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A Cross-Sectional Study on the Roles of Lexical Aspect and L1 Transfer in Tense-Aspect Acquisition

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Abstract

This study aims to investigate the acquisition of English verb morphology by learners of two typologically different L1s and the role of L1 transfer in the acquisition pattern, a cross-sectional study (n = 180) carried with Chinese and Mongolian college students learning English at two proficiency levels, using the cloze passage and composition. 120 cloze passages and 20 compositions were selected as data to be analyzed. Consistent with the Aspect Hypothesis, the results of MANOVA tests show a significant effect of lexical aspect on tense-aspect marking use: the perfective and past markings are strongly associated with Achievements/Accomplishments; the progressive marking is strongly associated with Activities; the present marking is strongly associated with States. Even though Mongolian and Chinese learners show virtually the same acquisition pattern, their performances in using the past, perfective, and progressive markings are different. Mongolian learners exhibiting superiority over Chinese learners in associating and correctly using the perfective and progressive markings, overuse of progressive markings by Mongolian learners, and overextending progressive markings to States by both L1 groups show evidence of L1 transfer. Contradictory findings are greater use and correct use of past markings with States than with Activities, overextending progressive markings to States, and learners' preference for using progressive markings with Achievements to Accomplishments, which suggest that the methodology, L1, sentence structures and input may somewhat affect the results of tense-aspect marking studies.

Keywords: the aspect hypothesis, lexical aspect, tense-aspect morphology

1. Introduction

Research studies in first and second language acquisition have indicated that the acquisition and distribution of tense-aspect morphology is influenced by inherent lexical aspect, following a universal pattern (the Aspect Hypothesis: e.g., Andersen & Shirai, 1994; Robison, 1995). The Aspect Hypothesis predicts prototypical strong association between the perfective/past marking and Achievements/Accomplishments, between the progressive marking and Activities, and between the present marking and States. As the proficiency level increases, the use of these tense and aspect marking will gradually spread to other types of verbs. Although the predictions have accumulated plenty of supporting evidence, some contradictory findings are observed in recent studies, thefirst and most frequently reported counterexample is non-target-like overextension of the progressive marker *-ing* to States. A second and related counterexample is the highest association of the progressive marking *-ing* with Achievements rather than Activities. A third problematic result regarding the perfective past, though the use of the past marking is strongly associated with Achievements, the association is particularly apparent for the regular past (*-ed*) while the irregular past does not show this trend. The last potential counterexample is that less advanced learners are not necessarily more restricted to the prototypes than more advanced learners.These counterexamples demonstrate that besides the lexical aspects other factors, such as discourse, instruction, L1 transfer and input may determine the degree to which the predictions of the Aspect Hypothesis are met.

Those factorsthat may affect the acquisition sequence of interlanguage have been explored. The role of discourse and instruction has been attested in Bardovi-Harlig' studies (2000, 2001), but she finds no significant L1 effect by reviewing the studies with mixed first language backgrounds' learners. However, in recent studies some researchers interpret the deviation from the pattern predicted by the Aspect Hypothesis as the influence of L1. Investigating the data from Dutch and French learners of English, Housen (2002) finds that learners are more apt to use *-ed* and the irregular past form as markers of past tense than to use *-ing* as a marker of progressive aspect.

Housen interprets it as the L1 transfer given that Dutch and French are tense-prominent languages while English is more aspect-prominent. He considers it as conceptual transfer. In the acquisition of other languages like Italian, Chinese, Japanese, the conceptual transfer has also been claimed. The influence of their mother tongues is observed by overusing or underusing certain tense or aspect marker of the target language.

Though the possibility of L1 influence is regarded as a contributing factor to the acquisition of tense and aspect morphology, studies systematically designed to test the effect of L1 is few. Collins's (2002) replication studies of Bardovi-Harlig and Reynolds (1995) with Francophone learners of English show that the perfect (similar in form but not function to the French passé composé) is the most common alternative to simple past for telics, which is the evidence of L1 influence on the acquisition pattern of tense and aspect morphology. However Ayoun and Salaberry's (2008) study from a group of 21 high school French speakers learning English in France did not confirm that their first language lead French speakers to overuse the English present perfect due to its morphological similarity with the passé composé. Cai (2001) finds that Chinese aspect markers (*-zhe, -le, -guo*) have positive effects on the use of tense and aspect morphology in English through analyzing data collected through a Chinese-English translation test. Sun and Du' comparative study (2009) by Chinese and Japanese EFL learners notes the possible L1 influence in Japanese learners' higher acceptance of erroneous progressive achievement and state verbs.

In view of those studies mentioned or designed to test the effect of L1 transfer, they either have too few subjects investigated or too few different verbs examined (Housen, 2002; Giacalone-Ramat, 2002; Shibata, 1999, as cited in Shirai, 2002). The elicited data in translation test (Cai, 2001) are not so convincing either, because the aspect markers in native language would remind learners to encode tense or aspect in the target language. All these scenarios may bias the results one way or the other. The data from other L1 groups, especially typologically different L1s groups are sparse except for Koyama's (1998 as cited in Shirai, 2002) study and Sun and Du' study (2009). The present study, with 120 subjects at two college levels utilizing cloze passages and written narratives, investigates typologically different L1s and L2 with the focus on the possible effect of typological differences on the Aspect Hypothesis as well as the effect of L1 transfer. The most important contribution of the present study is the comparison of tense-aspect systems of L1s (Chinese and Mongolian—with/without tense) and L2 (English).

In short, the present study has two objectives: 1) to observe the distribution of verb morphology of two typologically different L1 learners acquiring L2 English: a. the spread of the past and perfective markings across lexical aspectual classes; b. the spread of the progressive marking across lexical aspectual classes; c. the spread of the present marking across lexical aspectual classes; and 2) to investigate the role of language transfer in the acquisition of tense-aspect morphology on the basis of analyzing the tense and aspect systems of L1s and L2.

2. Properties of English, Chinese and Mongolian Tense-Aspect Systems

Since the present study will focus on the impact of L1 on the acquisition pattern of tense-aspect morphology, it is essential to understand the differences and similarities between the target language (English) and the first languages (Chinese and Mongolian).

English has three tenses: present, past, and future, but only the present tense and past tense exert inflectional morphemes on the verb. The present tense is marked with zero morpheme (Ø), except for the suffix *(e)s* on the third person singular. The past tense is marked with the suffix *ed* for regular verbs, while irregular verbs are encoded with different word forms like *is/was, make/made*. Aspectually, English marks the distinction between perfectivity and imperfectivity: the perfect aspect marked with auxiliary verb *have* and suffix *ed*on the predicate verb and the progressive aspect marked with auxiliary verb *be* and suffix*ing* on the predicate verb. Aspect cannot be encoded singly, but must be combined with one of three tenses to indicate a completive or partial view of the situation before, at or after the reference time.

However, tense can be encoded without perfective or progressive aspect. The aspectual meaning can be conveyed by the interaction of tense and lexical aspect of the verb predicates. Celce-Murcia & Larsen-Freeman (1999) assume it to be the zero aspectual morpheme (Ø). For instance,

1) Tom loves Mary.

2) He gets up at six in the morning.

3) I met Tom yesterday.

The State in sentence 1) indicates durative and open reading while a dynamic event in sentence 2) indicates habitual reading. Sentence 3) presents a completive view of the situation, and conveys a perfective meaning. Therefore, the past tense is also referred to as the perfective past.

As for the association with lexical aspect, there are no special constraints on the use of perfective aspect with any type of lexical aspects. The progressive form in English describes the on-going process. "In its basic use the English progress focuses on the internal stages of durative, non-stative situations" (Smith, 1991, p. 222). Thus the progressive form is basically durative and dynamic. Activities and Accomplishments, which have both properties of dynamicity and durativity, can be freely encoded with the progressive marker, while States [-dynamic] or Achievements [+punctual], which do not involve process, are rarely associated with the progressive form (Smith, 1991). "When the transitory nature of the state or the preliminary stage of achieving the result is emphasized", a State or an Achievement can occur with the progressive marking (Cai, 2001, p. 6).

