Crosslinguistic influence on Chinese EFL learners’ acquisition of English finite and nonfinite distinctions

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Abstract: English and Chinese have typological differences in finiteness. English has morphological finite and nonfinite distinction, whereas Chinese has no morphological finiteness, and multiple verbs in a clause appear in the form of bare verbs with optional aspectual morphemes, such as the perfective morpheme “le”. The current study explores whether and how the lack of morphological finite and nonfinite distinctions in Chinese influences Chinese EFL (English as Foreign Language) learners’ acquisition of English finite and nonfinite distinctions. The analysis of Chinese learners’ English corpus showed evidence of both morphological transfer of bare verbs and morphosyntactic transfer by over-inflecting nonfinite verbs in English writing. These results evidenced the crosslinguistic influence on Chinese EFL learners’ acquisition of English finite and nonfinite distinctions. The crosslinguistic influence also had an interaction with L2 proficiency, that is, low proficiency learners tended to have both morphological and syntactic transfer whereas with the development of L2 proficiency, syntactic transfer was reduced dramatically while morphology remained to be a problem. It thus revealed Chinese learners’ developmental route and implied their morphological insensitivity.

Subjects: Corpus Linguistics; Grammar; Morphology; Syntax; Language & Education

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PUBLIC INTEREST STATEMENT
The current paper investigates how the difference in the composition of multiple verbs between English and Chinese influences Chinese English as Foreign Language (EFL) learners’ L2 acquisition. English sentences compose finite and nonfinite verbs (e.g., she invited me to sing a song); in contrast, Chinese has no grammaticalized tense and verbs are bare, but there is a verb-final “le” which can mark “completion”. Importantly, “le” can mark the completion of a series of verbs and thus is not the same as English “-ed” even though they share similarity when marking only one verb. Given this subtle difference, we assume that it would cause learnability problems for Chinese EFL learners. Via a corpus-study, i.e., analyzing large amounts of Chinese EFL learners’ written compositions, we found the influence of Chinese bare verbs and “le” and the higher the L2 proficiency, the less influence. It thus revealed the L2 developmental route and have pedagogical implications.
1. Introduction

Finiteness is a central element in sentence composition and is related to tense marking, subject-verb agreement and etc. (Nikolaeva, 2007). Curme (1931) described finiteness as “to the finite forms of the verb, i.e., those limited by person, number and mood, are the infinite forms, i.e., those not thus limited, verbal forms without person, number, and mood.” (p. 8448). Learning finiteness and making a distinction between finite and nonfinite verbs in the second language is important as the acquisition of finiteness leads to a major restructuring of learner language (Klein, 2006, p. 5). And this restructuring is especially difficult for learners whose L1 has typologically different finite and nonfinite distinction from that in the L2.

English and Chinese finiteness are typologically different. English clauses with multiple verbs contain an inflectionally marked finite verb combined with nonfinite forms, which are either to-infinitives (e.g., “to attend”), gerunds (verb root plus -ing), or participles (verb root plus -ed). Nonfinite verbs are neither inflected for grammatical tense nor undergo subject-verb agreement. In contrast, Chinese has neither grammatical tense nor inflections; thus, multiple verbs in comparable constructions are often in the form of bare verbs, and some with aspectual markers. Slabakova (2015) stated that “if a universal grammatical meaning (e.g., plural, definiteness and etc.) is expressed by one configuration in L1 but by another configuration in L2, this learning situation would constitute a morphosyntax-semantics mismatch and would arguably present additional difficulty in L2 acquisition” (p. 283).

This difficulty in Chinese learners’ acquisition of English finite and nonfinite verbs has been observed in previous studies (e.g., Chang, 2005; Fang, 2014; Gisborne, 2009; Yang & Huang, 2009); however, a number of questions remain. Studies on Chinese learner’s acquisition of English MVCs have been limited to error descriptions (e.g., Chang, 2005; Yang & Huang, 2009), frequency of learners’ usage (Fang, 2014), or testing certain theories, i.e., performance or competence deficit (Chang, 2005). Neither further exploration to relations with L1 nor detailed classifications of misuses in L2 developmental route were given before. So, the question about how the difference between Chinese and English finiteness influences Chinese EFL learners’ acquisition of English finite and nonfinite distinctions remains.

The current research was carried out to bridge the afore-mentioned gaps and explore how the crosslinguistic difference between English and Chinese finite and nonfinite distinctions influences Chinese EFL learners’ acquisition of related constructions in English. This research will give a detailed comparison between English and Chinese sentences with verbs as subject, object, object complement and adverbial; survey a large-scale interlanguage corpus; and discuss the relevant crosslinguistic influence and Chinese EFL learners’ developmental route. It will reveal Chinese learners’ misuses from the perspective of crosslinguistic influence, contribute to the general theories in the field of second-language acquisition, and give pedagogical implications.

2. Literature review

Below typological differences in Chinese and English finite and nonfinite distinctions are discussed first. Following this, the relevant theories of crosslinguistic influences on L2 acquisition are illustrated and finally, previous studies in Chinese EFL learners’ acquisition of English finite and nonfinite distinctions are reviewed.

