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Tense-aspect Marking by L2 Learners of English and Native English Speakers: Inherent Lexical Aspect and Unitary vs. Repeated Situation Types

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In second language acquisition studies, it has been observed that learners' use of verb morphology is influenced by inherent lexical aspect. The purpose of this study is to go beyond inherent lexical aspect and investigate how the aspectual distinction between 'unitary' and 'repeated' situation types (Smith, 1997) influences learners' and native speakers' use of verb morphology. The data of this study consist of audio-taped interviews of eight subjects: three native English speakers, and five learners whose native language is Mandarin Chinese. The results reveal that in relation to inherent lexical aspect, both learners and native speakers demonstrate similar skewed distributions of verb morphology in their speech. However, in relation to unitary vs. repeatedsituation types, learners and native speakers demonstrate different patterns in their use of progressive morphology: Native speakers tend to use progressive morphology for describing repeated situations, while learners use it to describe the ongoing, continuous nature of unitary situations. The findings suggest that learners' acquisitional patterns may not be determined exclusively by native input. The prototype account proposed by Shirai & Andersen (1995) provides a feasible explanation for the findings of this study.

INTRODUCTION

In second language acquisition studies, it has been observed that learners' use of verb morphology is influenced by inherent lexical aspect—the temporal features inherent in the lexical meaning of the predicate. That is, there is a strong association between the use of morphological forms and the inherent lexical aspect of the predicate in the early stages of second language acquisition. For example, learners of English demonstrate a strong association between past morphology and predicates with inherent punctuality, and progressive morphology and predicates with inherent durativity. This phenomenon has been referred to as the Primacy of Aspect Hypothesis (Robison, 1990) or the Aspect Hypothesis (Andersen & Shirai, 1996). Since previous research on tense-aspect in SLA has mainly focused on inherent lexical aspect, little is known about the roles of other aspectual features in learners' tense-aspect system. The purpose of this study is to go beyond inherent lexical aspect and investigate how the aspectual distinction between 'unitary' and 'repeated' situation types influences learners' use of verb morphology. Although some researchers have noted that the variable of repeated situation types may play a role in learners' use of tense-aspect morphology (Andersen, 1990; Shirai, 1991; Robison, 1993; Bardovi-Harlig & Reynolds, 1995), no systematic investigation has been carried out. Some researchers, on the other hand, have treated the feature

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of repetition as a determinant of inherent lexical aspect (Brinton, 1988), rather than as an independent parameter of aspectual features. This study suggests that it is important to take into account the unitary/repeated distinction in understanding learners' use of tense-aspect morphology. In order to better interpret learners' data, this study analyzes not only learners' speech but also native speakers' speech. As suggested by Andersen & Shirai (1996) in their Distributional Bias Hypothesis, native speakers also use verb morphology in a biased way according to inherent lexical aspect. Therefore, by including native speaker data, this study provides a more complete picture of how learners differ from native speakers in tense-aspect marking and how native input may be able to account for acquisition patterns.

BACKGROUND

Definitions

Tense relates the time of a situation to some other time, usually the speech time (Comrie, 1976). From the reference point of speech time, a situation may be located prior to (past tense), simultaneous with (present tense), or subsequent to (future tense) the moment of speaking. The following two examples show a difference in tense:

(1a) Mary is running.

(1b) Mary was running.

Example (1a) denotes that the event of 'running' occurs at the moment of speaking while (1b) describes the event of 'running' as prior to the time of speech.

Aspect (more specifically, 'grammatical aspect'), on the other hand, is not concerned with relating the time of a situation to any other time point. Comrie states that "aspects are different ways of viewing the internal temporal constituency of a situation" (p.3). Grammatical aspect is explicitly marked by linguistic devices such as auxiliaries or inflections. The progressive aspect in English, and the perfective/imperfective aspect in languages such as Spanish, Russian, and Greek are examples of grammatical aspect. Grammatical aspect is also called 'viewpoint aspect' (Smith, 1983) because it reflects the speaker's view of the situation. The following examples illustrate a contrast in aspect:

(2a) Mary ran.

(2b) Mary was running.

Both (2a) and (2b) are in past tense. However, in (2a), the speaker takes an external view of the event; the action of 'run' is seen as a completed event. In (2b), the speaker takes an internal view of the event; the process or a phase of the action is described.

Inherent lexical aspect, also called 'situation aspect' (Smith, 1983), refers to the temporal features inherent in the semantics of the predicate. Thus *run* is

inherently durative and *jump* is inherently punctual.