Chinese is tenseless (Li & Thompson, 1981) and it conveys past, present or future time by other devices, such as adverbials. However, Chinese is rich in aspect. Perfective markers include *le* (for bounded events) and experiential *guo,* both of which are verb-final. Imperfective markers include the progressive pre-verbal marker*zai*, and post-verbal durative marker *zhe,* and durative and progressive marker *ne* which often occur in colloquial speech (Christensen 1990, as cited in Duff & Li, 2002).

Perfective *le* can only indicate the entirety view of the event but not locate an event in the past and therefore it is not an exact equivalent of English past tense which conflates the past time location and the perfective aspect. English perfective past and perfect aspect can be associated with all verbs while *le* requires an endpoint or boundary in the situation it presents (Li & Thompson, 1981) and thus can only be used to describe bounded events [+telic] (e.g., Achievements and Accomplishments). If provided endpoints by time or quantity nouns such as *wunian* (five years), *yixia* (one time), *le* can occur with States and Activities. For example:

4) a) *Tom ai-le Mary. (State)

Tom love-Perf. Mary. (Tom loves Mary)

b) Tom ai Mary ai-le wunian.

Tom love Mary love-Perf. five years. (Tom loved Mary for five years)

Perfective *guo* is utilized to describe the event having been experienced at least once, and therefore it is called experiential aspect. Since it focuses on the experience of a lexical aspect rather than presents a particular situation, it can occur with any type of aspectual verbs (Cai, 2001).

Progressive marker *zai* and durative *zhe* convey the imperfective meaning. As suggested by their names, *zai* emphasizes the stage-level of the dynamic situation, and so it usually occurs on Activities and Accomplishments; *zhe* presents stative and durative situation as well as progressive situation (Duff & Li, 2002) and thus *zhe* is compatible with States and Activities.

Mongolian has both tense and aspect like English, but the Mongolian tense-aspect system is more complicated. Before introducing its tense-aspect system, it is necessary to point out that the sentence structure of Mongolian is SOV like that of Japanese. For example,

5) Tere kereg-i bi meden-e. (Qinge'ertai, 1992, p. 262)

that thing-suffix (objective case) I know-suffix (present tense)

I know that thing.

The voice, aspect, and mood (including tense) of the sentence are reflected by the inflectional verb suffixes which are joined to the verb stem in the successive order. Among them, only tense is obligatory in indicative sentences. The sentence with only the tense suffix is assumed to be the general aspect with zero aspectual morpheme. Similar to English, Mongolian has three tenses—past, present, and future which are marked by two types of suffixes: Tense-bound terminating suffixes (TTS's) and Noun determining suffixes (NDS's) which have a double function (1) to bring a verb into a relationship with the succeeding noun (2) to work as TTS's. The following table presents the suffixes for past, present, and future tenses.

Table 1. Suffixes for past, present, and future tenses in Mongolian (Kullmann & Tserenpil, 1996, p. 184)

Suffixes	Past tense	Present tense	Future tense
True TTS's	*jai/ jei;čai/ čei* *ba/ be* *l-a/ l-e*	*(n-a/ n-e)*	*n-a/ n-e* *(l-a/l-e)*
NDS's as TTS's	*ysan/gsen*	*yay/ deg* *y-a/ge*	*(qu/ kü)*

* Transcription of Cyrillic is used instead of original Cyrillic alphabets.

* Pairs like *jai* and *jei* have the same function but differ in form according to the vowel harmony.

* Suffixes in brackets are not often used.

Both TTS'a and NDS's relate to all three persons in singular and plural and have no special person endings, except for past tense markers *jai, jei/čai, čei*which are not used for the first person. *jai, jei/čai, čei* are usually used to describe actions that happened suddenly and unintentionally. Another past tense marker *ba/be* is often used in written language to describe actions that were witnessed or are finished. In light of this, it presents the completive view of the situation like the perfective past in English.

From the table we can see that there are two pairs of suffixes that can work as double tense markers: *l-a/ l-e* for past tense and future tense*, n-a/ n-e* for present tense and future tense. The usage of *l-a/ l-e* is very complicated, which expresses 1) actions that will begin, 2) actions that have just begun, 3) actions that will complete, and 4) actions that have just completed or are finished. Whether it is the past or future tense marker is judged by the semantic meaning of the verb and adverb in the sentence as well as contexts.

6) Bi saiqansoninnomungši**la**. (Kullmann & Tserenpil, 1996, p. 187)
I recently interesting book read-suffix (past tense).
Recently, I read an interesting book.

7) boto-o jogsčq**la**. (ibid)
rain stop-suffix (past tense)
The rain has stopped.

8) Yü- yüügeičasor**lo-o**. tegünesemenyabuya-a. (ibid)
very soon snow fall-suffix (future tense) that before go
Very soon, it will snow. Let's go before that.

Though *l-a/ l-e* denotes the past and future meaning in Mongolian, English translation may use the future tense, past tense, and present or past perfect. *n-a/ n-e* is used as the present tense marker*,* if itis attached to stative and durative verbs or is used to describe truth, continuous actions at speech time or habitual actions. Otherwise, *n-a/ n-e* is the future tense marker.

NDS's are mainly used in interrogative and negative sentences especially the future tense marker *qu/kü,* but the past tense marker *ysan/ gsen* appears as often as a TTS. The present tense marker *yay/deg*expresses an action of indefinite time (e.g., live, work) or an action that is repeated (e.g., get up early every morning) and *y-a/ge* expresses an action that started in the past and is continuing into the present and thus they present a partial view of the situation. Therefore these two tense markers convey some aspectual meaning and are also referred to as indefinitive/habitual present and continuous present respectively (Qinge'ertai, 1992).

With regard to aspect, besides the semantic lexical aspect of the verbs, Mongolian has two types of aspects: synthetically expressed aspect and analytically expressed aspect (grammatical aspect). Synthetically expressed aspect suffixes are used to express how the action happens: quickly, repeatedly, continuously, completely, etc. They rarely appear at the end of the sentence except *-čiqa/čike* which is often combined with present/past perfect to denote the completive view of the situation. See the following table for the detailed explanation of the meaning and usage of these markers.

Table 2. Synthetically expressed aspect in Mongolian

Aspect suffixes	Meaning	Usage and (literal translation)
-ski (quick aspect)	Actions that happen quickly and in a short time	Often appears with stative verbs i.e. think and active verbs i.e. walk, rest, run. (a little, a bit)
-jana (temporary aspect)	Actions that are to continue for a little while but temporally.	Often occurs with durative verbs i.e. stay, wait and punctual verbs i.e. go out (for a while/ after a while)
-čiqa/čike (completive aspect)	Actions that fully completed.	Often occurs with dynamic verbs i.e. lose a purse, eat my meal, tell, leave. (have …ed)
-l (repetitive aspect)	Actions that are repeated again and again.	Often occurs with punctual dynamic verbs i.e. beat, tick, tap. (keep …doing, again and again)

Table 3. Analytically expressed aspect in Mongolian

Aspect Suffixes	Meaning	Usage
Progressive *-ju/jü+bai*	Action in progress	Often appears with dynamic verbs i.e. walk, play It is the equivalent of English progressive.
Continuous *-ysayar/gseger +bai*	Action that happened and continues up to a certain selected point of time.	Often appears with stative verbs i.e. live, think and dynamic verbs i.e. receive the letter, come from, wait for. When translated into English, patterns *have/has been…ing, still be…ing,* and *will continue to* are often used.
Perfective *-yad/ged +bai*	Action that has been finished or happened.	Often appears with dynamic verbs i.e. become, come, finish, leave. It is the equivalent of English perfect.
Repetitive	Action that happens repeatedly or continues.	Often appears with dynamic verbs. When translated into English, past tense is used often with adverbs *still* and *always*.

