (Schumann 1987: 38). The use of other linguistic devices: chronically ordering, lexical expressions, especially time adverbials, are also widely observed in beginning learners' interlanguage systems (Trévise 1987, Véronique 1987, Dietrich et al. 1995; Bardovi-Harlig 1992).

Studies in this area of research show that the characteristic use of pragmatic, lexical and morphological devices is indicative of three distinctive acquisition stages in the development of temporal expression. In the earliest stage, learners tend to rely on pragmatic devices, specifically the principle of chronological order for temporal references (von Stutterheim and Klein 1987). The second stage is characterized by reliance on lexical expressions: time adverbial expressions and connectives (Meisel 1986). Only later in the third stage, "the semantic burden of expressing temporality is shifted to verbal morphology" (Yang and Huang 2004:51).

REVIEW OF TWO TARGET STUDIES

Two studies are reviewed below because their procedures have been replicated in this study..

Gass and Ard's study(1984) on the influence of typological language universals

In their study, the acquisition of the semantics of English tense and aspect systems was investigated in relation to the language universals which were first proposed by Kurylowicz (1964) and later extended by Ard (1979, 1981). To be specific, Gass and Ard targeted the following particular universal of tense and aspect systems in their study; that is, "there is a basic sense of tense and aspect elements in all languages, and when different languages are compared, there is a germ of similarity in that elements can be grouped so that the same basic situation is highlighted as prototypical for all these languages" (1984:52). In other words, fundamental similarities exist in the core meanings of different languages despite the different ranges of tense and aspect elements across languages.

A set of acceptability judgment tasks plus a guided sentence writing task were used to target three forms of the English tense and aspect system: the progressive, which was referred to as the expanded form in Gass and Ard's paper (1984), the simple form and the future form. For statistic reasons, only the subset data of first language Japanese and Spanish learners' from 139 subjects, all of which are ESOL learners with a wide variety of first language backgrounds, were used in their study. As expected, subjects responded more positively to sentences which refer to situations closer to the universal focus than sentences which did not, whether the data had expanded forms, simple forms, or future forms. Comparing the two different first language groups, generally speaking, Japanese first language learners followed these universal principles more closely than did the Spanish first language learners. The present research will replicate and compare the results from Chinese subjects with the Spanish and Japanese subjects.

Bardovi-Harlig's study (1992) on the relationship of form and meaning in the interlanguage of learners of English as a second language

Aiming at exploring the relationship between form (formal accuracy) and meaning

(appropriate use), in this cross-sectional study, 135 adult ESOL learners at six levels of proficiency from beginning to advanced in an intensive English program was tested using a cloze passage and a follow-up composition task on the same topic as the cloze passage. A control group of 23 native English speakers was also tested for comparison.

The final results of a comparison of the learner production (learner interlanguage) and with the target production (of the control group) indicated that in the development of ESL interlanguage, formal accuracy precedes appropriate use. A further examination of form and meaning associations made by learners showed systematic, although non-target-like, associations in learner interlanguage. This latter examination was based on the analysis of the contexts in which specific interlanguage forms occurred. In this analysis, meaning was operationalized in semantic features such as durativity and punctuality. Form and meaning were associated through alternative interim hypotheses related to lexical aspect and discourse functions, when the development of appropriate use did not match that of formal accuracy.

The present study will replicate this research.

SECTION 4

METHOD

SUBJECT GROUPS AND LANGUAGE BACKGROUND

A cross-sectional study was conducted testing 96 teenage and adult learners from three different proficiency groups: two EFL (English as a foreign language) groups in China, and one ESL (English as a second language) group in the U.S. The first EFL group (the EFL Group1) consisted of a class of 37 second year senior high school students from a middle school English class in Beijing, China. The second EFL group (the EFL Group2) was made up of 30 college students all of which were fifth year medical school students from the same English class in Beijing. Their English levels were equivalent to those of most first year graduate students in comprehensive universities in China. The third group (the ESL Group) consisted of 29 Chinese graduate students in the University of Georgia selected from different majors. All subjects speak Mandarin Chinese as their first language. Before the formal test, a pre-test was conducted on several Chinese students (3 to 4 for each learner group) with similar backgrounds as the target learner groups to determine the proper time for the actual test. Results from the pre-test were not included in the data analysis.

For the two EFL groups, the test was conducted in a controlled environment respectively for each group. Both groups were given 30 minutes to finish the test which included two tasks: a grammatical judgment test and a cloze test. Their English teachers in China helped to administer the test, explained related requirements to the students, distributed the tests and collected them.

According to the General Outline for English Education drafted by the National Ministry of Education of the People's Republic of China, a foreign language is a required course for students in all secondary schools. English is often mandatory. In some big cities like Beijing,

Shanghai and Guangzhou, students start their English as a foreign language even earlier, often in the 4th year of their primary school education. The EFL Group 1 in this study was from a regular secondary middle school in Beijing. Thirty-seven students were tested in this group. Their age ranged from 15 to 18 year of age, with an average of 17, standard deviation 0.63.

A foreign language is also a compulsory requirement for college students in China. For those who choose English as their foreign language, two nationwide college English level tests: CET Band 4 and Band 6[1] are available across the nation for evaluation. In many colleges and universities in China, the certificate of CET band 4 is a basic requirement for a bachelor's diploma. The EFL Group 2 in this study is a class of 30 students in their fifth year of study from a professional medical school. Their English proficiency is equivalent to most first year graduate students in other comprehensive universities. All of them have passed the CET Band 6 test. Their average age is 25, the oldest 26, and the youngest 23 years old (standard deviation 3.14).

For the ESL Group in the states, the questionnaire was distributed and collected individually. Every subject was given a maximum of one hour to finish the test which was composed of three parts. The first two parts were the same as for the two EFL groups, and the third part was a voluntary writing composition task. Nineteen out of the twenty-nine subjects in this group responded to this optional task. Their age varied from 21 to 40 years of age, with an average of 28, standard deviation 4.25. All of them have taken the TOEFL[2] (Test of English as a Foreign Language) with an average score of 616, ranging from 560 to 657.

For ease of comparison, a control group of 13 native English speakers was also tested. All of them were undergraduate students at the University of Georgia.

DATA ELICATATION TASKS

To investigate the development of form and meaning in the tense and aspect systems of these ESOL learners' interlanguage, the present study strictly replicated procedures in Bardovi-Harlig's (1992) study of tense and aspect in the interlanguage of learners of English as a second language. As a supplement, a grammatical acceptability judgment task, adopted from Section 3.10 in Gass, Sorace and Selinker's book *Second Language Learning Data Analysis* (1999), was used to test the effect of language universals on the acquisition of tense and aspect systems. The analysis of the latter part of data was based on the theoretical framework proposed in Gass and Ard's study on language universals in the semantics of the tense and aspect systems in second language acquisition (Gass and Ard 1984).