Vendler (1967) proposed a four-way classification of inherent lexical aspect; the four categories are state, activity, accomplishment, and achievement. This distinction is based on temporal properties of predicates, as described below (Shirai & Andersen, 1995, p.744):

> ACHIEVEMENT: that which takes place instantaneously, and is reducible to a single point in time (e.g., *recognize, die, reach the summit,* etc.).
> ACCOMPLISHMENT: that which has some duration, but has a single clear inherent endpoint (e.g., *run a mile, make a chair, build a house,* etc.).
> ACTIVITY: that which has duration, but with an arbitrary endpoint, and is homogeneous in its structure. For example, in *John is running*, at every moment thefact of this running has the same quality of running (e.g., *run, sing, play, dance,* etc.).
> STATE: that which has no dynamics, and continues without additional effort or energy being applied (e.g., *see, love, hate, want,* etc.).

The four categories can also be distinguished by the semantic features of 'punctual', 'telic' and 'dynamic', as shown in Table 1 (Shirai & Andersen, 1995, p.744). 'Punctual' denotes a single point, having no duration; 'telic' denotes the existence of an inherent endpoint, and 'dynamic' denotes that energy is required for the situation to exist or continue.

Table 1. Semantic Features for Vendler's Classification of Inherent Lexical Aspect

	STATE	ACTIVITY	ACCOMPLISHMENT	ACHIEVEMENT
Punctual	-	-	-	+
Telic	-	-	+	+
Dynamic	-	+	+	+

Repetition is also treated as a determinant of inherent lexical aspect by some researchers. For example, Brinton (1988) defines habitual activities as a fifth aspectual category, 'series', which she adds to the four categories of Vendler (1967). In this study, however, repetition is regarded as an independent variable which is separate from inherent lexical aspect. Inherent lexical aspect and repetition are considered variables of different levels. Inherent lexical aspect belongs to what Smith (1997) calls the 'basic situation types', which involve the internal temporal features of a verb constellation (a verb and its arguments); repetition , on the other hand, belongs to her 'derived situation types', which involve situation type shifts triggered by adverbials or other information from context. Since the feature of repetition is analyzed at a different level, inherent lexical aspect in this study pertains to the temporal features of a predicate in its unitary and uninflected

form. In other words, factors which trigger an interpretation of repetition are not considered at the level of inherent lexical aspect. Such factors include temporal adverbials, plural subjects/objects, tense-aspect markers and other contextual information. These factors, however, are taken into account at the level of derived situation types for the unitary/repeated distinction. Consider the following examples:

(3a) He jumped.
(3b) He was jumping.
(4a) He rode his bicycle.
(4b) He rode his bicycle on Fridays.
(5a) He painted a house.
(5b) He painted houses.
(6a) He fell. (A reply a mother gave his husband about why their son was sitting on the ground crying)
(6b) He fell. (A reply a mother gave a doctor about what happened in the last several months every time her son tried to walk.)

In the four pairs of examples given above, inherent lexical aspect is the same in each pair. After removing the past and progressive markers, both (3a) and (3b) are achievements in their unitary, uninflected form; in the same way, both (4a) and (4b) are activities when not considering the effects of the past markers and the temporal adverbial 'on Fridays'; both (5a) and (5b), on the other hand, are accomplishments after removing the past markers and the plurality of the object 'houses'; both (6a) and (6b) are achievements when excluding the pragmatic information.

However, each pair is different in terms of the unitary/repeated distinction because of the aspectual values contributed by the various contextual factors. Example (3a) denotes a unitary situation, while Example (3b) denotes an iterative situation with the presence of the progressive marker. Example (4a) expresses a unitary activity, but the adverbial 'on Fridays' in (4b) adds a repeated meaning to the situation. In (5a) the predicate is telic and unitary, but it behaves as an atelic, habitual predicate when it is given an indefinite plural object as in (5b). In (6a) the event is interpreted as a unitary punctual event according to the pragmatic information, but the same clause is interpreted as a habitual event in (6b), with the pragmatic information provided.

Repetition is used here as a cover term for 'iterative' and 'habitual'. The difference between iterative and habitual is that iterative refers to repetition on a single occasion while habitual refers to repetition on different occasions (Brinton, 1988). Therefore, 'He was jumping' is iterative while 'He rode his bicycle on Fridays' is habitual.

Previous Studies

Recent studies on the Aspect Hypothesis in L2 acquisition have investigated both uninstructed and instructed learners and have used various elicitation tasks including oral and written narratives, written cloze passages and judgment tasks (see Bardovi-Harlig, 1999, for a review). These studies in general support the claim that a learner's use of tense-aspect morphology is influenced by inherent lexical aspect. English L2 data generally show that past morphology is strongly associated with achievements and accomplishments, and progressive morphology with activities (Bardovi-Harlig, 1998; Bardovi-Harlig & Bergstrom, 1996; Bardovi-Harlig & Reynolds, 1995; Robison, 1990, 1995).