Besides the aspect suffixes, Mongolian language expresses some aspects in an analytical way. Analytically expressed aspect is an analogy to English grammatical aspect. Those aspects are all expressed analytically using the verb determinating suffixes and the auxiliary verb *-bai.* Similar to English, Mongolian has obligatory durative imperfective aspect markers: progressive *-ju/jü+bai* and continuous *-ysayar/gsegerbai* and perfective aspect marker *-yad/gedbai*. However, the semantic scope of *-yad/gedbai* is different from that of the English perfective marker. Although it shows an interaction with lexical aspect similar to that of the English perfective, it is also the marker of repetition. Therefore the marker has both perfective and continuous meaning. See Table 3 for the detailed explanation of the meaning and usage of these markers.

Those aspect markers cannot occur alone, but must be combined with any of three tenses: past *jai/jei*, present *n-a/ne,* and future *qu/kü yum.* Other tense markers like*ba/ be* are not so often correlated with the aspect markers except NDS's past tense suffix ysen/gsen. *ysen/gsenbai* is slightly different from perfective *-yad/ged +bai. yad/ged +bai*describes an action that has been finished if joined with the present tense suffix *n-a* or had been finished if joined with the past tense suffix *jai*, but its influence still exists, whereas *ysen/gsenbai* has no such meaning, which is mainly utilized to refer to actions that are not witnessed and learned indirectly. For example,

9) Terekümün man-u- du ire**gsenbain-a**. (Qinge'ertai, 1992, p. 366)
That man our home- suffix (to) come-suffix (present completive)
That man came our home. (The action happened and is finished)

10) Terekümünkejiyeneiiregedbain-**a.** (ibid, p. 325)
that man early come-suffix (present perfect)

That man has been here for a long time.

11) Nada-yiočiqu-du terekümünyabu**ysanbaijai**. (ibid, p. 367)

I-suffix arrive-suffix(time) that man leave-suffix (past completive)

*When I arrived, that man left. (The action happened, and I learned it indirectly)

12) Biöčögedüročiqu-du terekümünire**gedbaijai.**

I yesterday arrive-suffix (time) that man come-suffix (past perfect). (ibid, p. 325)

When I arrived yesterday, that man had come.

In fact, English translation of sentence 11 is not correct. Inappropriate past tense form is used for comparison. The perfective aspect should be used in English translation, given that there is no equivalent usage in English.

In Mongolian, past and perfective markers can be attached to any type of verbs without any systematic restriction. Progressive *-ju/jü+bai* is seldom used with States but continuous *-ysayar/gseger +bai* can occur with any verb except some Achievements like *notice, recognize*. Compared with that of English and Chinese, the association of tense and aspect markers with lexical aspect is less restricted in Mongolian.

3. Methodology

3.1 Research Questions and Hypotheses

Bearing in mind the predictions of the Aspect Hypothesis, the main objective of the research is to observe the acquisition pattern of English tense-aspect morphology by Chinese and Mongolian college students. As to tense-aspect, Chinese and Mongolian are typologically different languages, one of which (Mongolian) is an analogy to the target language—English. The comparison of the similarities and differences between the source and target languages will allow the analysis of language transfer, which is another objective of the study. The hypotheses for the analysis of data from the present study are as follows:

1) Lexical aspect will influence the acquisition of tense-aspect morphology.

a) Learners first associate and use the perfective past marking predominantly with prototypical Achievements/Accomplishments and then extend the association to less prototypical Activities, and finally to States.

b) Learners predominantly use the progressive marking with prototypical Activities and then extend the use to Accomplishments and Achievements.

c) Learners first use the present marking with prototypical States and then spread the use to less prototypical Activities, Accomplishments, and Achievements.

2) Chinese learners and Mongolian learners will perform differently in acquiring English tense-aspect morphology.

3.2 Participants

The participants in this study are Chinese and Mongolian students at two college levels from four intact classes. Mongolian students are English majors in Inner Mongolia University for Nationalities. Chinese learners major in other disciplines: the low-level group comes from the training center of Beijing Foreign studies University; the high-level group from the College English Department of the same university. At the time of investigation, 60 low-level Mongolian learners were in the third semester and 42 high-level learners were in the seventh semester. 38 low-level Chinese learners were in the third semester while 40 high-level learners had a variety of educational backgrounds and prior exposure to English—from third year undergraduates to graduate students, but they attended this class with the aim to pass CET-4 in the near future. Therefore, their English level at the moment of data collection was generally lower than CET-4 corresponding to that of Chinese high-level learners who would take CET-4 in the next semester. As for the low-level groups, Chinese learners began to learn English since they entered the junior middle schools while most Mongolian learners began to learn English after entering the university. Since Mongolian learners major in English, they had around 30 class-hours English instructions a week, whereas Chinese learners had 4-5 class-hours a week. All participants in the low-level groups spent approximately 1500 hours studying English.

However, calculating the overall hours of receiving formal English instruction is not an absolute measure of defining proficiency levels given that the amount of time spent on learning English after class can not be calculated. The scores of the cloze passage test were finally used as criteria to choose 120 pieces of data which represent the same proficiency level between the comparison groups at each level.

3.3 Instruments and Materials

The cloze-type fill-in-the-blanks task used in the study contains a total of 70 target items and 2 distractors testing model verbs that are not under investigation in this study. The contexts for the cloze text are based on four different short passages extracted from New Concept English Book 2. The base form of the verb is given in the bracket. Most verbs are tested in the third person singular environment so that the overt morphological marking would be obligatory in the past as well as in the present. A sample test item is given in Example 13.

13) My friend, Tom, ____ always ____ (be) fat, but things ____ (get) so bad recently that he ____ (decide) to go on a diet.

Most words in the passages are familiar lexical items and possible new words or phrases are provided with translations in the brackets (see Appendix A).

Employing the cloze passage as an elicitation method can not only provide the even number of tokens across each aspectual class compared with unguided production, but also make working with larger groups of learners possible.

Besides, written narrative compositions are used as supporting evidence, which can be used to account for contradictory findings that may be caused by different elicitation methods. The topic of the composition is about an unforgettable event, which provided learners the context relating the past events in the order of occurrence to their present thinking. It is a rich source of instances of present and past tense use.

3.4 Procedure

The data collection was manipulated by their English teachers during regular class hours. All subjects received a packet, including one page fill-in-the-blanks task, one page written narratives task, one page answer sheet for the fill-in-the-blanks task, and one blank page for the composition. They then performed the following tasks within approximately 70 minutes:

Task 1: filling the blanks with the appropriate tense-aspect forms of verbs in the blanks.

Task 2: writing a 120-150-words composition about an unforgettable event.

The answer sheets as well as papers were collected in case the answers of the fill-in the blanks were provided in the wrong order.

According to the number of correct use of these verbs in the fill-in-the-blanks task, 120 pieces of data were selected from 180 papers in four intact classes. 30 pieces of data in each group were chosen from three ranges: Range 1, verb morphology scores between 30-39; Range 2, verb morphology scores between 40-49; Range 3, verb morphology scores between 50-59. In each low-level group, 11 pieces of data were selected from Range 1, 14 from Range 2, and 5 from Range 3. In each high-level group, 2 pieces of data were selected from Range 1, 16 from Range 2, 12 from Range 3. Thus, the current 120 samples were drawn from 180 papers on the ground of ensuring the selected data between comparison groups at each college level representing the same proficiency level.