2.1. Typological differences of finiteness in Chinese and English

A series of verbs appearing in a sentence, without pauses or conjunctions are called Multi-verb constructions (MVCs) (Aikhenvald & Muysken, 2011). MVCs in Chinese and English are alike in word order, lexical content, but different in finiteness. In some types of Chinese MVCs, such as sentences with verbs as subject or object, the series of bare verbs can be differentiated by their
lexical cues (Klein, Li, & Hendriks, 2000; Tang, 2019). Specifically, matrix verbs can be identified because only they allow certain aspectual markers (e.g., perfective morpheme “le”). In other types of Chinese MVCs, such as in pivotal or serial-events sentences, the perfective marker “le” modifies a series of verbs, and this language phenomenon does not have a counterpart in English.

In sentences with verbs as subject or object (see example (1a, 1b)), aspectual particles are only allowed after the predicate verb; thus, the predicate verb is the finite verb, and the verbal subject or object is nonfinite. This shares similarity with English nonfinite verbs as subject or object sentences. The difference lies in the form, that is, English nonfinite subjects or objects should be in the form of “-ing” or “to infinitives,” while Chinese nonfinite subjects or objects are bare verbs.

(1a) English [-F] as subject vs. Chinese verbal subject:

| Smoking | harm | his health. (English) |
|---------|------|----------------------|
| [-F]    | [+F] |                      |
| No tense| With tense |

Xiyan weihai le tade jiankang. (Chinese)

Smoke harm PFT² his health.

| [-F] | [+F] | No aspect | With aspect |

(1b) English [-F] as object vs. Chinese verbal object:

| Workers | stop | working. (English) |
|---------|------|--------------------|
| [+F]    | [-F] |                    |
| With tense | No tense |

Gongrenmen tingzhi le gongzuo. (Chinese)

Workers stop PFT work.

| [+F] | [-F] | No aspect |
| With aspect |

However, in other types of Chinese MVCs (see example (2a, 2b)), multiple verbs are compound predicates of which each conveys temporal information, and the asaspectual particles are usually at the end of the compound predicates. MVCs of this type include pivotal sentences and serial-events constructions. A pivotal sentence refers to the sentence in which the object of the first predicate (verb) is at the same time the subject of the second one (Li & Cheng, 2008). Serial-events constructions involve those where two or more separate events in certain relations are juxtaposed together as a continuum (Li & Thompson, 1981). These sentences have no counterparts in English.
(2a) English [-F] as object complement vs. Chinese pivotal sentence:

He encouraged her to attend the meeting. (English)

Ta guli ta canjia le huiyi. (Chinese)

(2b) English [-F] adverbial vs. Chinese serial-events sentences

He bought a ticket to enter the theatre. (English)

Ta mai piao jin le juyuan. (Chinese)

The typological differences between English and Chinese MVCs are thus classified into two categories, i.e., morphological difference (e.g., verbs as subject or object) and syntactic difference (e.g., verbs as object complement or adverbial) (see Table 1). The crosslinguistic differences may result in different learnability problems.

2.2. Theoretical underpinning

DeKeyser (2005) has divided grammatical difficulties into three factors: the complexity of form, the complexity of meaning, and the complexity of the form/meaning relationship. The problem with forms is basically linked to morphology, especially for the acquisition of rich morphology for a native speaker of a language with poor or no morphology. Slabakova (2009) assessed the difficulties associated with syntax, semantics and morphology and concluded that functional morphology is a bottleneck in second-language acquisition, which is more difficult than the acquisition of syntax, the syntax-semantics interface, the syntax–discourse interface, and the

| Sentence Types | English | Chinese | Similarity | Difference |
|----------------|---------|---------|------------|------------|
| VP as subject  | V1 [-F] V2[+F] | V1 bare verb V2+ aspect | Finiteness | Morphology |
| VP as object   | V1 [+F] V2[-F] | V1+ aspect V2 bare verb | Finiteness | Morphology |
| VP as obj-com  | V1 [+F] V2[-F] | V1 bare verb V2+ aspect | Lexical content | Syntax |
| VP as adverbial| V1 [+F] V2[-F] | V1+ aspect/V2+ aspect | Lexical content | Syntax |
Form mapping difficulties exist in the L2 acquisition of English MVCs. In Chinese MVCs, verbs as subject or direct object are nonfinite verbs but, unlike English non-finite verbs, they lack morphology like “-ing” and “to”. Therefore, for Chinese EFL learners, the “-ing” or “to” are redundant for the expression of non-finiteness. The learning problem lies in the choice of picking the correct morphemes and allomorphs to express these meanings and putting them in the right place. More complex form-meaning mapping occurs in sentences with nonfinite verbs as object complement or adverbial. Chinese EFL learners need to construct a new finite and nonfinite distinction because the reminiscent sentence in Chinese has different finiteness. The learning problem lies in the reconstruction of sentences and mapping the restructured meaning with correct forms.

