

# *Exploring the Development of Progressive Construction in Chinese and Japanese EFL Writing: A Usage-Based Approach*

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## **Abstract**

This study investigates the developmental trajectory of progressive construction among Chinese and Japanese EFL learners through a usage-based approach. A total of 600 written essays, produced by EFL learners from China and Japan with proficiency levels ranging from elementary to upper-intermediate, were analyzed. The findings reveal that advanced EFL learners, irrespective of their L1 backgrounds, exhibit higher productivity in using progressive constructions, aligning more closely with native English speakers. Moreover, the results support the aspect hypothesis, as activity verbs are predominantly marked with progressive across all learner groups. As for the development of progressive construction, less prototypical verb types in progressives increase proportionally with proficiency levels in the top 10 contingencies. However, discrepancies in proportions among Chinese and Japanese EFL learners underscore the need for a further examination of the intricate patterns of non-prototypical form-meaning associations across L1 backgrounds. The present study bears

significance in shedding light on the acquisition of tense-aspect morphology influenced by L1 transfer and learner proficiency.

doi: 10.1002/tesq.3351

## INTRODUCTION

The usage-based approach investigates language acquisition by examining learner usage patterns of constructions and the factors influencing the construction learning process (Gries & Ellis, 2015). Previous research has extensively explored the impact of native English usage on second language (L2) learners' production of verb argument constructions (VACs), concluding that frequency, verb-construction contingency, and semantic prototypicality and generality jointly affect L2 construction learning (Gries & Ellis, 2015; Römer & Garner, 2019; Römer, O'Donnell, & Ellis, 2014). However, these studies mainly focused on advanced L2 learners and were based on VACs (Wu & Wang, 2020).

To examine whether the previous findings on VACs can be generalized to other linguistic features and to learners with different proficiency levels, this study extends the focus to a grammatical construction, specifically the English progressive construction, and includes elementary and intermediate EFL learners. The inclusion of these learners allows for a broader understanding of how progressive construction develops across a wider proficiency range. The goal is to provide a deeper insight into the factors influencing L2 construction learning across various constructions and proficiency levels.

Progressive construction combines progressive meaning with verb semantics, forming an essential category of tense-aspect morphology rather than just a grammatical form (Mueller, 2018). Its acquisition has been extensively elaborated by the aspect hypothesis (AH) (Anderesen & Shirai, 1996). When examining the AH's effectiveness in explaining the acquisition of progressive construction, first language (L1) background is one of most considered factors, which can disrupt the acquisitional sequences the AH predicts (Bardovi-Harlig & Comajoan-Colomé, 2020). Most studies indicate that regardless of learners' L1, the effect of lexical aspect on acquiring grammatical morphology is a language learning universal (Collins, 2004; Fuchs & Werner, 2018; Zeng, Shirai, & Chen, 2019). However, L1 effects may be subtle and mediated by learner proficiency (Bardovi-Harlig & Comajoan-Colomé, 2020). For instance, more L1 influence was

detected in lower proficiency Japanese as a Second Language learners than in more advanced learners (Sugaya & Shirai, 2007).

To investigate the acquisition of progressive construction, this study employs a quantitative corpus-based analysis of written essays produced by EFL learners and native English speakers. By probing into the differences in the developmental trajectory of progressive construction of EFL learners from distinct L1 backgrounds (i.e., Chinese and Japanese) ranging in proficiency from the elementary level to the upper-intermediate level, this study may further explore the role of L1 transfer and learner proficiency on the acquisition of progressive construction.

## LITERATURE REVIEW

### Progressive Construction in Chinese and Japanese

The progressive construction expresses two basic semantic features: duration and dynamicity. Duration means that the progressive applies to ongoing activities without clear endpoints, while dynamicity indicates a changeable state (Williams, 2002).