5 compositions in each group were randomly selected from 120 subjects whose fill-in the blanks had been chosen as data to be analyzed.

3.5 Classification of Verbs

In studies investigating the correlation of lexical aspect with the verbal morphological ending, verbal classification will decisively affect the research findings. Early studies in SLA are vague about how predicates are classified into aspectual meaning (Shirai & Anderson, 1995) because of the complex nature of the verb constellation and lack of reliable diagnostic tests. Since the verb will interact with other elements in a sentence to determine its lexical aspectual meaning, the same word can be assigned to different categories in different contexts. For instance, the verbal predicate *to walk* may be classified as an Activity in the sentence *He walked in the park*, but as an Accomplishment in the sentence *He walked two miles in the park*. The reason is that the specific object providing an end point for the action (*walk*) changes the telicity of the verb, thereby, changing its composite value of lexical aspect.

With more theoretical discussion of the categories of lexical aspect, many diagnostic tests are available for use in analyzing interlanguage, thus one does not only rely on semantic definitions of verbs to determine verb classification. Following earlier studies (e.g., Andersen & Shirai, 1994; Shirai & Andersen, 1995; Bardovi-Harlig & BergstrÖm, 1996; Bardovi-Harlig, 1998; Housen, 2002), all predicate verbs in the present study are also classified into four aspectual categories—States, Activities, Accomplishments and Achievements according to

the diagnostic test of Shirai& Andersen, (1995, p. 749) and Yang and Huang's (2001) complementary test for telicity (68 verbs under investigation in the fill-in-the-blanks task were identified as 11 States, 19 Activities, 19 Achievements, and 19 Accomplishments).

3.6 Analysis of Data

The previous studies on lexical aspect focused on distribution pattern were to find the correlation between past and Achievements/Accomplishments and between progressive and Activities. It is plausible for many of them to report the percentage of use of tense-aspect morphology without regard to whether the use is correct. The developmental claim of the Aspect Hypothesis predicts that the prototypical association is stronger at earlier stages, and then weakens gradually, and the use of tense-aspect markings is more and more target-like over time. Therefore, the correct use of tense-aspect markings can be employed to account for the developmental stages across different levels. Thereby, both the use and the correct use of tense-aspect morphology were calculated.

The learners' responses in the fill-in the blanks are grouped into categories according to the frequency of using verbal morphology: the simple past includes simple past tense forms and regularized forms such as *maked*; the simple present includes simple present tense and base forms such as (he) *make*; the progressive includes present and past progressive with or without auxiliary; the perfective includes all perfective forms. That whether the verb *dug* which has the same form for the past and base represents the present or past tense is judged by the tense of *show* and *find* in the previous and following sentences because these three acts take place in the chronological order.

Two different analytical methods have been used in the studies on lexical aspect: within-category analysis (Bardovi-Harlig & Bergström, 1996; Robison, 1995; Bardovi-Harlig, 1998; Housen, 2002) and across-category analysis (Rohde, 1996; Shirai & Kurono, 1998; Salaberry, 1999). Bardovi-Harlig's (2000, 2002) comparisons show that the two analyses differ in how they report the rates of use of morphology in different aspectual categories. The within-category analysis exhibits how many tokens of each aspectual category (States, Activities, Accomplishments, Achievements) receive past marking, while the across-category analysis calculates how much past marking is encoded across aspectual categories. She claims that the former is sensitive to the number of tokens produced and the latter is sensitive to developmental effects. The present study, with the aim to explore the developmental changes in the distributional characteristics of verbal morphology, employed the within-category analysis. The across-category analysis was used as alternative account for contradictory findings that may be caused by different analytical methods.

The repeated measure MANOVA was performed to determine whether there was a statistically significant difference in tense-aspect use across the lexical aspectual classes, across level of proficiency and across L1 groups.

4. Results and Analysis

According to the Aspect Hypothesis, during the early stages of tense-aspect morphological development, learners associate and use the past and perfective markings predominantly with Achievements/Accomplishments, the progressive marking with Activities, the present marking with States. At later the stages of development, the initial strong prototypical association is progressively extended first to less prototypical verb types (Activities for past, Accomplishments for progressive, Activities for present) and then to other predicate types. The rate of prototypical association can be the strongest in all four verbal types, but should decline and the rate of non-prototypical association increases compared with the early stages of development. The accuracy rate of both prototypical and non-prototypical association is supposed to increase. The next section will report the results of the study.

The overall results are presented in Table 4. The percentage figures in the table represent the distribution of four forms of verbal morphology within each lexical aspect. In other words, each number represents the portion of tokens that have the past, progressive, present, and perfective markings in the given aspectual classification. The raw tokens and percentage of correct use in the obligatory context are provided as well. For example, in the low-level Mongolian group, 212 verb tokens in the total 330 stative verbs are encoded with past markings. 64.2% use of the past marking is obtained through dividing 212 by 330. 70% correct use is calculated through dividing 167 correct verb tokens by 240 compulsory blanks for the past.

Table 4. Within-category analysis of the distribution of verbal morphology

Group	Form	STA			ACT			ACC			ACH		
		%	n	Cor%	%	n	Cor%	%	n	Cor%	%	n	Cor%
MG1 N = 30	Past	64.2	212	70	55	314	66	78	445	79	71.4	407	80
	Prog	2.7	9	0	25.3	144	45	2.8	16	0	7.1	41	0
	Pres	29.6	98	44	15.2	87	45	9.4	54	33	9.2	53	40
	Perf	3.3	11	0	4.4	25	30	9.6	55	38	12.1	69	35
	Total	100	330		100	570		100	570		100	570	
MG2 N = 30	Past	65.1	215	82	56.4	322	74	80.5	459	85	72.1	411	82
	Prog	1.5	5	0	24.5	140	45	2.1	12	0	5.9	34	0
	Pres	31.8	105	56	15.7	90	66	9.4	54	70	12.4	71	60
	Perf	1.5	5	0	3.1	18	23	7.7	45	33	9.4	54	30
	Total	100	330		100	570		100	570		100	570	
CG1 N = 30	Past	64.5	213	77	69.2	395	76	82.2	469	81	71.4	407	76
	Prog	3.3	11	0	16.1	92	32	0.8	5	0	5.2	30	0
	Pres	31.2	103	54	12.8	73	34	11.9	68	47	14.2	81	45
	Perf	0.9	3	0	1.7	10	0	4.9	28	13	9.1	52	26
	Total	100	330		100	570		100	570		100	570	
CG2 N = 30	Past	71.8	237	86	65.6	374	80	83.6	477	87	68.5	391	80
	Prog	3.3	11	0	13.3	76	29	0.8	5	0	4.3	25	0
	Pres	24.8	82	54	18	103	61	10.7	61	57	14.7	84	70
	Perf	0	0	0	2.9	17	3	4.7	27	21	12.2	70	47
	Total	100	330		100	570		100	570		100	570	

Note. n = raw token frequency; Cor% = the percentage of correct use; MG1 = Mongolian group 1; MG2 = Mongolian group 2; CG1 = Chinese group 1; CG2 = Chinese group 2; Pro = progressive; Pres = present; Perf = perfective.

4.1 The Spread of Perfective Past

The results show that subjects associate and use the past and perfective markings more frequently with telic verbs (Achievements and Accomplishments) than with atelic verbs (Activities and States) in each group, with the exception of learners in CG2 who put slightly more past markings (3.3%) on States than on Achievements. The overall range of percentage figures across lexical aspect classes varies slightly across proficiency levels. Generally, the past marking use shows increasing trend across proficiency levels, whereas high-level learners use less perfective markings than low-level learners. As for different language groups, curiously, Chinese learners show a higher rate of past marking use and correct use than Mongolian learners. On the other hand, Mongolian learners use more perfective markings than Chinese learners and the rate of correct use is much higher. In order to test the statistical significance of these differences the raw scores of past and perfective marking use in the cloze test were submitted to MANOVA. The experiment was based on a 4 x 4 factorial design: four levels of aspectual class x four groups (two levels of English proficiency and two L1 groups). Table 5 and 6 show the results of the MANOVA tests.