A questionnaire made up of two tasks was designed for the two EFL groups, and for the ESL group, an additional voluntary task of composition writing was added. In the first task, the grammatical acceptability judgment test, all subjects were asked to judge the correctness of 14 randomized sentences with their tense and aspect elements underlined for emphasis. Three choices were available for each item: correct, incorrect and not sure. These 14 sentences contained 5 items of progressive tense (the expanded form in Gass and Ard's term, 1984); 4 items of future tense and 5 items of simple present tense. According to Gass and Ard (1984), it is predicted that language learners will respond more positively to sentences which refer to situations that are more indicative of the universal than to those which are not.

The second task is a cloze passage adopted from Bardovi-Harlig's 1992 study. All subjects were asked "to read the passage quickly to get the general meaning … and write the missing word or words in the blank (1992:251)." The base forms of the missing words were provided in a bracket in front of each blank. To complete this task, subjects supplied missing verb forms, with their auxiliaries if required. Fourteen out of twenty-three finite clauses in the

passage were deleted to be completed by the subjects. The cloze passage with instructions and responses of the native speaker control group are as follows:

Following is a passage from which some words have been removed. Read the passage quickly to get its general meaning and then go back to the beginning and write the missing word or words in the blank using the word before the blank.

Example: Right now we (have) are having a heat wave. The temperature (be) has been 90˚ F for three days.

Life in my country has changed quite a bit since my grandmother's time. My grand-parents, like most people at that time, (live) *lived* on a farm. My grandmother (work) *worked* on the farm and she (take) *took* care of her family without any help. I think that she (be) *was* more of a slave than a wife. By the time that she was thirty she (be) *had been* married for 15 years and she (raise) *had raised* six children! The women of my grand-parents' generation usually (stay) *stayed* at home and had little entertainment. My grandmother once (tell) *told* me that she never (go) *went/had gone* to a wedding or a party until my grandfather (die) *died.*

These rules (change) *have changed* a lot since women's liberation. My life will be very different from my grandmother's. I am going to be a doctor. I (plan) *have planned/have been planning* for that ever since I was a child. I may not even get married! That is something that my grandmother never could (think) *have thought* of when she (grow) *was growing* up.

The responses of the native speaker control group were counted to determine the target form for each item tested. The target forms included simple past tense, past progressive, past perfect, and an optional instance of present perfect progressive. Because of the limited number of the subjects in the native speaker control group (only 13), some answers which were different from the native control group's responses in Bardovi-Harlig's study were adjusted accordingly. Two out of the total 14 test items showed slight differences from the responses of the control group in Bardovi-Harlig's study. The adjustments are as following: 1) for the verb "plan", although only 2 gave "have been planning" as a possible form responds, "have been planning" was still counted as both corrected for form and meaning in the following scoring procedure; 2) for the verb

"grow" although 4 of the native speakers gave the form "grew" which was only 3 times less than the occurrence of the most common response "was growing up" which appeared 7 times, it was still not counted as a correct target form.

Like many other elicitation methods used in cross-sectional SLA studies (Comrie 1976, Dahl 1985), the purpose of the cloze test was to provide a context, in other words, a type of "extended time frame" in which the verb forms with time references could be elicited. The completion of the cloze test required at least two stages: 1) proper interpretation of the reading; 2) encoding the understood meaning in a verb form.

Because the completion of the cloze test requires both correct interpretation and production at the same time, an additional voluntary task, which was included only in the questionnaire for the ESL Group in the states, was added to provide free production data for further examination. These learners were asked to write a short passage on the topic "How do you expect your life to be different from that of your grandparents" which was similar to that of the previous cloze passage. The main purpose of this follow-up composition task was to test whether the interlanguage features found in the cloze passage task would still hold to be true under the circumstances of learners' free production.

The combination of three different elicitation tasks: the grammaticality acceptability judgment task, the cloze passage plus the writing composition gives a comprehensive examination of the subjects' language ability from different perspectives and levels. And these tasks were presented to the subjects in an order that more and more learners' own free production was required from the subjects.

RESULTS AND ANALYSIS

TASK I: GRAMMATICAL JUDGEMENT

This task tests learners' understanding of three basic elements in English tense and aspect systems: the progressive aspect (the –ing form), the simple present tense, and the future tenses. The basic meanings (focus) of the investigated forms are: (Gass, Sorace, Selinker, 1999:61) "1) Simple present tense expresses law-like regular state or expected events characteristic of their subject at the present time; 2) Future tense is usually used to describe states or events expected in foreseeable future; 3) Progressive aspect is ongoing, witnessed activity that persists for an extended period of time."

Learners were given 14 sentences targeting the above three basic elements in the English tense and aspect system in a randomized order to judge the correctness of each sentence. These sentences describe a fairly wide range of situations. Special attention is directed to the verb forms in every sentence. There are three choices available for every item: "correct", "incorrect" and "not sure". The rate of definite correctness for each sentence was calculated for every individual group.

The results of the grammatical judgment task for the progressive (-ing) form was generalized in Table 1. Among all the 5 sentences:

(1) Dan is seeing better now;

(2) Mary is being in Chicago now;

(3) John is traveling to New York tomorrow;

(4) The new bridge is connecting Detroit and Windsor;

(5) John is smoking American cigarettes now,

sentence number (5) John is smoking American cigarettes now, with the targeted verb form "is smoking", ranked as the most acceptable one for all three subject groups. Although the ranking for the four other sentences varied according to different groups, the gap between the most acceptable and the second most acceptable sentence is quite remarkable across all three subject groups: there was a 21.62% difference in EFL Group1; a 16.67% difference for EFL Group2; and a 27.59% for the ESL Group in the states. The least acceptable sentence for each group is, respectively, sentence number (2) Mary is being in Chicago now, targeting the verb predicate "is being" for the EFL Group1, and sentence number (4) The new bridge is connecting Detroit and Windsor, with the target form "is connecting" for both the EFL Group2 and the ESL Group. The rankings of acceptability were almost identical for EFL Group2 and the ESL Group, with the only difference that sentence number (1) Dan is seeing better now, and (2) Mary is being in Chicago now, tied both as the third acceptable one for the ESL Group.

Table 2 shows the results of the grammatical judgment task for the simple present. Five sentences are tested:

(1) Dan sees better;

(2) The new bridge connects Detroit and Windsor;

(3) John travels to New York tomorrow;

(4) Fred smokes American cigarettes now;

(5) Mary is in Chicago now.

For all three subject groups, sentence number (5) Mary is in Chicago now, targeting the verb form "is in Chicago", and sentence number (3) John travels to New York tomorrow, targeting the verb form "travels to NY" ranked as the most and the least acceptable items respectively. Again, similar ranking patterns were found across the three groups. Group EFL1 and the ESL group

almost had the same ordering. The only difference between the two was a tie of sentence number (1) Dan sees better, and sentence number (4) Fred smokes American cigarettes now, for EFL Group1. The ranking of acceptability for EFL Group2 was different from the other two groups. However, for EFL Group2, when the specific percentage for individual sentences was concerned, a very small difference between sentence number 1 and number 2, only 3.33%, was shown. With this adjustment, the pattern of the acceptability ranking for Group EFL2 also conformed to the general pattern for the other two groups at large.