Crosslinguistic influence is therefore predicted. Crosslinguistic influence refers to the influence of one language upon another in second-language acquisition, and it normally implies some kind of negative transfer such as production (Odlin, 1989, 2012). Morphological transfer was found to persist in L2 acquisition and make it difficult or even impossible to fully acquire a grammatical property in the target language. For example, it is especially difficult for Chinese EFL learners to map the form of English articles with its complex meanings as this form is lack in learners’ L1 (e.g., Han, 2010).

On the other hand, Chinese EFL learners were found to produce L1 reminiscent morpho-syntactic features, such as verb transitivity (e.g., “I like listen music); relative clauses (e.g., “she do this thing is my most important thing in my life); topicalization (e.g., “And played the table-tennis I am very bad); position of adverbs (e.g., “she very much likes dancing); and existential sentences (e.g., “there has a book on the table) (Chan, 2004; Matthews & Yip, 2003). It was argued that the more complex the structure of the sentence, the more syntactic transfer occurs, while the lower the learners’ L2 proficiency, the more syntactic transfer occurs. Even though a number of studies have found negative transfer from the L1, “the questions of which characteristics of the native language transfer, which transferred properties play a more fundamental role in defining the interlanguage grammar, and what their precise effect is on second language learning, are far from resolved” (Bliss, 2006, p.1).

In general, theories in form-meaning mapping and crosslinguistic influence suggest that the typological differences in finite and nonfinite distinctions are likely to result in the transfer from the L1. L2 learners may heavily rely on the L1 in second-language construction even if they have learned its grammar, and with the development of L2 proficiency, the reliance on the L1 may decline.

2.3. Previous studies on the acquisition of finite and nonfinite distinctions in the L2
Previous studies concerning Chinese EFL learners’ acquisition of nonfinite verbs have been conducted, but no consensus has been reached regarding the role of the L1 or whether Chinese EFL learners have the syntactic knowledge of the [+F].

Some researchers argued that Chinese EFL learners had a deficit in accessing finiteness in English. For example, Tsang (2003) found via grammaticality judgement tests that Cantonese learners could not comprehend English finiteness other than the one in their first language. The researcher explained the non-native-like performance on English finiteness as the inaccessibility of finiteness, that is, a feature of lexical realization of finiteness remaining in the L2. Xu (2008) identified some common syntactic derivations among Chinese college students, including “-ing” overgeneralization, nonfinite verbs in finite forms.
However, others argued that Chinese EFL learners had the syntactic knowledge of finite and nonfinite distinctions, and the misuses were only on performance rather than competence. Chang (2005) examined compositions (on the same topic) written by 102 undergraduates and hypothesized that, if Chinese EFL learners could not distinguish [+F], they would randomly use finite and non-finite verbs, which means that there would be [-F] forms in [+F] positions and vice versa. The results showed that, in finite positions, a high percentage of learners did not use inflected forms (e.g., last year, my father say…) but, after auxiliaries, modal verbs, and “to” inflected forms were seldom used (e.g., can made). The participants demonstrated a knowledge of finite verbs, since they could use overt nominative subjects in finite clauses consistently (e.g., I don’t like it), and mark agreement correctly (e.g., she is good at…). Chang thus argued that although inflections of finite verbs were missing in their English in a considerable proportion of Chinese learners, they indeed had the syntactic knowledge of [+F]. A similar conclusion was drawn by Gisborne (2009). Gisborne (2009) searched for Hong Kong EFL learners’ usage of either finite or nonfinite complements after “guess”, “realize” and “suggest” in the International Corpus of English-Hong Kong (ICE-HK). The purpose was to explore whether there was a lack of finiteness in the variety which reflects the lack of finiteness in Sinitic languages. The results showed that the lack of finiteness was not systematic in HKE.

There were also researches which noted the L1 as a potential factor; however, these studies were not based on typological comparisons and no systematic exploration of this factor was given. For instance, Yang and Huang (2009) surveyed compositions written by 5 levels of Cantonese speakers of English (age: 12–16) and found that in sentences with more than one verb (including verbs in coordination, subordination and relative clauses), the L2 learners performed better in marking the tense of the v1 than that of the v2, but only in one construction where nonfinite forms should occur, lower-proficiency learners (primary- and middle-school students) tended to omit the past tense of the finite verb and apply the past tense to the nonfinite verb (e.g., I go to Nanjing attended the meeting). The researchers thus inferred that Chinese learners may have translated the alike Chinese sentences to English in composition writing.

As noted above, although previous research has found learning difficulties in the acquisition of finite and nonfinite distinctions in the L2, the role of the L1 and whether the typologically different finiteness in the L1 lead to misuses remain unclear. The current research is based on the comparison of Chinese and English finite/nonfinite ([+F]) distinctions and probes into whether or not there is L1 transfer and the nature of its forms.

3. The current research

3.1. Research questions

RQ1. Is there crosslinguistic influence on Chinese EFL learners’ acquisition of finite and nonfinite distinctions in English MVCs?