Table 5. MANOVA test of past marking use

Source	Sum of Squares	df	Mean Square	F	Sig.
Lexical aspect	4179.742	3	1393.247	459.988	.000
Groups	82.875	3	27.626	3.542	.017
Interaction	134.708	9	14.968	4.942	.000
Error	1958.8	116	16.886		

Table 6. MANOVA test of perfective marking use

Source	Sum of Squares	df	Mean Square	F	Sig.
Lexical aspect	244.917	3	81.639	108.354	.000
Groups	25.133	3	8.378	5.201	.002
Interaction	8.883	9	.987	1.310	.230
Error	549.067	116	4.733		

The results of MANOVA tests reveal significant main differences in the past and perfective marking use across lexical aspect ($F(3,116) = 459.988$, $p = .000 < .05$ and $F(3,116) = 108.354$, $p = .000 < .05$). For the past marking, though Accomplishments always show greater use than Achievements throughout (at least 5.6% for MG1, at most 15.1% for CG2), such a distinction is not apparent in correct use (3%-7% and with Achievements in the lead in one group—MG1). In addition, the percentage of obligatory past contexts for Achievements is 10.5% less than that for Accomplishments. Therefore, Achievements and Accomplishments do not differentiate in the past marking use. Contrary to the prediction of the Aspect Hypothesis, Activities show much lower use and correct use of past, even lower than States except GC1 in which only the rate of use is 5.3% higher than States.

For the perfective marking, separate stages of development for Achievements and Accomplishments are observed with greater use on Achievements: 12.1%-9.6% for MG1, 9.4%-7.7% for MG2; 9.7%-4.9% for CG1, 12.2%-4.7% for CG2. The percentage of using the perfective marking with Activities and States is lower than with telic verbs, with Activities in the lead, which is obviously consistent with the Aspect Hypothesis.

Though, the results of MANOVA tests in Table 6 and 7 show that main differences for four groups are significant in the past marking use ($F(3,116) = 3.542$, $p = .017 > .05$) and in the perfective marking use ($F(3,116) = 5.201$, $p = .002 > .05$), the differences between proficiency groups are not significant in the Tukey HSD post hoc analysis ($p = 1.000 > .05$ for Chinese groups and $p = 0.699 > .05$ for Mongolian groups in the past marking use; $p = .990 > .05$ for Chinese groups and $p = .148 > .05$ for Mongolian groups in perfective marking use), which indicates that the hypothesized spread from prototypical association (Achievements/Accomplishments for past and perfective) to non-prototypical association across proficiency levels is not attested. The percentage figures of past marking use in Table 4 show that the use of past markings with Accomplishments and Achievements strengthens as learners' proficiency level increases except with Achievements (slightly weaken) in Chinese groups, which goes against the developmental claims of the Aspect Hypothesis.

However, at the same time, non-prototypical association (Activities and States for past) becomes stronger as well which is in line with the developmental claims of the Aspect Hypothesis excluding the association of past markings with Activities for the Chinese groups. In addition, in view of the rate of correct use of the past marking, which increases with the proficiency level in each group and the gap between telic verbs and atelic verbs narrows conspicuously, for example, in MG1 the accuracy rate for States, Activities, Accomplishments and Achievements is 70%, 66%, 79% and 80%, in MG2 86%, 80%, 87% and 80% respectively, we can claim that the level of proficiency influences tense use though there are no significant differences between proficiency groups.

The Tukey HSD post hoc analysis for groups confirms the significant differences between low-level L1 groups in both the past marking use ($p = .034 < .05$) and the perfective marking use ($p = .003 < .05$) whereas the differences between high-level L1 groups are not significant ($p = .386$ and $p = .679$ respectively). Their performances differ in two aspects. Contrary to our expectation, Mongolian groups with tense in their L1 exhibit less advantage in both use and correct use of the past marking across aspectual categories over Chinese learners without tense in their L1, except for Achievements. On the other hand, for the perfective marking, Mongolian learners are superior in the rate of both use and correct use across aspectual categories to Chinese learners excluding Achievements in MG2, though both languages have rich aspect systems. Such superiority is particularly obvious in the accuracy rate of perfective marking use for Activities, Accomplishments and Achievements: in the low level groups 30%-0%, 38%-13%, 35%-26%, in the high level groups 23%-3%, 33%-21%, 30%-47% (an exception).

4.2 The Spread of Progressive

In each group the association of progressive markings with Activities is at least 9% and at most 23% stronger than other aspectual categories. Achievements show 1/3-1/4 the use of the progressive shown in Activities but a higher use of the progressive than Accomplishments (at least 3.5% higher) which exhibit the same low level of progressive marking use as States (less than 3.3%). A repeated MANOVA reveals (see Table 7) that there is a

significant difference in the progressive marking use across lexical aspect ($F(3,116) = 221.088$, $p = .000 < .05$). Thus the prototypical association of progressive markings with Activities is attested. On the other hand, two counterexamples are observed: overextending progressive markings to States (less than 3.3%) and 3.5%-4.4% greater use of progressive markings with Achievements than Accomplishments.

Table 7. MANOVA test of progressive marking use

Source	Sum of Squares	df	Mean Square	F	Sig.
Lexical aspect	972.342	3	324.114	221.088	.000
Groups	44.425	3	14.808	6.036	.001
Interaction	72.492	9	8.055	5.494	.000
Error	794.734	116	6.851		

Similar to that of past and perfective marking use, though the significant differences exist between groups ($F(3,116) = 6.036$, $p = .001$), a Tukey HSD post hoc analysis reveals that there are no significant differences between proficiency groups ($p = .880 > .05$ for CG1-2 and $p = .912 > .05$ for MG1-2). Though the prototypical association of progressive markings with Activities is weakened as learners' proficiency level increases, it cannot be interpreted as supporting evidence for the developmental prediction of the Aspect Hypothesis since the accuracy rate of progressive marking use remains constant for Mongolian groups and slightly declines (3%) for Chinese groups.

Instead, the significant differences between groups lie in L1 groups ($p = .024 < .05$ for low-level groups and $p = .019 < .05$ for high-level groups). Mongolian learners are more likely to use the progressive marking than Chinese learners and the rate of correct use is higher. In the case of Activities, 25.3% (MG1) and 24.5% (MG2) of them are encoded with the progressive marking and the accuracy rate is up to 45% for both groups, while for Chinese comparison groups, the percentage of progressive marking use is 12.8% and 13.3% and the accuracy rate is 32% and 29%.

4.3 The Spread of Simple Present

Figures in Table 4 demonstrate that learners in both L1 groups show a clear preference for the use of present marking with States, with about one-third of all verbs in the States category carrying the present marking, followed by Activities (about 15%). Telic verbs (Accomplishments and Achievements, less than 14.7%) are less likely to be encoded with the present marking. With the increase of proficiency level, the association of present markings with four verbal types does not vary greatly: either holding constant (Accomplishments category in Mongolian groups) or slightly strengthening in most cases or weakening (States and Accomplishments categories in Chinese groups). A repeated MANOVA reveals (see Table 8) that there is a significant difference in the present marking use across lexical aspect ($F(3,116) = 27.660$, $p = .000 < .05$). The distribution of the present marking exhibits a strong link with States and is affected by the lexical aspect of the predicate.