The Distributional Bias Hypothesis has also been supported by studies of native speakers' speech, including speech to other native speakers and to L1 and L2 learners (i.e., Ramsay, 1989; Shirai, 1990, 1991; Stephany, 1981; see Andersen & Shirai, 1996, for a review). That is, native speakers (NS) also demonstrate a strong relationship between verb morphology and inherent lexical aspect. In addition, it has also been observed that learner-directed speech is more consistent with the Distributional Bias Hypothesis than is NS-NS discourse (Stephany, 1981).

Both the Aspect Hypothesis and the Distributional Bias Hypothesis concern inherent lexical aspect. The issue of repetition as a parameter in the acquisition of tense-aspect has not been investigated systematically. Although in Robison (1993), predicates were coded for iterative and habitual, the coding was solely as a check on the relative proportion of habitual, iterative and unitary contexts. Andersen and Shirai (1994) discussed iterative and habitual situations; they pointed out that learners frequently mark unitary telic events with past morphology, but in the same past-anchored episode, verbs which refer to habitual situations may go unmarked. No quantification, however, was conducted in Andersen and Shirai (1994) to support the claim. Bardovi-Harlig and Reynolds (1995), on the other hand, showed that when adverbs of frequency are present in a past context, the rate of learners' use of simple past tense falls and their use of nonpast increases. The authors suggest that learners associate the notion of habitual situations with present tense.

RESEARCH QUESTIONS

This study attempts to analyze how aspectual features influence learners' and native speakers' use of verb morphology. Unlike previous studies, this study examines not only inherent lexical aspect but also the feature of repetition. The purpose is to go beyond inherent lexical aspect in order to better understand the influence of aspectual features at different levels. As mentioned above, both learner and native speaker data will be examined. The research questions of this study are as follows:

(i) How do learners and native speakers use verb morphology with respect to inherent lexical aspect?

(ii) How do learners and native speakers use verb morphology with respect to the unitary/repeated distinction?

METHODS

Data

The data of this study consist of audio-taped interviews of eight subjects: three native English speakers, and five learners whose native language is Mandarin Chinese. Each interview lasted about 60-90 minutes. These interviews were conducted in a similar format and covered similar topics. The learners were from 25 to 35 years old, with college or higher education. Three of them are from Taiwan, and the other two are from China. The length of their residence in the United States was from 6 months to 1 year. The years of ESL instruction they had received ranged from 6 to 8 years. The three native speakers were 20 to 40 years old. Two of them have a high school education, and the other has a college education. The three native speakers were born in California, New York and Florida respectively.

Analysis

In the transcribed interview data, all the clauses with finite main verbs which were marked with past morphology or progressive morphology were selected for analysis. Each selected clause was given two levels of coding: inherent lexical aspect and repetition. In coding inherent lexical aspect, grammatical tense-aspect markers were removed from the clause. Contextual factors which trigger a repeated interpretation were also excluded. Each uninflected unitary predicate was then analyzed to determine its inherent lexical aspect by following the operational test developed by Shirai (1991).

In coding the unitary/repeated distinction, each clause was analyzed in terms of its interpretation in the discourse context, including the information contributed by temporal adverbials, plurality of the subject/object, tense-aspect morphology and pragmatic information. Each clause was coded as either Unitary, Iterative or Habitual, depending on whether repetition is involved in the interpretation and whether repetition occurs on one single occasion or on different occasions .

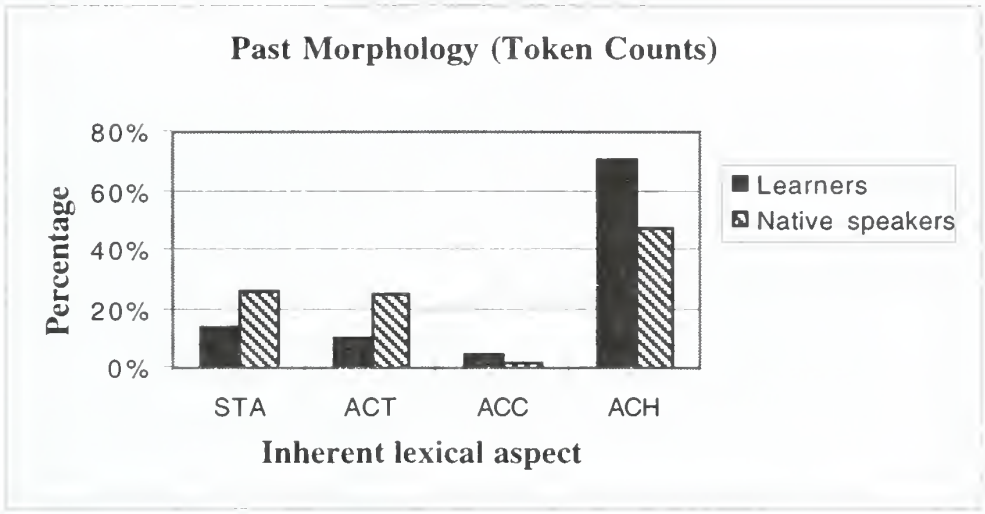
Both token counts and type counts were conducted. In token counts, each occurrence of a predicate was counted separately. In type counts, all occurrences of the same predicate were counted only once. For example, if a speaker produces the utterance 'I got up' twice in the data, the two occurrences were counted as two tokens, but one type. The purpose for the type counts is to check whether some predicates occur repeatedly with disproportionate frequency, and distort the distribution of token counts.