Given the detailed comparison of Chinese and English finiteness in MVCs and the theories on form-meaning mapping, we predict that there will be crosslinguistic influence on Chinese EFL learners’ acquisition of English finite and nonfinite distinctions. The different degrees of cross-linguistic difference may cause varied types of influence.

RQ 2. What is the role of L2 proficiency in crosslinguistic influence?

Previous empirical studies showed that the lower the learners’ L2 proficiency, the more syntactic transfer occurred. It is therefore predicted that the L2 proficiency may also play an important role in the crosslinguistic influence from Chinese MVCs on Chinese EFL learners’ acquisition of English finite and nonfinite verbs.
3.2. Method

To answer these questions, the current research investigated a large-scale interlanguage corpus, i.e., Chinese Learners’ English Corpus (CLEC) (Gui & Yang, 2003). Learners’ corpus has the advantage of being natural, large-sample and homogeneous, which is especially suitable for exposing which aspects of grammar are more susceptible to transfer and which patterns of learners’ use can be generalized.

3.2.1. Participants

The Chinese Learners English Corpus (CLEC) includes five sub-corpora: St2 (senior high school students), St3 (freshmen and sophomores of non-English majors), St4 (juniors and seniors of non-English majors), St5 (freshmen and sophomores of English majors), and St6 (juniors and seniors of English majors) (Gui & Yang, 2003; Liu, 2012). This corpus is a pool of written compositions in formal tests with the same topic and requirements within a time limitation.

The current research chose three sub-corpora—St2, St4 and St6—as the experimental participants to cover low-, intermediate-, and high-proficiency Chinese learners of English. The participants’ L2 proficiency is listed in Table 2 according to the National Full-time Senior High School English Syllabus (Revised) (China Ministry of Education, 2004), the requirement of the College English Test Band 6 (CET6, an intermediate-level English test) (Higher Education Department of the Ministry of Education, 2006) and Test for English Majors Band 8 (TEM 8, an advanced-level English test) (Committee of Foreign Language Teaching in Colleges and Universities, 2000).

Therefore, the three groups of learners can well represent the low-, intermediate- and high-proficiency learners in China from their graded number of vocabulary and phrases, reading speed, grammar learning, words in compositions, etc., as stated in the national syllabus.

3.2.2. Materials

The CLEC was constructed in 2003 with more than 1,000,000 words from the interlanguage production of Chinese learners at different proficiency levels. It contains a frequency list and is in an error-tagged text version in which all language errors are categorized with two tiers. For instance, “vp” (the first tier) refers to the verb phrase error and “vp1” (the second tier) stands for the verb phrase error in the pattern (Liu, 2012, p.13). Error tags are inserted where errors occur and are bracketed by square brackets. For example, “suddenly I saw dad sat [vp4,2-] in a chair.” The square brackets and their enclosed letters and numbers such as [vp4] are error tags representing different types of errors; “2-” shows the scope of error occurrence; “2” means that there are two words before the error that are needed for determining the occurrence of the error; and the “-” shows the position of the error. On the whole, there are 61 types of errors identified in this corpus, running across the sentence, phrase, and word levels.

3.2.3. Procedure

Sentences with misused finite and nonfinite verbs were extracted from the corpora by searching vp4 and vp5 in the raw compositions. Vp4, the finite/nonfinite misuses, include mistakenly using finite verbs for nonfinite verbs or vice versa, e.g., “I call on Chinese women become [vp4,5-] more conscious about themselves”. Additionally, vp5, nonfinite misuses include the use of the infinitive for a participle or vice versa and the “-ed” participle for an “-ing” participle or vice versa, e.g., “the doctor asked me to stay hospital observing [vp5,7-]”. Finally, vp4 and vp5 account for 10.93% of the total verb phrase misuses in St.2, 9.66% in St. 4, and 9.75% in St. 6 (Gui & Yang, 2003).

The extracted data were then re-tagged according to misused verbs, their syntactic positions and misused forms. Table 3 shows the method of coding. The retagged sentences that involve nonfinite verbs as attribute or appositive, which are unrelated to the research purpose, were removed. Before the data analysis, normalization was performed by dividing the raw misuse figures by the total word count of sub-corpus and the results multiplied by 200,000 (the total word count in each sub-corpus is over 200,000).
| Sub-corpora | Approximate age range | Subjects' vocabulary (words) | Production (words/half hour) | Reading speed (words/minute) | Exams | Grammars | Proficiency level | Proficiency level |
|-------------|-----------------------|-------------------------------|-----------------------------|------------------------------|-------|----------|-------------------|-------------------|
| St2         | 15-19                 | 1200                          | 80                          | Can generally understand the text | Low   | Having learned basic grammar (incl. tense, nonfinite verbs) | National college entrance exam | Low               |
| St4         | 20-23                 | 4790                          | 120                         | 70                            | Intermediate | Having finished all the grammar learning | Band 6 College English Test | Intermediate       |
| St6         | 20-23                 | 7000-12,000                   | 140-180                     | 140-180                      | High   | Being more familiar with the grammar and can use them correctly | Band 8 Test for English Majors | High              |

Table 2. Proficiency of Participants in Sub-corpora St2, St4, and St 6 in CLEC

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After normalization, the misuse figures for each sub-corpus are based on an identical number. The misuses were categorized into bare verbs, to-do variants (e.g., to does, to did, to doing), over-inflection (meaning overinflecting the nonfinite verbs according to tense), and mixed-usage (including the infinitive for the participle or vice versa, and an -ed participle for an—ing participle or vice versa). See example (3).