Table 8. MANOVA test of present marking use

Source	Sum of Squares	df	Mean Square	F	Sig.
Lexical aspect	114.156	3	38.052	27.660	.000
Groups	7.756	3	2.585	.439	.726
Interaction	43.852	9	4.872	3.542	.000
Error	1161.967	116	10.016		

Different from that of past, perfective and progressive marking use, main differences between groups in the present marking use are not significant ($F(3,116) = .439$, $p = .726 > .05$). Thus the spread of prototypical association to non-prototypical association across proficiency levels is not confirmed. However the accuracy rate of present marking use elevates dramatically and even doubles (33%-70% for Accomplishment category in Mongolian groups) except that correct use of present markings with States in Chinese groups remains constant (54%-54%). Taking into account of increasing accuracy rate in the other three aspectual categories, we can claim

that the level of proficiency affects tense use.

Though Chinese learners exhibit a higher rate of present marking use across lexical aspectual categories excluding Activities in the low-level groups and States in the high-level groups, they do not show superiority in the accuracy rate over Mongolian learners.

In sum, analyzing data produced by L1 Chinese and L1 Mongolian learners in the cloze passages presents supporting evidence for the Aspect hypothesis regardless of different L1s. Moreover, MANOVA tests of past and perfective marking use, progressive marking use, and present marking use confirm the significant role of lexical aspect in the acquisition of tense-aspect morphology. The prototypical association: Achievements/ Accomplishments for past and for perfective, Activities for progressive, States for present is observed, but gradual spread from prototypical association to non-prototypical association is not apparently attested. The results of Tukey HSD post hoc analysis for groups do not show the significant differences between proficiency groups. The lines between proficiency groups (CG1 and CG2; MG1 and MG2) in Figure 1-4 almost pattern together.

Counterexamples are observed in both L1 groups: greater use (6.2%-9.2%) and correct use (1%-8%) of past markings with States than with Activities (excluding CG1 in the number of use), overextending progressive markings to States (1.5%-3.3%), preference for the use of progressive markings with Achievements to Accomplishments (3.5%-4.5% higher).

Nevertheless, two different L1 groups exhibit different distribution patterns of verbal inflections. Mongolian learners are superior to Chinese learners in two aspects: 1) they exhibit 0.2%-4.7% higher use of the perfective marking across lexical aspectual categories excluding Achievements in MG2 (2.8% lower) and the accuracy rate is even higher (9%-30% higher) except for Achievements in MG2 (17% lower); and 2) Mongolian learners show a higher use of progressive marking (1.3%-9.2% higher) in all lexical aspectual categories except States and the accuracy rate is 13%-16% higher. On the other hand, Chinese learners show advantage over Mongolian learners in the past marking use across lexical aspectual categories (0%-14.2% higher) excluding Achievements in CG2 (3.6% lower) as well as in the accuracy rate (2%-10% higher) except for Achievements (2%-4% lower). Furthermore, the results of Tukey HSD post hoc analysis for groups attest the significant differences between L1 groups: between the low-level comparison groups in the past and perfective marking use, and between both the low-level and high-level comparison groups in the progressive marking use.

5. Findings and Discussion

The results reinforce the earlier findings regarding the prototypical association between the past marking and Accomplishments, the progressive marking and Activities, the present marking and States. The subjects in each group apply past markers to predicates of Accomplishments and Achievements more than to those of States and Activities. Activities are the only category in which the progressive marking is used to a noticeable extent in four groups. The present marking is strongly correlated with States. Such strong prototypical association lends support to the Aspect Hypothesis.

5.1 Cognitive Accounts for Supporting Evidence

To explain the dependence of tense-aspect morphology on inherent lexical aspect, we can resort to the cognitive accounts: Prototype theory (Andersen & Shirai, 1994, 1996), Relevance Principle (Bybee, 1985) and Congruence Principle (Andersen, 1993; Andersen & Shirai, 1994). According to the two principles, learners will supply a morphological marker to a predicate verb according to the degree of correspondence of the lexical meaning of the verb to the meaning of the marker. This would explain why the past and perfective morphemes are first associated strongly with telic verbs (Achievements/Accomplishments) since the past and perfective morphemes carry the telic and resultative meaning which is most congruent with Achievements/ Accomplishments that are telic, leading to observable results. Activities and States are less congruent with the meaning of past and perfective for lack of sharing features and thereby they are the last two types of verbs to be encoded with the past and perfective markings.

Progressive morphemes involve the meaning of durativity, dynamicity and incompletion, so they would be attached to Activities first that are durative, dynamic, atelic, and then to Accomplishments that are durative and dynamic but telic, and finally to Achievements only having one feature of dynamicity in common with the meaning of progressive morphemes.

In the same vein, present morphemes conveying the meaning of durativity, habituality, genericity and unboundedness would be attached to durative, stative, atelic verbs—States first, and then to Activities having two sharing features of durativity and unboundedness, next to Accomplishments with one common feature of

durativity, and last to Achievements with no common feature.

In the early stages of language acquisition, learners attach past morphemes predominantly to Achievements/Accomplishments, progressive morphemes to Activities and present morphemes to States. In the later stages such prototypical association will gradually spread to non-prototypical association. The rate of prototypical association still remains strong, but the rate of association of verbal inflections with other aspectual categories will increase and the gap between them becomes narrow. These are supposedly predicted by the prototype theory.

5.2 Multi-Factor Accounts for Counterevidence

However, contradictory findings are observed in both L1 groups in the present study: 1) greater use and correct use of past markings with States than with Activities, 2) overextending progressive markings to States, and 3) preference for the use of progressive markings with Achievements to Accomplishments. Explanations are required to determine whether these seemly unrelated and contradictory findings are correct and generalizable.

5.2.1 The Influence of Different Analytical Methods

The first contradictory finding that States show higher use and correct use of past markings than Activities has also been reported in previous cross-sectional studies (Bardovi-Harlig & BergstrÖm, 1996; Bardovi-Harlig & Reynolds, 1995; Collins, 2002, Ayoun & Salaberry, 2008). The former two studies did not differentiate Activities and States and subsumed them under atelic verbs regarding past marking use, so they did not treat it as counterexamples. Collins's replication studies of Bardovi-Harlig and Reynolds (1995) provided the explanation for the higher past marking use with States than with Activities. Collins noted that the less use of past markings with Activities was mostly due to three verbs (snow, dance, and sing) which were acceptable with the progressive marking, and therefore these verbs were encoded with the progressive marking though they were intended to be obligatory past contexts.

Such an explanation does not fit the present scenario since learners in the four groups underused the progressive marking with Activities. If States and Activities are not subsumed under one category—atelic category regarding the past, the reason for such discrepant findings should be provided.

Notice that the percentage of obligatory past contexts for States is 72.7% and 47.3% for Activities. The percentage figures of past marking use on States (64.2%, 65.1% for MG1-2 and 64.5%, 71.8% for CG1-2) and past marking use on Activities (55%, 56.4% for MG1-2 and 69.2%, 65.6% for CG1-2) reveal that learners fail to supply past marking in obligatory contexts much more frequently for States than for Activities. In addition, the across-category analysis that is sensitive to the sheer numbers of tokens produced in a single category exhibits another picture. The percentage figures in the across-category analysis (see Table 9) demonstrate that the past marking use with Activities exceeds the past marking use with States by 7.4%, 7.5%, 8.3%, and 9.2% in MG1, MG2, CG1, and CG2 respectively but is less than the past marking use with Accomplishments and Achievements having the equal total number in each dynamic category (Activities, Accomplishments, Achievements), which is in line with the Aspect Hypothesis.

Table 9. Across-category analysis of the distribution of past marking

Group	Form	SAT		ACT		ACC		ACH		Total	
		%	n	%	n	%	n	%	n	%	n
MG1	Past	15.3	212	22.7	314	32.3	445	29.5	407	100	1378
MG2	Past	15.2	215	22.8	322	32.5	459	29.1	411	100	1407
CG1	Past	14.3	213	26.6	395	31.6	469	27.4	407	100	1484
CG2	Past	16	237	25.2	374	32.2	477	26.4	391	100	1479

Note. n = raw token frequency; MG1 = Mongolian group 1; MG2 = Mongolian group 2; CG1 = Chinese group 1; CG2 = Chinese group 2; Pro = progressive; Pres = present; Perf = perfective.