The results for the future tense were shown in Table 3. Four target items were tested in this form:

(1) John will travel to New York tomorrow;

(2) The new bridge will connect Detroit and Windsor;

(3) Mary will be in Chicago now;

(4) John will smoke American cigarettes now.

Once again, this time all three subject groups showed high conformity in the ranking of grammatical acceptability judgment. The four verb forms for sentences number (1) to (4): "will travel", "will connect", "will be", and "will smoke", ranked in this same order from the most to the least acceptable for all three subject groups. The only nonconformity appeared in the ESL Group, in which sentence number (3) Mary will be in Chicago now, and (4) John will smoke American cigarettes now, tied for the third place.

These results showed a polarization across all three groups for the acceptability of the targeted items. This is a verification of the expected hypothesis in Gass and Ard's previous work (1984:55-57) that subjects will respond more positively to sentences which refer to situations closer to the basic meanings, that is, the focus of the target forms, than sentences which do not.

In the case of the progressive "–ing" form, the activity verbal predicate "is smoking" is much closer to the focus meaning of an "ongoing, witnessed activity which persists for an extended period of time" than the other state or event verbs: "is being", "is traveling", "is seeing", and "is connecting". For the simple present form, which focuses on the meaning of "law-like regular state or expected events characteristic of their subject at the present time", the most common state verb "is" ranked as the most acceptable item among all five sentences tested. And for the future form, the event verb "travel" is the closest to the focus "state or events in the foreseeable future". (Gass & Ard 1984:50-57)

The above analysis proved the hypothesis in Gass and Ard's previous work that the acceptability of sentences, to a certain extent, depended on the "closeness of the canonical interpretation of the given sentences to the focus" (1984:53). Here "canonical interpretation" was in contrast to the learners' actual processing of the tested sentences. In other words, the most acceptable sentence that was judged with the highest rate of correctness was the one with the "canonical interpretation" closest to the focus meaning of the target form. And the further the distance was, the less acceptable it was rated.

Result Comparison to Gass and Ard's Study

Emphasizing the comparison across different languages, in Gass and Ard's (1984) study, they chose two subject groups: 37 L1 Japanese speakers and 52 L1 Spanish Speakers, but no further classification of the learners' L2 English level was made. The different way of subject classification made it impossible for a strict comparison of the present study to Gass and Ard's (1984) study. However, the overall orderings of sentence acceptability for three tense and aspect forms in the present study generally resemble those found in Gass and Ard's study.

Gass and Ard (1984: 55-56) found that "the results basically correspond with what woud

be predicted on the basis of universal principals"; in other words "judgments of correctness of these sentences depended on the closeness of the canonical interpretation of the given sentence to the focus". In all three verb forms, similar "directionality" was found for both the Japanese and the Spanish groups. For both L1 language groups, their ranking of sentences revealed the same pattern: "the most acceptable sentence in both groups was that sentence with the canonical interpretation closest to the focus [and] the less focus like, the less it is viewed as acceptable (Gass and Ard, 1984:56)."

A lateral comparison of the two different L1 groups showed an interesting language specific exception in Gass and Ard study (1981). The Japanese and the Spanish speakers showed a distinctive difference for the judgment of the following pair of sentences:

(a) Dan is seeing better now. (Japanese: Spanish:: 19% : 81%)

(b) John is traveling to New York tomorrow. (Japanese: Spanish:: 32% : 8%)

A significantly larger number of Spanish speakers judged sentence (a) as correct; however, for sentence (b) more Japanese speakers judged it as correct.

The Chinese speakers in the present study responded more like the Japanese speakers than the Spanish speakers. Most of them judged sentence (b) more acceptable than sentence (a), with the exception of the 37 subjects in the EFL Group 1. Gass and Ard (1981) applied Kellerman's hypothesis on learner's psychotypology to explain the above phenomenon of "ordering universal vs. distance language-specific". Japanese is psychotypologically more distant from English than Spanish is from English in many aspects. Based on Kellerman's theory, they believed that "the semantics of tense and aspect elements in Spanish would affect the English language performance of Spanish learners more than would facts of Japanese affect Japanese learners (Gass and Ard, 1984: 62)." This explained why in this study the Japanese

learners generally followed universal principals more closely than the Spanish learners; it is because they were less affected by the language specific factors.

I believe the results of the Chinese speakers from the present study give further support for this explanation: Additional language specific factors influenced the Spanish speakers' responses. The two languages, Mandarin Chinese and Japanese, resemble each other more closely in many aspects than they do Spanish. There is good reason to believe that for both Chinese and Japanese speakers English is psychotypologically more distant from them than English is from Spanish speakers. That is why the Chinese speakers in the present study responded more like the Japanese speakers in Gass and Ard's study.

Table 1: Grammatical judgment ranking of correctness for the progressive (-ing) form:

	EFL 1 (n=37) % of grammatical acceptability		EFL2 (n=30) % of grammatical acceptability		ESL (n=29) % of grammatical acceptability		Native (n=13) % of grammatical acceptability		
1	45.95	2	13.33	4	34.48	3	78.57	3	(a) Dan *is seeing* better now.
2	24.32	5	20.00	3	34.48	3	0	5	Mary *is being* in Chicago now.
3	29.73	4	30.00	2	48.28	2	85.71	2	(b) John *is traveling* to New York tomorrow.
4	32.43	3	10.00	5	17.24	5	21.43	4	The new bridge *is connecting* Detroit and Windsor.
5	67.57	1	46.67	1	75.86	1	92.00	1	John *is smoking* American cigarettes now.

Table 2: Grammatical judgment ranking of correctness for the simple present tense:

	EFL 1 (n=37) % of grammatical acceptability		EFL2 (n=30) % of grammatical acceptability		ESL (n=29) % of grammatical acceptability		Native (n=13) % of grammatical acceptability		
1	29.73	3	63.33	2	51.72	4	42.86	5	Dan *sees* better.
2	59.46	2	60.00	3	89.66	2	100.00	1	The new bridge *connects* Detroit and Windsor.
3	5.41	5	0.00	5	0.00	5	64.28	3	John travels to New York tomorrow.
4	29.73	3	43.33	4	55.17	3	85.71	3	Fred *smokes* American cigarettes now.
5	83.78	1	90.00	1	100.00	1	92.86	2	Mary *is* in Chicago now.