RESULTS

Inherent Lexical Aspect

Figure 1 and Figure 2 display the association between past morphology and inherent lexical aspect. Figure 1 shows the results of token counts; all the tokens of the predicates which were marked with past morphology were classified into Vendler's four categories of inherent lexical aspect. The total number of the tokens analyzed is 396 in learners' speech and 434 in native speakers' speech. Figure 2, on the other hand, shows the type counts: predicates of different types were classified into the four categories. The total number of the types is 157 in learners' speech and 181 in native speakers' speech.

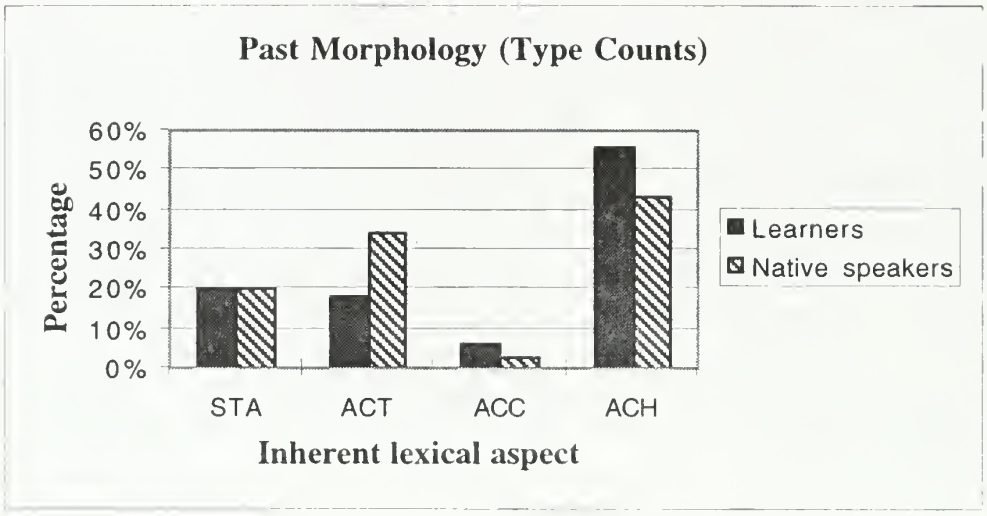
Figure 1. The association between past morphology and inherent lexical aspect (token counts)



STA stands for stative; ACT stands for activity; ACC stands for accomplishment, and ACH stands for achievement.

The number of tokens: Learners, n=396; Native speakers, n=434

Figure 2. The association between past morphology and inherent lexical aspect (type counts).

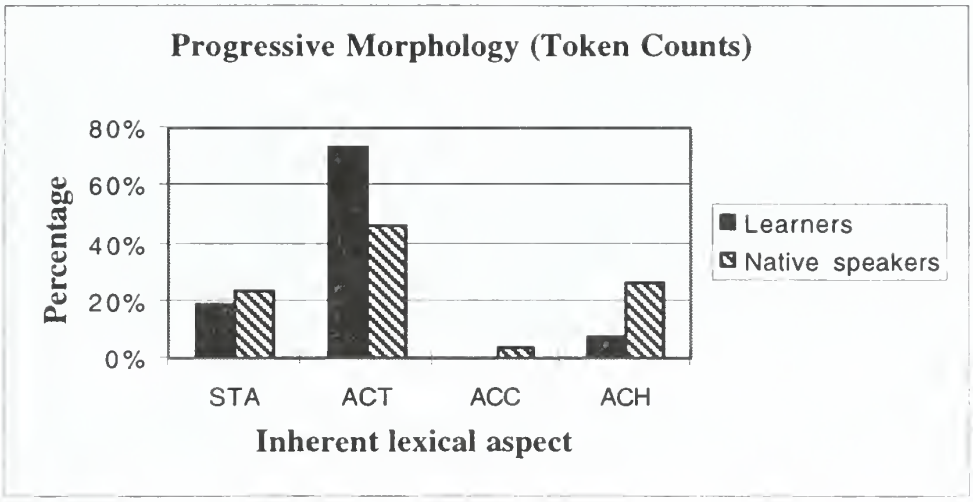


The number of types: Learners, n=157; Native speakers, n=181

As seen in the two Figures, the distributions are skewed toward achievements in both learners' and native speakers' speech. Thus, both learners and native speakers use past morphology most frequently with achievements. In token counts, the percentage of achievements is 71% in learners' speech and 47% in native speakers' speech. In type counts, it is 56% in learners' speech and 43% in native speakers' speech. While both learners and native speakers demonstrate skewed distributions toward achievements, the skewing in native speakers' speech is less dramatic.