5.2.2 The Influence of Input on Progressive States Use

The next contradictory finding is that the progressive marking use is not only restricted to Activities and telic verbs, but also overgeneralized to States. Such overgeneralization of progressive markings to States has been reported in many studies (e.g., Bardovi-Harlig, 1998; Bardovi-Harlig & BergstrÖm, 1996; Robison, 1995; Lee,

2001). Bardovi-Harlig (2000) argued that task may influence rates of progressive marking use with States on the basis of empirical study findings that no greater than 3% use of progressive states in oral and written narratives (Bardovi-Harlig & BergstrÖm 1996, Rohde, 1996; Robison, 1995), but a high rate of 7% in cloze passages (Bardovi-Harlig & Reynolds, 1995).

However, with oral narratives data, Housen's (2002) found as great as 32% use of the progressive with States and Rocca (2002) obtained the same high rate of progressive states. What is more important, the present study, using cloze passages, found less than 3.3% use of the progressive with States and in 20 compositions 2 instances of stative progressives were observed. Recent studies prove that overgeneralization of progressive markings to States is not task-dependent. Housen and Rocca attribute learners' producing overextended progressive states to the influence of input and L1 respectively.

It is more plausible to interpret the overextension in this study as the result of transfer from learners' L1s, since durative *zhe* in Chinese and continuous *-ysayar/gseger +bai*in Mongolian, which correspond to the progressive aspect in English, are frequently associated with States. However, the overextension of progressive markings to States by German-speaking learners whose native language has no grammatical aspect in Rohde's (1996) study reminds us that the L1 transfer explanation should not be taken for granted.

A closer data examination shows that among 37 instances of progressive States, 11 instances occur with verb *include* and 10 of them without auxiliary verb *be.* This is due to the preposition *including* that often occurs in the input and the meaning of these two words is same. Careless learners use *including* as predicate verb irrespective of its function.

5.2.3 The Influence of the Sentence Structure on Progressive States Use

Another high frequency progressive State is the verb *show* (13 instances) with auxiliary which is different from the case of *include*. This may be the influence of the sentence structure. In the complex sentences connected by the conjunction *when,* the sentence pattern*subject+pastprogressive+when+subject+simple past* often appear as a fixed pattern which thus draw learners' special attention (Yang, 1997). For example,

14) I was watching TV when the telephone rang.

Alternatively, the sentence (15) is acceptable.

15) When I was watching TV, the telephone rang.

The progressive state *was showing* in the present study occurred in the environment that the predicate verb *examine* in the main clausewas inappropriately encoded with the past marking (12 of 13 instances).

16) The leader of the party (was examining) (ACT) the soil near the entrance to the cave when the machine_____(show) (STA) that there was gold underground.

The impact of sentence structures on the development of tense-aspect morphology has been rarely investigated to date. Empirical studies in this area are needed.

5.2.4 The Influence of L1 on Progressive States Use

Occurrences of other progressive states such as loving (4 instances in Chinese groups), feeling (2 instances in Mongolian groups) can be attributed to L1 influence, since those verbs often appear with durative *zhe* and continuous *-ysayar/gseger +bai*respectivelyin their native languages.

After all, the rate of occurrence of progressive states is rather low (37 instances in 1320 tokens) and exceptions do not outweigh the general tendency, so it will not shake the universal status of the predictions of the Aspect Hypothesis.

5.2.5 The Influence of Verb Classification on Progressive Achievements Use

The last disconfirmatory finding that learners prefer the use of progressive markings with Achievements to Accomplishments is different from the findings of Rohde (1996) and Robison (1995), whose studies showed the association of the progressive marking *-ing* with Achievements was not only higher than with Accomplishments but also higher than with Activities. In Rohde's study the progressive achievements occurred particularly in future contexts, so he interpreted *-ing* as the marker of future tense rather than as the redundant marker of inherent aspect or grammatical aspect, which is the counterexample of the hypothesis. In Robison's study *going to* accounted for the high rate of progressive achievements. In view of the affiliation of progressive markings with Achievements decreases with increasing proficiency level while the association of progressive marking with Activities increases, Robison did not interpret such affiliation as a genuine counterexample.

The present study evidences the prototypical association of progressive marking with Activities, but the

discrepancy is that learners put more progressive markings on Achievements rather than on Accomplishments. Closer data analysis shows that the verb *pass* contributes to the magnitude of the association of progressive markings with Achievements. This is particularly true for the Chinese groups: 13 instances of 30 progressive achievements for the low-level group, 19 instances of 25 progressive achievements for the high-level group. For Mongolian groups, instances of using *-ing* with *pass* is 7 and 5 for each level group. The verb *pass* like *jump, bounce*, and *knock* is punctual, but a line of people passing constitutes a durative situation. These punctual events are combined with other elements of the sentence to convey a notion of repeated passing or jumping. Smith (1997) separates these punctual events from Achievements as the fifth lexical aspectual category—Semelfactives. Semelfactives like Activities have strong correlation with the progressive marking. The results of this study suggest that five-way classification accounts for the English acquisition data much better than four-way classification regarding the progressive marking use.

5.2.6 The Influence of Input on Progressive Achievements Use

Another verb frequently used with *-ing* is *go* as observed in Robison' study (1995): 8 and 7 instances in MG1 and MG2, 4 and 3 instances in CG1 and CG2. This may be due to the high frequency occurrence of verbal phrase *be going to* in the input. Though *be going to* is introduced as a semi-auxiliary phrase denoting the future meaning, the form impresses upon the learner that *go* occurring with *-ing* is acceptable in some contexts. Within limited time, L2 learners at lower proficiency levels tend to use high frequency forms that are easily activated in their mental lexicon without really knowing or controlling the semantics of the morphological forms attached to them (Shirai, in press).

It is worth noting that the association of progressive markings with Achievements (*going, passing, killing,* and aforementioned progressive state *showing*) occurs in the time adverbial clauses introduced by *when* or *as* which calls for more empirical studies on the impact of sentence structures on the acquisition of verbal inflections.

5.3 Cross and Noncross Linguistic Influence Accounts for Different Performances by Different L1 Groups

As English L2 learners, both Mongolian and Chinese learners exhibit a similar tendency to either comply with or deviate from the predictions of the Aspect Hypothesis. Nevertheless, they differ in their performances in encoding the tense marker and the aspect marker.

As mentioned earlier, Mongolian, like English, has both tense and aspect systems, while Chinese is tenseless but rich in aspect. Then, whether Mongolian learners have less difficulty in learning tense markers than Chinese learners is supposed to be the best illustration of L1 transfer. As Eckman (1977) notes in Markedness Differential Hypothesis (MDH) (p. 321):

The area of difficulty that a language learner will have can be predicted on the basis of a systematic comparison of the grammar of the native language (NL), the target language (TL), and the markedness relations stated in universal grammar, such that,

a) Those areas of the TL that differ from NL and more marked than the NL will be difficult.

b) The relative degree of difficulty of the areas of the TL that is more marked than the NL will correspond to the relative degree of markedness.

c) Those areas of the TL that are different from the NL, but are not more marked than the NL will not be difficult.

According to this hypothesis, the differences between TL and NL do not singly account for learning difficulty for the L2 learners but the degree of markedness plays a more important role. For the purpose of the MDH, Eckman (1977, p. 320) defines markedness as: "a phenomenon A in some language is more marked than B if the presence of A in a language implies the presence of B; but the presence of B does not imply the presence of A." Here, "markedness refers to the relative frequency or generality of a given structure across the world's language" (Eckman, 1996, p. 198). To put it simply, there are more constraints on using a marked linguistic structure than using a related unmarked one.