(3) a. Bare verbs: *Protect the environment is a very important thing. (St2)
   b. To-do variants: *At last, Crouse made up his mind to killed the savages as soon as they came. (St2)
   c. Over-inflection: *Our parents come to our school took part in the parents’ meeting. (St2)
   d. Mixed-usage: *Comparing with the English course in other universities, the CECL course in GIFL is different. (St6)

Sentence types were defined according to the syntactic position of the nonfinite verbs, which are, respectively, verbs in subject, object, object complement and adverbial. In addition to the retagging and classification of misuses, the total usage of nonfinite verbs in the corpus was also calculated via the software “AntConc 3.5.7”. The total usage of nonfinite verbs includes to infinitives, gerunds, and past participle. Present and past participles with copula and auxiliaries forming predicate or passive voice were not included in the total usage of nonfinite verbs, because misuses of these types were regarded as “tense” (vp6) or “voice” (vp7) rather than “non-finite usage” (vp4, vp5) in the Corpus (see Gui & Yang, 2003).

4. Results

The adjusted misuse figures of low, intermediate and high proficiency Chinese EFL learners regarding finite and nonfinite verbs are listed in Table 4. It shows that, unsurprisingly, the misuse in the production of nonfinite clauses decreases with increasing proficiency, and learners of above-intermediate proficiency produced more nonfinite clauses than low-proficiency learners.

Misuses were retagged during the above-mentioned coding method. The adjusted misuse figures, with different forms in different sentence types among low, intermediate and high proficiency learners, are shown in Table 5.

It is shown in Table 5 that the dominant misused forms were different in English sentences with [-F] (nonfinite verbs) as subject, object, object complement and adverbial. In sentences with [-F] as subject, the dominant types of misuse were bare verbs, as in example 4. This was prominent across all groups: the misuse count in the low-proficiency group was 15.38, which amounted to 80.02% of the total misuse. In the intermediate-proficiency group, it was 36.64, with up to 95.12% of the total misuse; while in the high-proficiency group, even though the misuse count of bare verbs fell dramatically to 5.31, it still occupied a high percentage of 60%.

(4) Bare verbs: *Get up early can give you a good habit. (St2)

In sentences with nonfinite verbs as object, both bare verbs and to-do variants (see example 5) were prominent among low and intermediate proficiency learners. In the low-proficiency group,
| Corpus | Proficiency Levels       | Vp4  | Vp5  | Total | To infinitives | Gerund | Past participle | Total |
|--------|--------------------------|------|------|-------|----------------|--------|-----------------|-------|
| St2    | Low-proficiency learners | 140.8| 140  | 280.8 | 3345.7         | 2336.5 | 160.5           | 5842.7|
| St4    | Intermediate-proficiency learners | 110.8| 107.4| 218.2 | 5005.3         | 4143.7 | 186.0           | 9335 |
| St6    | High-proficiency learners | 51.6 | 46.7 | 98.3  | 4553.7         | 4147.6 | 508.6           | 9209.9|
the misuse counts of bare verbs and to-do variants were, respectively, 17.30, 17.30, and they constituted 47.37% and 47.37% of the total misuse; in the intermediate-proficiency group, there were, respectively, 23.49, and 21.61, which were 43.86% and 40.35% of the total misuse. However, bare verbs (misuse count: 1.77, percentage: 15.39%) and to-do variants (misuse count: 3.54, percentage: 30.78%) were not prominent among the high-proficiency learners, which group instead, had a more even distribution of misused forms.

(5) a. Bare verbs: *The two cheats ... pretended work hard at the empty looms.
   b. To-do variants: *At this very moment, we begin to realized that what makes us so unable, dependent and indecisive, is our "lovely" teaching system of our "lovely" ivory tower. (St2)

In sentences with nonfinite verbs as object complement, the main misuses of low proficiency learners were bare verbs (misuse count: 15.38, percentage: 36.37%) and over-inflection (misuse count: 16.34, percentage: 38.64%). In contrast, intermediate and high proficiency learners mainly made mistakes related to bare verbs and mixed-usage (see example 6). These were, respectively, 9.40 (45.48%) and 19.73 (58.32%) and to-do variants (misuse count: 3.54, percentage: 30.78%) were not prominent among the high-proficiency learners, which group instead, had a more even distribution of misused forms.