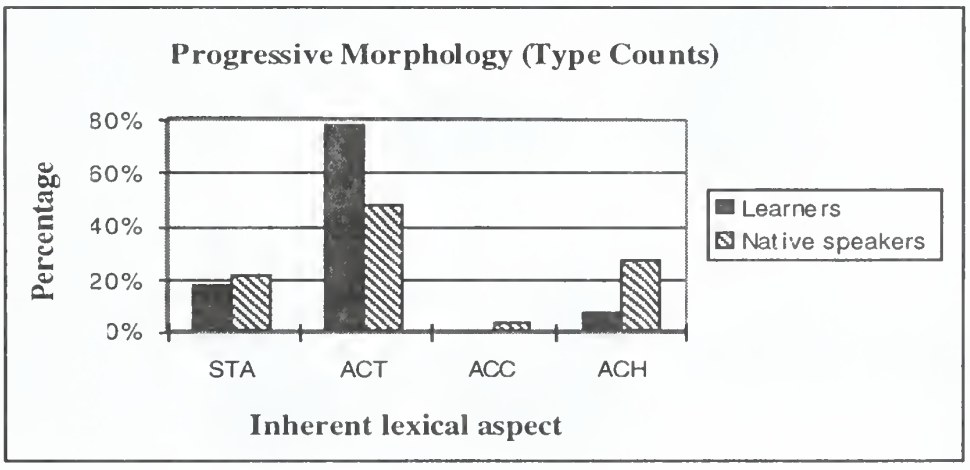
Figure 3 and Figure 4 show the association between progressive morphology and inherent lexical aspect. Figure 3 presents the token counts of the progressive-marked predicates across the categories. Figure 4, on the other hand, displays the distributions of the different types of progressive-marked predicates. As seen in the two figures, both learners and native speakers use progressive morphology predominantly with activities. In token counts, the percentage of activities is 73% in learners' speech and 46% in native speakers' speech. In type counts, it is 76% in learners' speech and 49% in native speakers' speech. These results also reveal that the distributions are less skewed in native speakers' speech than in learners' speech.

Figure 3. The association between progressive morphology and inherent lexical aspect (token counts).



The number of tokens: Learners, n=89; Native speakers, n=138

Figure 4. The association between progressive morphology and inherent lexical aspect (type counts).



The number of types: Learners, n=69; Native speakers, n=105

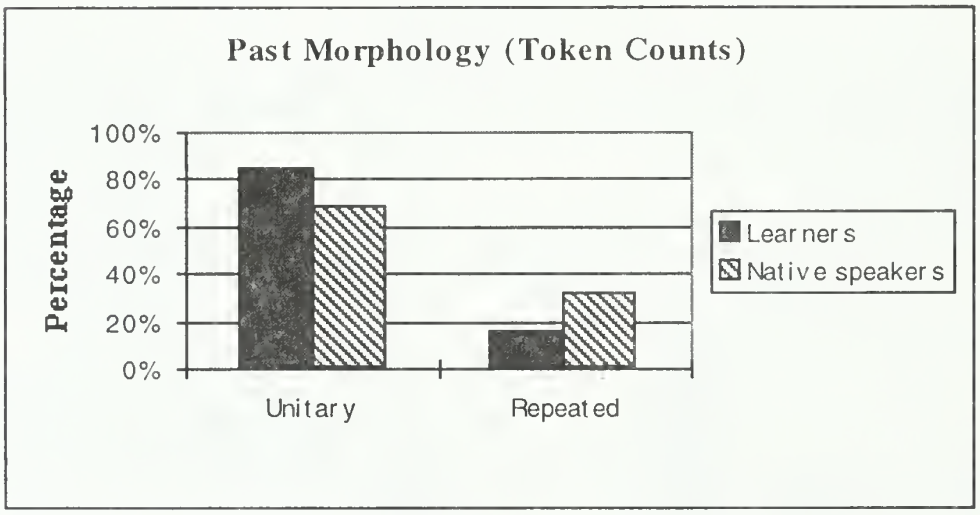
As shown in the above four figures, the associations between verb morphology and inherent lexical aspect support both the Primacy of Aspect Hypothesis and the Distributional Bias Hypothesis. That is, learners tend to associate past morphology with achievements and progressive morphology with activities; native speakers

demonstrate similar but weaker associations.