Regarding English, the progressive marker *be V-ing* is obligatory and conveys “action in progress,” when used with activity verbs (Bybee & Dahl, 1989). With accomplishment verbs, it denotes dynamic events. Paired with achievement verbs, English progressive can profile a situation at its preliminary stage or anticipatory process, as in “the boy was winning the game” (Comrie, 1976). Although, typically incompatible with stative verbs (e.g., \*Sara is knowing French), the progressive with states can occasionally depict temporariness or vividness of a situation (Smith, 1983). Furthermore, stative verbs can occur with the progressive to portray states changing by degrees and agentive uses of the verb “BE” such as “he’s being silly” (Biber, Johansson, Leech, Conrad, & Finegan, 1999; Declerck, 2015).

In Japanese, the progressive meaning is typically expressed using the imperfective suffix *-te-iru*, which can combine with both activity verbs (e.g., “*hasitte-iru*,” meaning “is running”) and accomplishment verbs (e.g., “*gakkoo-e hasitte-iru*,” meaning “is running to school”). Both these verb types inherently signify dynamic durations (Shirai, 2000). In addition, the progressive marker can be affixed with certain achievement verbs (e.g., *tataku* “hit” and *keru* “kick”), as in “Ken-wa soto-de booru-o ket-*te i-ru*” (Ken is kicking a ball outside) (Shirai, 2000: 341). Furthermore, similar to English, the Japanese progressive allows stative verbs to indicate vividness and temporariness as in “Huzisan-ga mie-*te*

*iru*” (We can see Mt. Fuji (at this moment)) (Shirai & Nishi, 2005: 42).

It is worth noting that *-te-iru* more often denotes resultative states (with achievement verbs) than progressive meaning (with activity verbs) (Shirai & Nishi, 2005). Accordingly, Japanese EFL learners might be cautious about transferring *-te-iru* to English progressive makers *be V-ing*, except for activity verbs and accomplishment verbs. In other words, the restrictive transfer of *-te-iru* to certain lexical aspect category may prevent overgeneralization of English progressive with achievement and state verbs.

In addition, Japanese has fewer state verbs compared to English (Kageyama, 1996; Kuno, 1973; Shirai & Nishi, 2002). Consequently, a common way to denote stativity in Japanese is by attaching the durative aspect marker *-te-iru* to achievement verbs, as in “Ken-wa sin-*de-iru*” (Ken is dead) (Shirai, 2000). Such a discrepancy in encoding stativity may further hinder Japanese EFL learners from acquiring the aspectual patterns in denoting stativity in English.

In Chinese, progressivity is typically expressed by the imperfective markers *zai-* and *-zhe*, with *zheng-* and *-ne* as supplementary variants (Ren, 1968). According to Xiao and McEnery (2004), the Chinese progressive marker *zai-* when co-occurring with activities and accomplishments typically indicates an ongoing situation, but do not have a futurate meaning. Furthermore, the Chinese progressive marker *zai-* is more prototypically progressive than the English progressive marking (Zeng et al., 2019). For instance, it tends to be incompatible with achievement verbs, as illustrated in \*Lisi zai ying (Lisi is winning) (Lin, 2006: 16). However, the Chinese imperfective marker *-zhe* can modify stative sentences with stage-level predicates that describe transitory situations (e.g., “Tamende guanxi cunzai-zhe wenti.” “There are problems in their relationship”).

There is some disagreement over the aspectual meaning denoted by the marker *-zhe*. Xiao and McEnery (2004) analyzed it as indicating the durative viewpoint aspect, conveying the durative nature of a situation. However, others have referred to *-zhe* as a “progressive suffix,” suggesting it indicates progressive action similar to the marker *zai-* (Comrie, 1976; Ren, 1968; Tiee, 1986). In contrast, Smith (1991) argued that the basic meaning of *-zhe* is resultative stative, which can attach to stative predicates. Smith (1991) proposed that *-zhe* is gradually adopting the function of *zai-* to convey progressive meaning, especially in some Mandarin dialects. The lack of clarity around the semantic contribution of *-zhe* may impact Chinese EFL learners’ acquisition of stative progressives. Specifically, the frequent occurrence of *-zhe* with stative verbs in Chinese could facilitate learners’ acceptance of stative progressives in English.