(6) a. Bare verbs: *Before long the boy ... taught him do the thing what the people can do.
   b. Over-inflection: *In January 15th, of 1991, Gorge Bush, the president of the United States, ordered the American air force attacked the goals in Iraq.
   c. Mixed-usage: *We found the bikes disappearing. (St2)

In sentences with nonfinite verbs as adverbial, misuses in the form of bare verbs and over-inflection were also prominent among low proficiency learners (28.83 (44.77%) and 22.11 (34.33%), but not among the other two groups. Bare verbs were dominant, but mixed-usages and to-do variants were evenly distributed within the intermediate-proficiency group: the misuse count of bare verbs was 19.73 (58.32%), mixed-usage was 7.52 (22.23%) and to-do variants was

| Groups                   | Misuses          | In subject | In object | In object complement | In adverbial |
|--------------------------|------------------|------------|-----------|----------------------|--------------|
| Low proficiency learners | Bare verbs       | 15.38 (80.02) | 17.30 (47.37) | 15.38 (36.37) | 28.83 (44.77) |
|                          | Overinflection   | 0.00 (0.00)   | 0.96 (2.63)   | 16.34 (38.64) | 22.11 (34.33) |
|                          | To+verb+ed       | 2.88 (14.98) | 17.30 (47.37) | 3.84 (9.08)   | 9.61 (14.92)  |
|                          | Mixed-usage      | 0.96 (4.99)   | 0.96 (2.63)   | 6.73 (15.91)  | 3.84 (5.96)   |
|                          | Total misuses    | 19.22 (100.00)| 36.52 (100.00)| 42.29 (100.00)| 64.40 (100.00) |
| Intermediate-proficiency learners | Bare verbs       | 36.64 (95.12) | 23.49 (43.86) | 9.40 (45.48)  | 19.73 (58.32) |
|                          | Overinflection   | 0.94 (2.44)   | 2.82 (5.27)   | 3.76 (18.19)  | 0.00 (0.00)   |
|                          | To+verb+ed       | 0.94 (2.44)   | 21.61 (40.35) | 0.94 (4.55)   | 6.58 (19.45)  |
|                          | Mixed-usage      | 0.00 (0.00)   | 5.64 (10.53)  | 6.58 (13.83)  | 7.52 (22.23)  |
|                          | Total misuses    | 38.52 (100.00)| 53.56 (100.00)| 20.67 (100.00)| 33.83 (100.00) |
| High-proficiency learners | Bare verbs       | 5.31 (60.00)  | 1.77 (15.39)  | 3.54 (22.24)  | 7.08 (38.11)  |
|                          | Overinflection   | 1.77 (20.00)  | 2.65 (23.04)  | 2.65 (16.65)  | 2.65 (15.26)  |
|                          | To+verb+ed       | 0.88 (9.94)   | 3.54 (30.78)  | 1.77 (11.12)  | 4.42 (23.79)  |
|                          | Mixed-usage      | 0.88 (9.94)   | 3.54 (30.78)  | 7.96 (50.00)  | 4.42 (23.79)  |
|                          | Total misuses    | 8.85 (100.00) | 11.50 (100.00)| 15.92 (100.00)| 18.58 (100.00) |

Note. Prof. = proficiency, (%) = the percentage of certain misused form in the total misuses with this group of learners.
6.58 (19.45%). In the high-proficiency group, the misuse count of bare verbs was 7.08 (38.11%), mixed-usage was 4.42 (23.79%), and to-do variants was 4.42 (23.79%). See example 7.

(7) a. Bare verbs: *Sometimes the cat took the plows catch it.
   b. Over-inflection: *Mary Hunter, the professor’s daughter, went to the hospital saw her friend that morning.
   c. To-do variants: *I’m going to my cousin to learning how to operate the computer. (St2)

To obtain a clear view of the distribution of the prominent misused forms within four sentence types among low-, intermediate-, and high-proficiency learners, a bar chart is presented in Figure 1.

To sum up, in different sentence types, the dominant misused forms differed, and L2 proficiency was also found to be an important factor. High proficiency learners engaged in a small amount of misuses in all sentences with [-F] and did not show a clear tendency with regard to using certain forms. Low-proficiency learners had the largest misuse figures, reflected by their prominent use of bare verbs as subject, bare verbs and to-do variants as object, bare verbs and over-inflection as object complement and adverbial. The intermediate-proficiency learners' total misuses lay between that of the other two groups, and the dominant misused forms were like those of the low-proficiency learners in [-F] as subject (i.e., bare verbs) and object (i.e., bare verbs and to-do variants), but similar to the high-proficiency learners with regard to [-F] as object complement (i.e., bare verbs and mixed-usage) and adverbial (i.e., bare verbs, mixed-usage, and to-do variants). It thus shows that over-
inflection mainly occurred in sentences with [-F] as object complement and adverbial among low-proficiency learners, but bare verbs were commonly used among all groups.

5. Discussion
The current research was designed to address two questions: (a) is there crosslinguistic influence on Chinese EFL learners’ acquisition of finite and nonfinite distinctions in English MVCs? (b) what is the role of L2 proficiency in cross-linguistic influence? The corpus analysis revealed four types of misuses related to nonfinite verbs, i.e., bare verbs, to-do variants, over-inflection, and mixed-usage. Both sentence types and L2 proficiency are influential factors. Cross-linguistic influences and other L2 developmental problems are argued to be the reasons for this.