Unitary/Repeated Situation Types

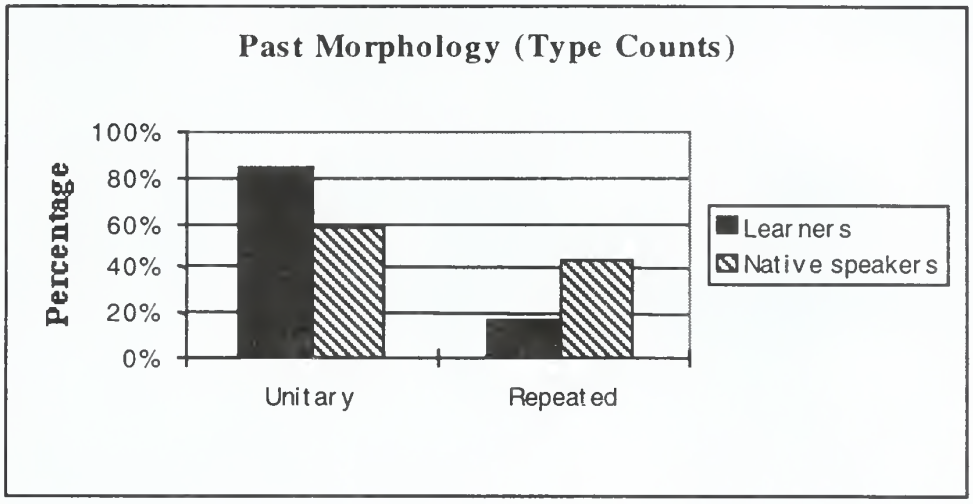
Figure 5 and Figure 6 present the association between past morphology and the unitary/repeated distinction in token and type accounts. In Figure 5, all the tokens of past-marked predicates were classified into the category of 'unitary' or 'repeated' according to whether repetition is involved in the interpretation. Figure 6, on the other hand, shows the distribution of the past-marked predicates in type counts. In the two figures, we see that both learners and native speakers use past morphology mostly for denoting unitary situations. In token counts, the percentage of unitary situations is 85% in learners' speech and 69% in native speakers' speech. In type counts, it is 83% in learners' speech and 57% in native speakers' speech. As we compare learners' and native speakers' speech, we note that the use of past morphology in native speech is less restricted to unitary situations.

Figure 5. The association between past morphology and repetition (token counts).



The number of tokens: Learners, n=396; Native speakers, n=434

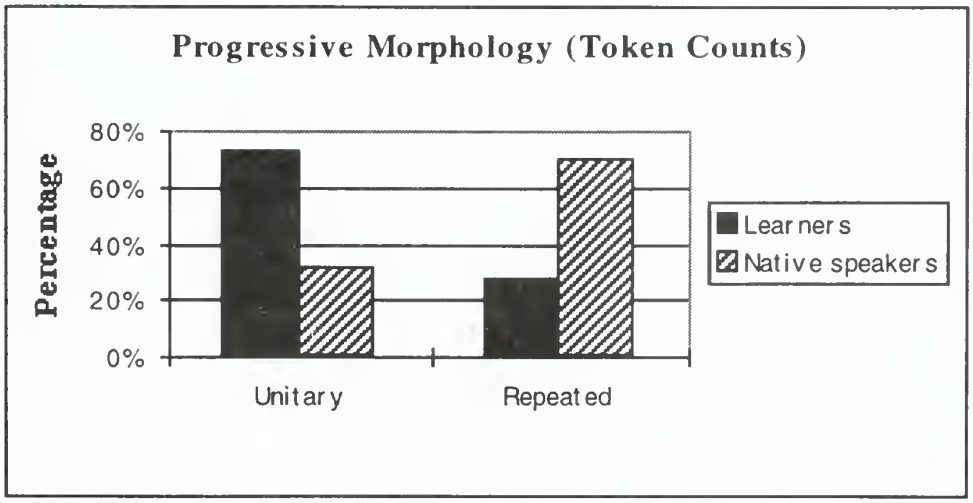
Figure 6. The association between past morphology and repetition (type counts).