Table 3: Grammatical judgment ranking of correctness for the future tense:

	EFL 1 (n=37) % of grammatical acceptability		EFL2 (n=30) % of grammatical acceptability		ESL (n=29) % of grammatical acceptability		Native (n=13) % of grammatical acceptability		
1	86.49	1	93.33	1	96.55	1	100.00	1	John *will travel* to New York tomorrow.
2	51.35	2	73.33	2	79.31	2	92.86	2	The new bridge *will connect* Detroit and Windsor.
3	18.92	3	6.67	3	6.90	3	0	4	Mary *will be* in Chicago now.
4	10.81	4	3.33	4	6.90	3	35.71	3	John *will smoke* American cigarettes now.

<u>Time Adverbial</u>

Gass and Ard's study did not pay enough attention to the influence of specific contextual cues. In the present study, a further investigation showed that not only the semantics of the targeted verbs influenced the syntactical interpretation. Other contextual factors also played an important role in learners' understanding of the target sentences. The most obvious was the function of the time adverbials. All of the three groups of sentences contained time adverbials. The adverb "now" appeared three times and the word "tomorrow" appeared once in the progressive "-ing" group of sentences. These two time adverbials appeared twice and once respectively in the other two groups of sentence: the simple present tense and the future tense. The semantic meanings of time adverbials influence learners' interpretation of the lexical meaning of the verbal predicates. When the time adverbial's semantic meaning is in conformity with the temporal reference of the target verbal predicate it positively strengthens the reading of the temporal expression in the predicate. For instance, in the progressive form, the adverb "now" greatly enhanced the sense of "ongoing ness" in the following two sentences: "(5) John is smoking American cigarettes now." and "(2) Mary is being in Chicago now." However, the time adverbial sometimes also interfered with learners' correct understanding of the target form when meaning of the adverb was not consistent with the basic temporal reference of the target verbal predicate form. This was most evident among lower level learners. For example, still in the progressive form, the adverbial "tomorrow" brought more difficulty for the EFL Group1 subjects than the other two groups. In this sentence, (3) John is traveling to New York tomorrow, the future sense of the time adverbial worked against the ongoing status of the progressive form. Thus, EFL Group1 ranked it as the fourth acceptable item in the group of five sentences, whereas the other two groups gave it a higher rank: the second place. In a similar

case, the semantic meaning of the adverbial "now" in the future tense, counter-acted with the sense of "future" for the target form. The subjects lowered the ranking of these two items: sentence (3) Mary will be in Chicago now, and sentence (4) John will smoke American cigarettes now; to the last and the second to the last acceptable sentences.

TASK II: THE CLOZE PASSAGE

Replicating Bardovi-Harlig's 1992 study, the data from the cloze passage will be investigated from the following two perspectives:

I. a comparison of formal accuracy and appropriate use relative to target-like use;

II. a distributional analysis of the forms that the learners supplied with respect to the developing interlanguage system.

All the scoring and analysis procedures strictly followed those in Bardovi-Harlig's (1992) study.

<u>I. Form and meaning</u>

The form and meaning analysis compares learner production with native English speakers' target production. Responses to the cloze passage were scored and totaled separately for form accuracy and appropriate use in the relevant context. Every response is viewed as the intersection of two independent categories: form accuracy and meaning appropriateness. The above two categories are scored individually. This made it possible for every response to have four different kinds of readings: 1) both correct grammatically in form and appropriate in meaning for the context; 2) grammatically correct in form but inappropriate in context; 3) incorrect in form but appropriate for the context; 4) neither grammatically correct nor semantically appropriate. The following table cites an example for each case for ease of understanding.

Table 4: Example sentences of the four possible readings for form correctness and meaning appropriateness (Example sentences adapted from Bardovi-Harlig 1992:258)

Example	Form	Meaning
1) My grandmother once (tell) _told_ me that…	1	1
2) My grandmother once (tell) _was telling_ me that…	1	0
3) My grandmother once (tell) _telled_ me that…	0	1
4) My grandmother once (tell) _is tell_ me that…	0	0

Scoring standard

Following Bardovi-Harlig, a "context sensitive" method of scoring was adopted for both form accuracy and meaning appropriateness. Each item of the cloze passage was worth two points: one for formal accuracy and one for meaning appropriateness. In order to score 1 point for formal accuracy, a response had to be completely well-formed in its immediate syntactical environment; no partial credit was given. All base forms, for example "take" as in "she take care of her family", were not credited, but "takes" or "took" were counted as correct in this case. Forms with incorrect subject and verb agreement could not be credited either. The meaning appropriateness was evaluated by the correctness of meaning in the appropriate context determined by the responses of the control group of native speakers. No partial credit was given in this category either. For instance, if the target form is "My grandmother (work) worked on the farm," and a learner responded "was working", no credit could be given because even though "was working" expresses past tense, it also shows progressive aspect which is inappropriate in the context. The total scores for formal accuracy and meaning appropriateness were calculated and divided by the number of total test items for each subject group.

Formal accuracy and meaning appropriateness are two independent categories. The scoring procedure of either one of them is not subject to the prerequisite of the correctness of the other. Even under circumstances when the response is not well-formed, if the attempt to express the target tense and aspect could be proved by enough evidence, the point should be credited, as in the case of "taked" for the target form "she (take) took care of her family". Since "taked" here could be viewed as an attempt to create the simple past form.

Null hypotheses

Three null hypotheses are made for the relationship of form and meaning in the development of these ESOL learners' interlanguage:

1. There is no difference of form accuracy across these 3 groups of different English proficiency levels.

2. There is no difference of meaning appropriateness across these 3 groups.

3. There is no difference in any interaction between form accuracy and meaning appropriateness across these 3 groups.

Results of the form and meaning analysis

Table 4 presents the scores for formal accuracy and meaning appropriateness across the three proficiency groups. The scores were obtained by dividing the number of correct responses by the total number of responses possible for each group. The total number of possible responses for each level equals the number of items, which is 14, multiplied by the number of learners in each group. The first column of the table gives the score for formal accuracy. The highest score for accuracy of form were reached by Group EFL2 and the ESL Group, which were both around 80%. The difference between the two is extremely small, less than 1%. There is a comparatively large gap between these two groups and the EFL1 Group which was around

20%. Learners in the ESL environment did not improve significantly compared to the higher level group in the EFL environment. And even the EFL Group1's percentage of correctness was over 60%. Conforming to the findings in Bardovi-Harlig's (1992) study, the results of the formal accuracy correctness also proved that "learners are aware of what constitutes a grammatical string of English even at lower levels of proficiency"(Bardovi-Harlig 1992:259).

Shown in the second column of Table 4 is the score for meaning appropriateness. For each individual group this score is lower than that for formal accuracy. The score for meaning appropriateness in context dropped below 50% for the lowest proficiency group, EFL Group 1, and improved to around 70% for the other two higher proficiency groups. The gap between EFL Group 2 and the ESL Group is not that distinct. Figure 2 is an illustration of the differences between formal accuracy and meaning appropriateness across all three groups.