5.3.1 The Influence of Notice and Rote Learning on Tense Marking Use

Comparison of English, Chinese and Mongolian tense and aspect systems show that Chinese has no tense system but English has, so the English tense system is more marked than that of Chinese; Mongolian has two types of tense markers: True TTS's, NDS's as TTS's. Though there are some constraints on the use of different tense markers, the degree of markedness of Mongolian tense corresponds to that of English tense, in view of regular/irregular past tense forms, *be's* and *have's* varying forms with person and tense, and singular/plural person endings in the present tense of English. According to principle A and B of MDH, English tense will be more difficult to learn for Chinese learners and Mongolian learners should do better in tense than Chinese

learners. Contrary to the expectation, Chinese learners show slight advantage over Mongolian learners in the total number of correct use of the past marking: 39 for low-level groups, 29 for high-level groups. For present marking, the total number of correct use in the Chinese groups is 3 more than that in the Mongolian groups. Therefore, L1 transfer is not responsible for such unexpected phenomenon.

According to Slobin (1991), in the initial stages of L2 learning, learners would refer to their L1 for a similar target language system. If they find any similarities, they would use them as a basis for reconstructing the target language system. If they encounter forms in the L2 input that have no apparent correspondence in the L1, they would pay special attention to the unfamiliar forms and employ the rote learning strategies. Noticing the gap between their own grammars and the target grammar, learners would focus their attention on the distinction of past and nonpast. Through exercises the form-meaning association becomes solidified. In addition, learning English in China, both Mongolian and Chinese speaking learners receive formal classroom instruction. Learners are taught the rules about how to distinguish and use the simple past and present tenses at the early stages of learning. Chinese learners accept uncritically and memorized the rules of using and encoding tense markers, while Mongolian learners struggle to compare the similarities and differences between NL and TL. These two reasons work in concert resulting in more correct verb forms supplied by Chinese learners in obligatory past and present contexts.

5.3.2 The Influence of L1 on Perfective Marking Use

However, the performances of both L1 groups in aspect markers can be interpreted as L1 transfer according to the MDH. Since there are the semantic constraints on the use Chinese *–le* that only occurs with telic verbs, the perfective aspect marking is more marked than English equivalents that can correlate freely with any type of verbs. In view of another Perfective *guo* which can occur with any type of aspectual verbs, it is difficult to judge the degree of markedness between Chinese and English perfective markings. Though the Mongolian perfective marker *-yad/gedbai* is also the marker of repetition and *ysen/gsenbai* is mainly utilized to refer to actions that are not witnessed and learned indirectly, similar to that of English there is no semantic constraint on the use of Mongolian perfective markers. In this sense, the degree of markedness of Mongolian perfective markers matches that of English. Nevertheless, the English perfective form is the combination of tense and aspect markers, which makes English perfective marking more marked for Chinese learners than for Mongolian learners for lack or presence of tense in their native languages. This is the reason why Mongolian learners use more perfective markings than Chinese learners and the accuracy rate is higher in Mongolian groups.

5.3.3 The Influence of L1 on Progressive Marking Use

As for progressive aspect marking, the English progressive marking can occur with Activities and Accomplishments freely and with Achievements and States if the stage level is emphasized. The Chinese progressive marker*zai* is the equivalent of English progressive marking, but durative *zhe* is not only compatible with Activities but with States. In this aspect, the progressive aspect in English is more marked than Chinese *zai* plus *zhe.* This is the reason why Chinese learners underuse the progressive marking. Overextending the progressive marking to State *love* also evidences L1 transfer, since *ai-zhe* is acceptable and often used in Chinese.

As described earlier, Mongolian is rich in aspect. Present tense marker *y-a/ge* expresses an action that started in the past and is continuing into the present and thus conveys some aspectual meaning which is also called continuous present and often used in negative and interrogative sentences. Progressive *-ju/jü+bai* is the equivalent of English progressive which often appears with dynamic verbs and continuous *-ysayar/gsegerbai* can occur with any type of verbs except part of Achievements (e.g., *notice, recognize*). The scope of *-ysayar/gsegerbai* is larger than the English progressive, let alone plus *y-a/ge* and *-ju/jü+bai.* Mongolian learners are faced with the task of narrowing down the scope of the *-ysayar/gsegerbai* because in L2 input they cannot find a form that embodies the function of *-ysayar/gsegerbai.* Overuse of progressive markings across lexical categories is also the best illustration of transferring diverse aspect forms corresponding to English progressive form.

Similar to the perfective, the English progressive aspect cannot be encoded singly, but must be combined with one of the three tenses. The correct use of the progressive means that both the tense of auxiliaries and aspect marking should be inflected correctly. The correct form of the progressive is more marked for Chinese learners than for Mongolian learners in whose native language aspect must be combined with tense too. Therefore, Mongolian learners in the present study exhibit superiority over Chinese learners in correct use of progressive forms.

6. Conclusion

The results of the current study demonstrate that the inherent lexical aspect plays an important role in the acquisition of tense-aspect morphology by Chinese and Mongolian learners of English as a second language. The prototypical association of past markings with Achievements/Accomplishments, progressive markings with Activities, and present markings with States is attested irrespective of learners' proficiency levels and native languages. Such a universal tendency is accounted for by the degree of correspondence of the lexical meaning of the verbs to the meaning of the marker.

The developmental changes across proficiency levels are not clearly observed in analyzing data from cloze passages. As Robison (1995) points out that the data in cross-sectional research just "represent the fossilized end-states of a variety of developmental sequences" (p. 366). To genuinely discover the developmental sequences of verbal morphology in interlanguage, longitudinal research employing the tasks of oral or written narratives is needed.

Even though these learners show virtually the same acquisition orders, there is still a strong effect of L1: Mongolian learners exhibiting superiority over Chinese learners in associating and correctly using the perfective and progressive markings, overuse of progressive markings by Mongolian learners, overextending progressive markings to States by both L1 groups. L1 transfer affects the rate of the association of lexical aspect and tense-aspect morphology but not the route of acquisition. The present study provides some insights into L1 transfer in the acquisition of English tense-aspect morphology, but it needs to be further substantiated by future studies of learners with different L1s.

Disconfirmatory findings—greater use and correct use of past markings with States than with Activities and overuse of progressive markings on Achievements demonstrate that interpreting the data should take into account the methodological problems (e.g., elicitation task, within/across-category analysis, verb classification) which may lead to different results; overextending progressive markings to States and learners' preference for the use of progressive markings with Achievements to Accomplishments suggest that the influence of the semantic lexical aspect in the development of SLA tense-aspect morphology interacts with other factors including 1) the learner's first language 2) the sentence structures, 3) input and interaction both in L1 and L2 acquisition. These factors and the factors mentioned by other researchers such as instruction (Shirai, 2002; Bardovi-Harlig, 2000) and individual differences (Shirai, 2002; Rohde, 2002) may determine the degree to which the predictions of the Aspect Hypothesis are met. More research is needed to single out which factors are irrelevant and which factors are important. The most intriguing question for future research is not whether the Aspect Hypothesis holds but under which conditions it may not be supported.

The present study has shown advantage over quite a few similar studies in the sample size (n = 120) and involving two different L1 participants at two proficiency levels. However, there exist some problems that cannot be addressed properly. First, the participants were not selected randomly. The 120 samples were chosen from four intact classes of two universities according to their performances in the fill-in-the-blanks task. Second, Mongolian participants majoring in English and Chinese participants majoring in other disciplines used different textbooks and were instructed in different ways. In addition, their learning experiences were not the same, especially for the Mongolian participants. These variables were not strictly controlled.

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