The number of types: Learners, n=157; Native speakers, n=181

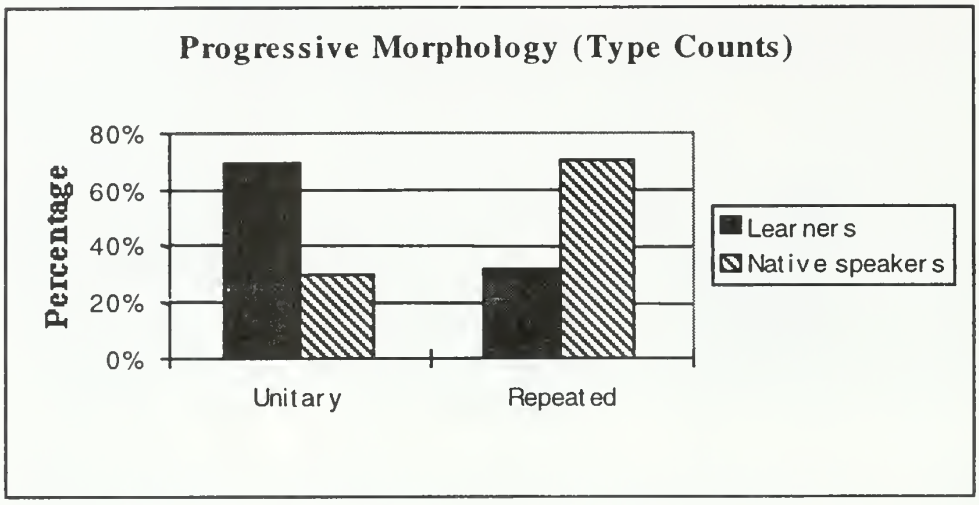
The above results display similar skewing patterns in learners' and native speakers' speech. However, in Figure 7 and Figure 8 below, the distributional patterns observed are different in the two groups.

Figure 7. The association between progressive morphology and repetition (token counts).



The number of tokens: Learners, n=89; Native speakers, n=138

Figure 8. The association between progressive morphology and repetition (type counts).



The number of types: Learners, n=69; Native speakers, n=105

Figures 7 and 8 show the association between progressive morphology and the unitary/repeated distinction. In Figure 7, all the tokens of progressive-marked predicates were classified into the category of 'unitary' or 'repeated'. Figure 8, on the other hand, shows the distribution of the progressive-marked predicates in type accounts. In the two figures, we see that learners tend to relate progressive morphology with unitary situations. Native speakers, in contrast, tend to relate progressive morphology with repeated situations. In token counts, the percentage of unitary vs. repeated is 73% vs. 27% in learners' speech, but it is 31% vs. 69% in native speakers' speech. In type counts, it is 70% vs. 30% in learners' speech, but it is 31% vs. 69% in native speakers' speech. In other words, learners and native speakers demonstrate opposite skewing patterns in their use of progressive morphology.

The use of progressive morphology in describing unitary situations focuses on the continuous, ongoing nature of a situation. As seen from the results, learners mainly relate progressive morphology with this meaning. The following examples are from learners' speech:

(1) L#4:
1 afternoon
2 so now he's work -
3 he's *working* at his factory
(=It's afternoon, so she is now working at the factory.)

The learner was telling the interviewer that his wife was working at the factory at the moment of the interview. The situation in line 3 is unitary, and the verb

working is describing a continuous, ongoing activity. The adverb *now* also contributes to this continuous, ongoing interpretation.

The next example is about an accident which happened when the learner was small. In the accident, the learner hurt her sister's ear with a pair of scissors.

(2) L#1:

1 I was play the scissor
2 and I think
3 she's *laughing* something
4 so that he close - close to me then
5 my sister would hurt his ear a little bit

(I was playing with a pair of scissors. I think she was laughing about something. She came close to me and then my sister hurt her ear a little bit.)

In this example, the learner was describing a unitary event in the past. The progressive-marked verb *laughing* in line 3 also denotes a continuous, ongoing meaning.

In contrast to learners, the results indicate that native speakers use progressive morphology frequently for describing repeated situations. The following examples illustrate how progressive morphology is used by native speakers:

(3) N#3:

1 I get the Culver City paper
2 and ah they're always *talking* about crimes
3 that are everywhere else
4 so I - I guess
5 we're pretty clean up till now

In the above example, the native speaker was commenting that her neighborhood was safe because the newspapers she read were always reporting crimes in other places, but not in her neighborhood. In line 2, the situation is considered to be repeated. That is, when the speaker read newspapers on different occasions, she found that the papers always reported crimes happening elsewhere. The repeated interpretation comes from the temporal adverb 'always', the progressive marker in the verb 'talking', and the plurality of the object 'crimes'. These factors contribute to the repeated interpretation of the situation.

In the next example, the native speaker was asked what he thought his life would be like in ten years.

(4) N#1:

1 ten years
2 let's see
3 hopefully I'll still be *making* records and *touring*

The native speaker, who was a musician, was talking about what he hoped he would be doing in ten years. From the context, it is obvious that 'making records' and 'touring' refer to repeated situations on different occasions. The repeated interpretation comes from the progressive marker in 'making' and 'touring', and the plurality of the object 'records.

As seen from Figure 5 to Figure 8, learners' use of past morphology and progressive morphology demonstrate a skewed distribution toward unitary situations. In the analysis of past morphology, native speakers also demonstrate a skewed, but less dramatic, distribution toward unitary situations. However, in the analysis of progressive morphology, a different pattern was observed. Native speakers tend to use progressive morphology for describing repeated rather than unitary situations.