In Bardovi-Harlig's 1992 study, there were six levels of proficiency groups. The pattern of comparison and development across all levels had a much more gradual progression than that of the present study. In this study, from Figure 2 the general pattern can still be witnessed. The biggest difference lies in the gap between formal accuracy and meaning appropriateness within each individual group. In Bardovi-Harlig's study, this gap is much wider from 40% for the lowest level to around 20% for the two highest levels. However, although the pattern of a decreasing gap is still evident, the value of each individual gap is much smaller than that of the replicated study: from around 15% for EFL Group1 to about 7% for EFL Group2 and the ESL Group.

Table 5: Formal accuracy and meaning appropriateness by the three subject groups

Group	Formal accuracy		Meaning appropriateness	
	Raw score	Percentage	Raw score	Percentage
EFL1 (N=37)	314/518	60.62%	236/518	45.56%
EFL2 (N=30)	334/420	79.52%	300/420	71.43%
EFL3 (N=29)	325/406	80.05%	298/406	73.40%

Figure2: Development of form and meaning across three subject groups

Figure2: Development of form and meaning across three subject groups
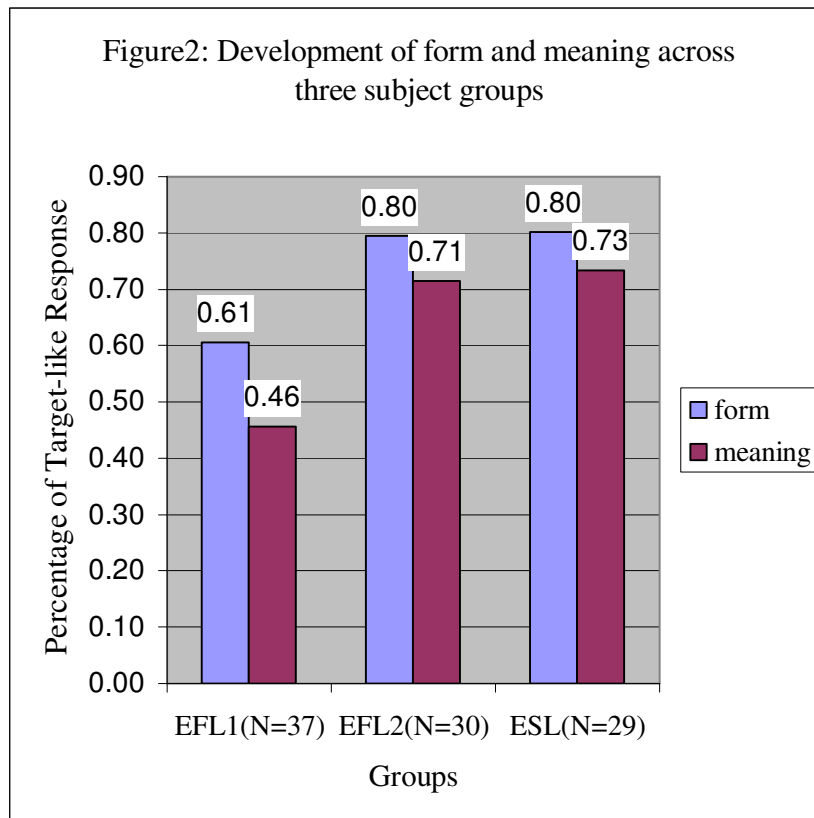
ANOVA was chosen as a statistical measure for validity to provide inferential statistics. Because what we are really interested in is not only the sample of subjects in the current study, but, even more important, the general Chinese ESOL learner population that this sample represents. Inferential statistics allow us to draw inferences from samples about populations. "Between subjects" means each subject contributes to only one condition; "within-subjects" means each subject contributes to each condition.

A first one-way between-subject ANOVA was conducted to show the relation between form accuracy and the learners' proficiency level. A one-way between-subjects (group (EFL1 vs EFL2 vs ESL)) ANOVA on form accuracy scores shows that there is a significant difference in the means of accuracy of form across the three proficiency groups, $F(2,93)=19.965$, $p<0.0005$. Following Bardovi-Harlig's analysis, a post-hoc Student Newman-Keuls[3] indicates the following pattern:

EFL Group 1(8.94)   ESL Group (11.13)   EFL Group2(11.10)

The mean score for EFL Group1 is significantly different from the means of ESL Group and EFL Group2. No significant difference was found between the ESL Group and EFL Group 2. This rejects the first null hypothesis that there is no difference of form accuracy across these 3 groups of different English proficiency levels. Formal accuracy was directly related to learners' proficiency level; there was a significant difference between the lower level group and the two other higher level groups.

The relation between meaning appropriateness was also tested by a one-way between-subjects ANOVA. This second one-way between-subjects (group (EFL1 vs EFL2 vs ESL)) ANOVA on meaning appropriateness scores shows that there is a significant difference in the means of appropriateness of meaning in context across the three proficiency group,

F(2,93)=28.409, p<0.0005. A post-hoc Student Newman-Keuls indicates the following pattern:

EFL Group 1(6.43)   EFL Group 2(10.00)   ESL Group (10.17)

There is a significant difference between the mean score of EFL Group1 and those of the other two groups.   The mean scores of EFL Group2 and the ESL Group were not found to be significantly different from each other.   This rejects the second null hypothesis that there is no difference on meaning appropriateness across these 3 different proficiency levels.   Again, the lower level group performed significantly differently from the two other higher level groups.

To determine the differences in the interaction of formal accuracy and meaning appropriateness, a two mixed-designed ANOVA was conducted. This two-way mixed-design ANOVA showed whether there is a difference in formal accuracy and meaning appropriate use across the three proficiency groups. The effect of proficiency level (different learner groups) is significant, with F (2, 93) =31.211, p<0.0005. The effect of type of test is also significant, F (1, 93)=59.638, p<0.0005, with a Huyn Feldt correction.   The interaction between type of test (formal accuracy and meaning appropriateness) and the group is also significant, F (2, 93)=6.800, p<0.002, with a Huyn Feldt correction. This is a rejection of the third null hypothesis that the interaction of formal accuracy and meaning appropriateness would not differ across 3 different proficiency groups.

Table 6: Analysis of variance

	F values	p values
Type of test (Form/Meaning)	59.638	0.0005
Group	31.211	0.0005*
Type of test × group	6.800	0.002*

* with Huyn Feldt correction.

Similar to Bardovi-Harlig's 1992 study, relatively few errors were found for formal accuracy. Except for the two major types of errors mentioned earlier in the previous discussion: the use of the base form and the subject-verb disagreement, there are other types of errors including: misformations, substitutions and lack of response.

The above data show a pattern of form and meaning progression similar to that found in Bardovi-Harlig's 1992 study, with a few exceptions. Comparing the Bardovi-Harlig study which classified subjects into 6 different proficiency groups, the current study only has 3 proficiency levels. In Bardovi-Harlig's study, the progression of the difference between form and meaning from lower levels to more advanced level is more gradual than it is in the current study. However, the above analysis still proves that form and meaning develop at different rates, and the development of form precedes that of meaning for all three proficiency groups. In other words, fully grammatical forms appear before they can carry out target-like meaning. However, as these learners' English proficiency level increase, the gap between formal accuracy and meaning appropriateness narrows down. This is in accordance with learners' interlanguage development: higher level learners would show more target like production than lower level learners.