5.1. Crosslinguistic influence

5.1.1. Morphological transfer
The crosslinguistic differences between Chinese and English in using verbs as subject or object concern morphology. The verbs in subject or object are bare in Chinese and semantically nonfinite, whereas they are in “-ing” or “to infinitives” in English and morphologically nonfinite. Learnability problems that result from the mapping between the nonfinite meaning and forms (-ing, to infinitives) were predicted. The corpus analysis above confirmed this prediction and showed that the most frequent misused form was bare verbs, which appeared among learners of different proficiencies. Through transfer analysis (see Chan, 2004), which compares the interlanguage-target language discrepancies, it was observed that the interlanguage resembled the equivalent Chinese MVCs via a word-by-word translation, and therefore, this was attributed to the L1 transfer. High-proficiency learners made dramatically fewer mistakes in using bare verbs; however, bare verbs were a considerable problem for both low- and intermediate-proficiency learners and were common among all sentence types.

In short, from the background with semantic finiteness to the L2 with morphological finiteness, the morphology was difficult in terms of producing MVCs and morphological transfer occurred, diminishing with greater L2 proficiency. The comparison confirms the learnability problems in terms of form-meaning mapping. The difficulty in learning forms in the L2 is “the number of choices involved in picking all the right morphemes and allomorphs to express these meanings and putting them in the right place” (DeKeyser, 2005, p. 6).

5.1.2. Morpho-syntactic transfer
Based on the L1 and L2 comparison, namely, [-F] as object complement sentences vs. pivotal sentences and [-F] adverbial vs. serial-events constructions, v2 in English is nonfinite, while the multiple verbs in Chinese sentences are compound predicates. The aspectual morpheme “le” is usually placed after v2 (Xing, 2004), indicating the end of the event continuum in pivotal sentences. “Le” after v2 in serial-events constructions is interpreted as marking the complement of a series of subevents (Li & Cheng, 2008). Thus, the crosslinguistic influence between L1 (Chinese) and L2 (English) is morphosyntactic in nature.

Corpus analysis showed that bare verbs and over-inflections were both prominently misused as object complement and adverbial among low-proficiency learners. Bare verbs, as stated above, may reflect the fact that Chinese is not an inflected language. Over-inflection of v2 which encodes the temporal information to indicate the completeness of sub-events is strongly reminiscent of the normative sentence structure of Chinese pivotal sentences and serial-events constructions. Over-inflection, as the morphology of verbs with tense, which allows the co-occurrence of temporal information with more than one verb, blurs the distinction between finite and nonfinite verbs. And with two verbs in one temporal category, Chinese EFL learners have transferred the corresponding Chinese features in finiteness to English. The relatively small amount of over-inflection in sentences with [-F] as subject or object also gives support to this attribution. “Le” is not allowed after verbal subject or object in Chinese and no syntactic transfer occurred in sentences with [-F] as subject or object. Over-inflection
was only prominent among low-proficiency learners, which implies an L2 proficiency factor in syntactic transfer; that is, syntactic transfer mainly occurs among low-proficiency learners.

These findings are in line with earlier claims that “the extent of syntactic transfer is particularly large for complex target structures and among learners of lower proficiency levels” (Chan, 2004, p. 69). The results also provided an explanation for the contradictory findings of Chang (2005) and Yang and Huang (2009)'s studies, in which the former argued that no over-inflection in nonfinite positions was found among Chinese EFL learners while the latter observed this. The different conclusions may result from the different classifications of L2 proficiency, as the latter study regarded primary school students as low-proficiency learners while the former college undergraduates. Our analysis of large-scale learner corpora avoids the limitation associated with using a small sample and confirms our prediction that L2 proficiency is an important factor regarding what kind of transfer occurs and to what extent transfer is influenced by L1.

5.1.3. Other factors contributing to the misused morphology
Despite the considerable evidence supporting the existence of crosslinguistic influence from Chinese to English, there were also other forms of misuses in the corpus analysis, i.e., to do variants and mixed usage. These “to-do variants” include morphology such as “to do, to did, to doing.” The non-avoidance of “to” indicates that learners were aware of its function as part of the nonfinite morphology. From a language background that lacks inflection, Chinese EFL learners may hypothesize false concepts about the usage of inflections. They may regard “to” as the indicator of nonfinite verbs and refuse to use any forms of the root verb or of a bare verb because of the hypercorrection of their mother language.

The mixed usage among infinitives, present participles, and past participles was possibly caused by an “ignorance of rule restrictions or under differentiation and incomplete learning” (Touchie, 1986, p.75). A lack of knowledge may lead to confusion in usage, function, and connotation and differences among infinitives and participles.

In general, the “to-do variants” and mixed-usage of nonfinite forms were ascribed to developmental misuses and are mainly due to a lack of knowledge. The appearance of misuses is complex and may be attributed to more than one reason. Except for the crosslinguistic influence, developmental errors may also contribute to the appearance of bare verbs in the learner’s interlanguage. It is arguable, for example, that bare verbs are the result of language transfer or simplification and fossilization. Although more research comparing learners of different language background is needed, it is argued that L1 transfer, together with other probable developmental problems, contributes to the errors.