DISCUSSION AND CONCLUSION

The results of this study reveal that in relation to inherent lexical aspect, both learners and native speakers demonstrate similar skewed distributions of verb morphology in their speech. The skewed distributions indicate that both learners' and native speakers' use of verb morphology is influenced by aspectual features conveyed by inherent lexical aspect. Thus, the results confirm both the Aspect Hypothesis and the Distributional Bias Hypothesis. As pointed out by Andersen and Shirai (1996), if native speakers use verb morphology in such a biased way as to be consistent with the Aspect Hypothesis, it would not be surprising that learners would manifest a similar bias, since they may be simply modeling native speakers. However, we observed that at the level of repetition, learners and native speakers demonstrate different patterns in their use of progressive morphology. This finding thus reveals that learners' acquisitional patterns may not be determined exclusively by native input.

Shirai (1991), Andersen and Shirai (1994) and Shirai and Andersen (1995) propose a prototype account to explain the acquisition of tense-aspect morphology. The prototype account states that learners initially infer from input the most prototypical meaning of each inflection and associate the inflection with the most prototypical members of each semantic aspect class of verbs. The prototype account explains nicely the findings in this study that learners use tense-aspect morphology mainly with unitary situations rather than with repeated situations. As hypothesized by the prototype account, habitual /iterative past is less prototypical than unitary past, and habitual/iterative progressive is less prototypical than unitary (continuous) progressive. Therefore, learners initially will use past and progressive morphemes mainly with unitary situations and later expand their application to repeated situations. However, since the data show that native speakers use progressive more frequently with repeated situations, it appears that when learners infer the prototypical meaning of an inflection, the frequency in native input may not be the most important factor. Since the prototype account does not provide a principled

way for determining the prototype, the question of how learners determine the prototype needs to be further investigated, especially when the input and the learner data do not match. However, since the native speakers' speech in this study is directed to native speakers rather than to learners, one possibility is that in learner-directed speech, native speakers may in fact use progressive morphemes in a way more consistent with the patterns we observed in learners' speech. In other words, when addressing learners, native speakers may restrict the use of progressive morphemes to more prototypical cases.

Another possible explanation for the pattern observed in learners' speech is the influence of learners' native language. In Chinese, the progressive marker *zai* signals the ongoing, continuous nature of an event. The unitary use of English progressive morphology also denotes an ongoing, continuous meaning. The Chinese learners may form a straightforward mapping between the Chinese progressive marker *zai* and the unitary use of the English progressive marker. In other words, the similar usage of the two markers may direct the learners to relate English progressive morphology with unitary situations although there is a stronger association between progressive morphology and repeated situations in native speech.

The phenomenon that learners and native speakers demonstrate different skewing patterns in their use of verb morphology is also observed in Shirai (1995). In his study, Chinese learners of Japanese use the imperfective marker *-tei* more often with activity verbs to express the meaning of action in progress, while native speakers of Japanese use the marker more often with achievement verbs to denote the meaning of resultative state. Shirai also suggests that L1 influence is among the possible explanations for the skewing pattern observed in learners' speech .

The results have shown that although native input may play a crucial role in directing learners' use of verb morphology, other factors may also contribute to the acquisition of verb morphology. The influence of these factors may in some respects override the influence on native input in some respects of the acquisition of verb morphology.

The different associations between progressive morphology and repetition in learners' and native speakers' speech reveal the importance of going beyond inherent lexical aspect in order to better understand learners' use of verb morphology. If we analyze only inherent lexical aspect, we may conclude that learners and native speakers use progressive morphology in a similar way: they both associate progressive morphology with activity verbs. In fact, native speakers may mark activity verbs with progressive morphology to denote repeated events most of the time, while learners' progressive-marked activity verbs are predominantly used to describe unitary events. This non-native use of progressive morphology can not be observed when we examine only inherent lexical aspect, but it is revealed when we further take into account the unitary and repeated aspectual features.

We have seen in this study that not only inherent lexical aspect but also the unitary/repeated distinction should be taken into account. For further research,it would be interesting to further analyze the repeated situations in terms of the

iterative /habitual distinction. For example, we may find that learners are able to mark iterative achievements with progressive morphology but are less capable of marking habitual activities with progressive morphology. In first language acquisition, the use of habitual progressive is very late in development, while the use of progressive to mark iterative achievements is early (Shirai, 1991). This further analysis will show us whether a similar tendency is also observed in second language acquisition. Moreover, the native data used in this study involve NS-NS discourse. Studies of learner-directed speech are needed to understand whether native speakers use verb morphology in a more restricted way when addressing learners. These types of studies can provide more direct evidence as to whether native input contributes to the skewed distributions of verb morphology in learners' speech.

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