II. Distributional analysis

This distributional analysis further explores how those forms supplied by the learners are used in the developing interlanguage systems. Bardovi-Harlig predicted in her work that during the time when meaning appropriateness lagged behind the development of formal accuracy, learners' appeared to use L2 English verbal morphology in a systematical but non-target-like way. Following Bardovi-Harlig's analysis, a distributional analysis of learners' responses for all

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target forms in the simple past tense in the cloze passage was conducted to illustrate this non-target-like systematicity in the developing learners' interlanguage. Among all the target form in the cloze passage, Bardovi-Harlig chose to use the simple past tense because it has the greatest representation.

Six items in the cloze passage required responses in the form of simple past tense. A distributional analysis for all these six contexts shows all the verb forms supplied by learners for each context. The results of the distributional analysis for "told", "died", "lived", "worked", and "took care of" are presented in Tables 6 to 10. The percentage of the responses for each form supplied by learners at each individual level is listed. The base form indicates an uninflected predicate, such as "tell", "die", etc. The abbreviation "Prog." stands for the use of an "–ing" verb form without any auxiliary for example, "Ø telling". All miscellaneous forms are listed under the category "Misc", including the lack of response, malformation, and other idiosyncratic items.

In Bardovi-Harlig's (1992) study, learners across all levels showed the highest rate of appropriate use for "told" as in "My grandmother once *told* me that …" and "died" as in "…until my grandfather *died*" and the lowest rate for "lived" in "My grand parents … *lived* on a farm", "worked" in "My grandmother *worked* on the farm…", and "took care of" in "…she took care of her family …" In her study, the relatively high level of appropriate use of "told" and "died" was maintained continuously from lower proficiency levels to upper levels. And relatively lower rates of appropriate use were shown throughout all proficiency groups in the target items "lived", "worked", and "took care of". She also found the past progressive as a form showing strong competition for the target simple past tense in the cases of "live", "work" and "take care of". (Bardovi-Harlig 1992:262)

Table 7: Distribution of responses for the verb "tell"

Group	Base	Past	Past prog.	Past perf.	Pres. Perf.	Pres Prog	Pres. Prog.	Pres. perf. Prog.	Past perf. prog.	perf. .	Prog	Misc.	
EFL1	5.41	75.68	-	-	-	-	-	-	-			2.70	16.22	tells, telled(4), tolde
EFL2	-	96.67	-	3.33	-	-	-	-	-		-	-	-	-
ESL	-	100.00	-	-	-	-	-	-	-		-	-	-	-

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Table 8: Distribution of responses for the verb "die"

Group	Base	Past	Past prog.	Past perf.	Pres. perf.	Pres Pres. prog	Pres. prog.	perf.	Past prog.	perf.	Prog.	Misc.
EFL1	-	62.16	-	-	-	-	-	-	-	-	37.84	was dead (5), was died, dead (8)
EFL2	-	90.00	-	6.67	-	-	-	-	-	-	3.33	dead
ESL	31.03	65.52	-	-	-	-	-	-	-	-	3.45	dead

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Table 9: Distribution of responses for the verb"live"

Group	Base	Past	Past prog.	Past perf.	Pres. perf.	Pres prog	Pres. perf. prog.	Past perf. prog.	Prog.	Misc.
EFL1	8.11	48.65	2.70	-	5.41	8.11	-	-	13.51	13.51 is live, was lived (2), lift (2),
EFL2	6.67	90.00	-	-	-	3.33	-	-	-	-
ESL	6.90	86.21	3.45	-	3.45	-	-	-	-	-

Table 10: Distribution of responses for the verb "work":

Group	Base	Past	Past prog.	Past perf.	Pres. perf.	Pres prog	Pres. prog	Pres. prog.	perf. Past perf. prog.	Prog.	Misc.	Workes
EFL1	2.70	72.97	2.70	-	-	13.51	-	-	-	2.70	5.41	(2)
EFL2	-	90.00	-	-	-	6.67	-	-	-	3.33	-	-
ESL	-	89.66	-	-	-	6.90	-	-	-	3.45	-	-

Table 11: Distribution of responses for the verb phrase "take care of"

Group	Base	Past	Past prog.	Past perf.	Pres. perf.	Pres. prog	Pres. prog.	perf. Past prog.	perf.	Prog.	Misc.	
EFL1	2.70	72.97	-	-	-	16.22	-	-	-		2.70	5.41	tooks, taked
EFL2	-	86.67	-	-	-	10.00	-	-	-		-	3.33	taked
ESL	-	93.10	-	-	-	6.90	-	-	-		-	-	-

Table 12: Distribution of responses for the verb "stay"

Group	Base	Past	Past prog.	Past perf.	Pres. perf.	Pres.	Pres. prog	Pres. perf. prog.	Past perf. prog.	Prog.	Misc.
EFL1	24.32	43.24	-	-	-	10.81	-	-	2.70	-	18.92	staied(4), to stay, staies,no answer
EFL2	3.33	96.67	-	-	-	-	-	-	-	-	-	-
ESL	10.34	82.76	-	-	-	-	-	-	-	-	6.90	staid, stood

Compared to Bardovi-Harlig's study, generally speaking, all the target verb forms in the present study have a higher rate of appropriate use. In the present study, "told" still has the highest rate of appropriate use across all three proficiency groups. The verb forms "lived," "worked," and "took care of" still have a lower rate of appropriate use compared to "told." However, in the case of the verb form "died," in two of the subject groups: EFL Group 1 and the ESL Group, its rate of appropriate use dropped to a very low level. In contrast, it still maintained a high level in EFL Group2. The competition from the past progressive form is not as strong as in Bardovi-Harlig's study. It is observed in the cases of "live" and "work," but not in the case of "take care of". It was not evident throughout all three proficiency levels. Instead, for all of the three durative verbs "live," "work," and "take care of," the simple present tense appeared to be a relatively strong competing form compared with the target simple past tense form.