5.2. L2 proficiency and developmental route
L2 proficiency was found to play an important role in the numbers and types of errors in Chinese EFL learners’ interlanguage. Many previous studies have noted the importance of L2 proficiency in syntactic transfer, i.e., syntactic transfer decreases with the development of L2 proficiency, and L1-resembling structures only occur among low-proficiency learners (Chan, 2004; Helms-Park, 2001, 2003; Hertel, 2003; Jung, 2004). However, no previous studies have contrasted syntactic transfer and other related transfers such as morphological transfer in sentences with the same group of samples, even though morpheme acquisition difficulties, e.g., tense markers and plurals were observed among Chinese EFL learners, including those with a high L2 proficiency (Chang, 2005; Jiang, 2004).

The present study showed that syntactic transfer occurred mainly among low-proficiency learners but that morphological transfer was prominent among both low- and intermediate-proficiency learners. Although the total numbers of errors dramatically dropped among the high-proficiency learners, the dominant misuse forms were still bare verbs, which can be attributed to morphological transfer. It was thus assumed that the L2 developmental route that learners rely on is the sentence structure and forms of the L1 to help to compose sentences in the L2 at the initial stage. With the development of L2
proficiency, the influence from L1 morphosyntax gradually disappears, but the morphological transfer exists for a longer time until the learners reach a high proficiency. Thus, morphological transfer is more prevalent than syntactic transfer in L2 learners’ interlanguage.

Taken together, the present study showed that two forms of misuses, bare verbs and over-inflection, were attributed to cross-linguistic influence, as a reflection of morphological and syntactic transfer. L2 proficiency was found to be an important factor in the misused forms and numbers. The results of this study have several theoretical implications. First, they provided evidence for the role of L1 in L2 learners’ acquisition of finite and nonfinite distinctions and revealed Chinese EFL learners’ developmental route. Second, they enriched the literature in the study of crosslinguistic influence in general. Earlier studies have examined a range of morphosyntactic transfer (e.g., relative clauses, copula, placement of adverbs, existential sentences, topic-prominent sentences, etc.) but this is the first study that systematically investigates the transfer of finite and nonfinite distinctions. The results also gave an explanation to the inconsistent results noticed in previous studies, i.e., the different performance in the usage of nonfinite verbs may be due to the varied criteria of L2 proficiency, and L2 performance is an influential factor in how crosslinguistic influence occurs.

5.3. Pedagogical implications
Finite and nonfinite distinctions between Chinese and English single clause have both morphological and syntactic differences. These differences lead to different kinds of crosslinguistic influence in second language production. As shown from the Chinese learners’ interlanguage corpus, L1 not only interferes the initial state but also mediates the long L2 acquisition process. Turning off the L1 in the classroom may not eliminate its inference in L2 studies. So instead of disallowing the L1, it is recommended to use L1 as the assistance for facilitating the positive transfer, helping to internalize the new concept, and raising L2 learners’ awareness of the negative transfer via cross-linguistic comparisons.

5.4. Limitations
The limitation of corpus analysis studies, including the present one, is that learners may employ an avoidance strategy regarding the use of certain properties. Also, the research properties in the samples may be insufficient and the learning problems may not be fully exposed. In the future study, a combination with other research methods, such as grammaticality judgment test, can give a clearer picture about Chinese EFL learners’ knowledge of English finite and nonfinite distinctions.

6. Conclusion
From a language background without morphological finite and nonfinite distinctions to an L2 with morphological finiteness, learners faced the difficulties of mapping the meaning with correct forms in their production. The analysis of Chinese EFL learners’ interlanguage corpus showed that Chinese EFL learners’ dominant misuses were bare verbs in subject, bare verbs and to-do variants in object, and either bare verbs or overinflection in object complement or adverbial. The forms of misuses were consistent with the corresponding Chinese sentences, i.e., verbs as subject, verbs as object, pivotal sentences, and serial-events sentences. These misuses were thus considered an effect of the morphological transfer from verbal subject or object and morphosyntactic transfer from pivotal or serial-events sentences. The misuses gradually decreased in accordance with Chinese EFL learners’ L2 proficiency, and morphosyntactic transfer mainly occurred among low-proficiency learners.

These findings revealed that typological differences between Chinese and English finite and nonfinite distinctions led to L1 transfer in the L2 acquisition. This is the first attempt to systematically research how typological differences in finite and nonfinite distinctions influence L2 acquisition. The results are in line with the predictions of crosslinguistic influence, providing it with novel support in the theoretical debates in L2 acquisition.
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Notes
1. Previous research mentioned that Chinese may have covert tense marker, such as “jiang” and “yao” (Huang, 1982; Li, 1990). However, these criteria have been denied by Hu, Pan, and Xu (2001). It has been acknowledged that verb-final morphemes are aspectual markers, functioning for marking the aspect of the event.
2. PFT: perfective morpheme.

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