Bardovi-Harlig attributed the above features found in her study to the influence of lexical aspect. According to her, the characteristic of punctuality of the achievement verbs "tell (that)" and "die" triggered the non-progressive aspectual feature, resulting in the higher rate simple past tense form in learners' responses; in fact, the lexically durative verbs, such as "live", "work" and "take care of" are often associated with the progressive aspect by learners. This explanation is still plausible for the association of verb tense and lexical aspect in the present study, in spite of the two exceptions mentioned above: the lower rate for the achievement verb "die" and the appearance of simple present tense as a form of response. Because of the wide variety of the first languages represented by her subject groups (Arabic, Japanese, Spanish and Korean), Bardovi-Harlig did not claim first language transfer as an important factor in her analysis. However, in the present study, the tense and aspect system of Mandarin Chinese does seem to show some influence on these learners' L2 English. In the case of the verb "die" in "…until my

grand-father died", a literate Chinese translation would apply neither tense nor aspect morphology, instead an adverb "之后" *zhi(1)hou(4)* meaning "after(wards)" is needed. The most important is that in this case, the achievement verb "die" is better translated into "去世" *qu(4)shi(4)*, a stative verb rather than its literal equivalent "死" *si(3)* as shown in the following sentence:

直到　　　　　　　我祖父　　　　　　去世之后。

Zhi(2)dao(4)　　　　wo(3) zu(3)fu(4)　　qu(4)shi(4) zhi(1)hou(4).

Until　　　　　　　my grandfather　　die afterward

….until my grandfather died.

It is very possible that the lower rate of appropriate use of simple past tense with the verb "die" in this present study by Chinese L1 learners is caused by their direct translation from the first language Chinese. Here what influenced their interpretation is no longer the punctuality aspect of the achievement verb die/ "死 *si*"; instead what comes into play this the stative aspect of the Chinese translation "去世 *qushi*." In the translation, although the literal meaning does not change, the lexical aspect associated with the verb does change. This explains the decrease of the appropriate use of the simple past tense in the present study compared to Bardovi-Harlig's 1992 study. First language transfer is also a possible trigger for the appearance of more forms of simple present tense for durative verbs "live", "work" and "take care of". Because of the tenseless feature of Chinese, Chinese L1 learners of English may have more difficulties acquiring the present vs. past tense distinction in English. Furthermore, according to the discourse hypothesis for interlanguage development, learners would use emerging verbal morphology to distinguish foreground from background in narratives (Bardovi-Harlig, 1994). All three of these verbs (lived, worked, took care of) appeared in the very beginning of the

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passage where the background of discourse is usually set up and where past progressive and other non-simple past forms are commonly observed. Although the data from the present study does not give direct support to the discourse hypothesis, the relation of the event time: "my grandmother's time" and the time of reading/talking was already set up in this sense. Since "My grandmother's time" is located prior to the time of reading/talking, it is very likely for Chinese L1 learners who are accustomed to linguistic devices other than verbal inflections to ignore the morphological marking of the distinction of present vs. past tenses.

The result of the distribution of the verb "stayed", shown in Table 12, suggests that some learners in the lower level of proficiency, namely the EFL Group 1, supplied the simple present form as a response. This demonstrates the influence of local cues over global tendencies. In the target sentence "The women of my grandmother's generation usually stayed home," the adverb "usually" which is indicative of habitual aspect triggered simple present forms in some learners. Although "usually" can be used in both present and past tense, about 11% of the learners in the lowest proficiency level, EFL Group 1, supplied forms in the present tense. This proves Bardovi-Harlig's finding that "for low-proficiency learners, local cues related to aspect are more powerful determinants of form choice than maintaining consistent tense relations across the passage" (1992:267).

III. Composition data

Since completion of the cloze passage requires both comprehension and production, the initial interpretation might affect learners' final production. Several questions remain: Does the context of the cloze test influence learners' interlanguage production? Would those systematic but non-target-like features found in the cloze passage responses still persist in learners' free

production? A follow-up voluntary writing composition task was conducted among the ESL Group in the US in an attempt to answer the above questions.

On the questionnaire for the ESL Group, there is an additional written task which asks learners to complete a passage on the topic of "How do you expect your life to be different from that of your grandparents?" in 30 minutes. Since it was voluntary, we collected a limited quantity of available data: Only 19 out of 29 students in this group responded to this task. In addition, not all of the responding students wrote passages in a way for the researchers to make valid comparisons. As a result, the comparison of the composition data and the cloze passage responses was very restricted in many aspects. However, the same pattern of formal accuracy preceding meaning appropriateness appears in the composition data.   Again focusing on target forms in the simple past tense, a general glance through the 19 available students' compositions showed that the systematic but non-target-like use of forms was fairly apparent.

In Bardovi-Harlig's 1992 study, she listed two additional characteristics of learners' non-target like systematic use of English tense and aspect system in their own interlanguage: 1) the redundant use of past progressive forms for both durative and habitual situation; 2) the use of the past perfect in simple past tense contexts. In the present study, the first feature was not very obvious and very few examples could be found. However, there are quite a few cases of the second feature: the substitution of past perfect for the simple past. Some examples are the following:

a) At that time, she *had been* a real good housewife: she could cook very well and could do a wonderful needlework.

b)…my gra[n]dpa *had lived* in an old, backward China, [when] Japanese invaded China, and killed innocent Chinese local people like treating animals.

c) My grandfather *had lived* with seven kids since then: three daughters and four sons. The family was common in China in 1950s.

d) I was born in 1970s. My parent *had separated* from the big family several years later. The living condition was getting better and better. My parents had to work hard to support my sister and me to study in the university until we graduate.

Considering the single first language background of the subjects in the present study, the lack of the redundant past progressive marking for lexically habitual verbs across all three subject student groups might again be attributed to the influence of first language transfer. In Chinese, the semantic meaning of the past progressive form has to be achieved through the use of the progressive particles and the past time adverbial, or other linguistic devices at the same time. For example:

他　　　　刚才　　　　在　　　　吃午饭。

ta(1)　　　gang(1)cai(2) zai(4)　　　chi(1)wu(3)fan(4)

he　　　　just now　　[particle]　　have lunch

He was having lunch (just now).

In the above sentence, the past time is marked by the time adverbial "刚才 gang(1)cai(2)", and the progressive particle "在 zai（4）"indicates the progressive aspect. However, even if without the time adverbial, the sentence is still grammatical in Chinese, just with more possible readings: it might be something happens in the present or even in the future; it all depends on the context. In addition, the expression of durative situation always requires marking of the progressive particles even if the verbal predicate has a durative aspectual meaning in itself. For example:

她　　　　住　　　　在　　　　北京。

ta（1）　　　zhu（4）　　　zai（4）　　　bei（3）jing（1）

she　　　　live　　　　[particle]　　　Beijing

She lives/lived in Beijing.

Without the progressive particle "在（zai）," the sentence "她住北京" is still grammatical in

Chinese, and its English translation would still be "She lives/lived in Beijing" depending on the

context, but actually this Chinese sentence does not carry the durative sense as its English

counterpart anymore. Moreover, since the expression of habitual situations in Chinese is

realized through the sole use of time adverbials, no linguistic particle is needed, as showed in the

following example:

她　　　　过去　　　　　经常　　　　　　去那里。

ta(1)　　　guo(4)qu(4)　　　jing(1)chang(1)　　　qu(4)na(4)li(3)

she　　　　in the past　　　　often　　　　　go there

She used to go there./ She often went there.

In English the simple past tense itself is a combination of both past time in tense and perfective

aspect.　As Chinese native speakers, these students might not be sensitive enough to the double

meanings expressed by English simple past tense. Further examination of the composition data

showed that there were actually few examples of the use of past progressive tense in these

Chinese English L2 learners' writing.　Two other possible explanations for this lack of

redundant use of past progressive marking in these Chinese English learners' interlanguage were:

a) these learners already mastered this part of the English grammar, so they no longer made

mistakes in this area; b) they avoided the use of past progressive tense because of its extreme

difficulty for these English L2 learners with their tenseless L1 background. Obviously, because

of the limited quantity of data available, evidence from the present study is not conclusive to

determine which one is the actual cause. This not only points out the importance of further investigation of learners' free production data, but also calls for an effective way to link the more controlled data elicitation task with the free production task.

SECTION 6

CONCLUSION

This study replicates Bardovi-Harlig's 1992 study and a part from Gass and Ard's 1984 study on ESOL learners' acquisition of the English tense and aspect system. Both target studies probe the research questions from higher level constraints with different focus. Gass and Ard probe the question from the perspective of typological language universals; Bardovi-Harlig focuses on the relationship of form and meaning in the development of learner's interlanguage. In both studies, time adverbials were found to have a significant influence on learner's acquisition of the tense and aspect system, especially for learners at lower L2 proficiency levels.

This present study explores the acquisition of the L2 English tense and aspect systems by a group of learners with homogeneous first language background: Mandarin Chinese. A cross-sectional study of 97 subjects was conducted by using a questionnaire survey consisting of three different elicitation tasks varied in the extent of controllability. From the most to the least controlled, they are, respectively: a grammaticality acceptability judgment task, a cloze passage and a voluntary composition writing task on a similar topic with the cloze passage (only for the third group in the states).

The result of the first grammaticality acceptability judgment task basically confirms the previous prediction made by Gass and Ard (1984) that the typological language universals influence the development of tense and aspect system in second language learners' interlanguage. To be specific, the closer the "canonical interpretation" of the verb and its content is to the focus of the target form of the verb, the higher these sentences are rated in the grammaticality acceptability judgment. A further investigation suggests that both semantic and contextual factors influence the syntactical interpretation of a target form. For all three target

forms: the progressive *–ing* form, the simple present form, and the future form, the more the verb predicates' semantic meaning is in accordance with the canonical meaning carried by the target form the more acceptable it is judged. Lexical expressions, time adverbials in particular, have a strong influence on the learners' interpretation and production of temporal references. This is especially true for learners in the lower proficiency levels. A comparison to the results of Gass and Ard's 1984 found that the Chinese speakers responded more like the Japanese speakers on a pair of sentences which the Japanese and Spanish speaker groups had distinctively different judgments. This can be explained by Kellerman's theory of language learner's psychotypology (cited in Gass and Ard, 1984). Both Mandarin Chinese and Japanese resemble each other more closely in many aspects than they do Spanish, and they are both more distant from English than Spanish is from English. This explained why the Chinese learners in the present study responded more like the Japanese speakers in Gass and Ards' study.

For the cloze passage, analysis of variances on the relationship of form and meaning was conducted first. Results of the cloze passage rejected all of the three null hypotheses on the relationship in the development of these ESOL learners' interlanguage: 1) There is no difference of form accuracy across these 3 groups of different English proficiency levels; 2) There is no difference of meaning appropriateness across these 3 groups; 3) There is no difference in any interaction between form accuracy and meaning appropriateness across these 3 groups. Both formal accuracy and meaning appropriateness were directly related to learners' proficiency level; there was a significant difference between the lower level group and the two other higher level groups. In other words, learners in the lower proficiency group performed significantly different than learners in the other two higher level groups. The interaction of formal accuracy and meaning appropriateness is also in direct proportion to learners' proficiency level. These results

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show that the interlanguage tense and aspect systems exhibit a pattern of form accuracy preceding meaning appropriateness.

A distributional analysis of the simple past tense forms in the cloze passage was carried out to further explore how tense and aspect systems of learners' interlanguage were developed. When meaning appropriateness is delayed compared to the development of formal accuracy, learners rely on other alternatives, for instance, lexical aspect, discourse organization, and other contextual cues, to facilitate their understanding of the relationship between form and meaning. During the period of time when form proceeds meaning, the learner's interlanguage is characterized by the non-target like but systematic use of the English verb tense and aspect system.

Unlike the two target studies in which the subjects came from different first language backgrounds, the subjects in the present study all spoke the same first language: Mandarin Chinese. This gives us the possibility to consider and evaluate the influence of L1 on the pattern of development of the tense and aspect of L2 English. Distributional analysis of the simple past tense showed that the tenseless L1 Mandarin Chinese does have an influence on the development of L2 English tense and aspect system. Different methods in English and Chinese for the expression of temporality, to be specific, fewer morphological inflections in Chinese compared with English explained why the Chinese learners use competition forms different from those found in Bardovi-Harlig's 1992 study for the target simple past tense. Another important L1 factor is the change of verbal lexical aspect in translation, when the verbal lexical aspect is different in Mandarin Chinese and English, learners appeared to be influenced by the original lexical aspect in L1 as showed in the case of "死 si" to "去世 qushi". Examination of the supporting composition writing data provides further proof of the previous founding in the cloze

passage. However, the limitation in quantity called for more data from learners' free production.

The present study has provided evidence to support that the development L2 English tense and aspect system is influenced by both higher universal constraints such as language typological universals and L1 transfer, and lower level surface constraints, for instance, contextual cues, time adverbials, etc. In addition to that, the present study combines three different language elicitation tasks together. These tasks vary from the extremely controlled acceptability judgment test to learners' free production of composition writing. These different tasks not only examine the learners' language ability from different perspectives but also ensure that reliable responses from learners of different proficiency levels. This guarantees the possibility of a richer picture in the examination of the learners' interlanguage of the tense and aspect system.

END NOTES

[1] **College English Test**, better known as **CET,** is a nationwide English level test in the People's Republic of China. The full credit is 100 points. This test is held twice a year across the nation, in June and December. CET consists of band 4, band 6 for non-English majors and English-specialized band 6 and band 8 for students major in English. The content includes listening, reading and writing tests. An oral test is optional and requires certain points from written test. Only students who have reached a certain minimum score (the specific score varies from year to year) are selected randomly for the oral test.

[2] **The Test of English as a Foreign Language** (**TOEFL)** evaluates the potential success of an individual to use and understand Standard American English at a college level. It is required for non-native applicants at many American and English speaking colleges and universities. The TOEFL is the product of the Educational Testing Service (ETS), which is contracted by a private non-profit firm, the College Board, to administer the test.

[3] Range tests are used to identify subsets of means that do not differ from each other. **Student-Newman-Keuls** is a stepwise test for ordered means where the alpha level depends upon the number of "steps apart" each of the means are from each other. (Becker, 1998)

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