To summarize, the progressive markers in English, Japanese, and Chinese can all indicate actions in process when combined with prototypical verbs like activity and accomplishment verbs. However, the English progressive can depict the process leading up to a punctual point with achievement verbs (Shirai, 2000). This particular usage is less common in Chinese and Japanese (Shirai, 2000; Wu, 2006).

Furthermore, while stative verbs in both Japanese and Chinese can pair with progressive markers to convey vividness or temporariness, there are some key differences. In Japanese, the potential negative transfer of the progressive marker *te-i-ru* and discrepancy in encoding stativity between Japanese and English might impede Japanese EFL learners' acquisition of non-prototypical progressive uses with achievement and state verbs. In contrast, for Chinese EFL learners, the frequent co-occurrence of the marker *-zhe* with stative verbs might facilitate acceptance of stative progressives in English.

## The Aspect Hypothesis

The aspect hypothesis for second language acquisition posits that in the initial stages of the acquisition of tense-aspect morphology, the acquisition of grammatical morphology will be influenced by lexical aspectual categories. In other words, verbal morphology will be attracted to and will occur with predicates with similar semantics (Bardovi-Harlig & Comajoan-Colomé, 2020).

Specifically, the present study aims to test the third and fourth hypotheses of the aspect hypothesis, which are concerned with progressive construction: In languages that have progressive aspect, progressive marking begins with activity verbs, then extends to accomplishment or achievement verbs; and progressive markings are not incorrectly overextended to statives (Andersen & Shirai, 1996: 533). As Bardovi-Harlig and Comajoan-Colomé (2020) proposed, these hypotheses have received insufficient attention.

Most previous studies align with Hypothesis (3) that progressive markings are associated primarily with activity verbs (e.g., Bardovi-Harlig, 2012; Collins, 2004; Wu & Wang, 2020; Zeng, Shirai, & Chen, 2023). For example, Wu and Wang (2020) observed a predominant association of progressive marking with activity verbs among Chinese EFL learners across three proficiency levels, thus supporting Hypothesis (3). Similar result was found in Zeng et al. (2019) and Zeng et al. (2023). Nevertheless, a nuanced discrepancy arises in the literature. Zeng et al. (2019) and Zeng et al. (2023) identified a heightened association between activity verbs and progressive construction at higher proficiency levels, contrasting with Wu and

Wang's (2020) observation of diminishing activity verb dominance with increasing proficiency.

A discrepancy exists regarding Hypothesis (4). Bardovi-Harlig and Bergström (1996) analyzed the written narratives of 23 ESL learners and 23 French as a foreign language learners and found that progressive markings rarely extended to statives, confirming Hypothesis (4). Similarly, Housen (2002) found that very few beginning and lower intermediate learners extended the progressive marking to stative verbs. In the discussion of the progressive construction in world Englishes, Van Rooy (2006) and Rautonaho (2014) argued that the use of stative progressive can vary across L1 backgrounds. For instance, speakers of Indian English tend to employ stative progressives more frequently than speakers of Singapore English (Rautonaho, 2014).

Fuchs and Werner (2018), to test Hypothesis (4), examined a large cross-sectional corpus of writing produced by beginning to lower intermediate learners of three native languages where the progressive is present (Mandarin and Cantonese, Japanese, and Spanish) and three where it is not (Polish, German, and Hebrew). Their results confirmed Hypothesis (4) that progressive markers are seldom utilized with stative verbs.

Zeng et al. (2019) is another study that extensively overlaps with the current study. Drawing from spoken corpora of EFL learners of three L1 backgrounds (Chinese, German, and Spanish) at two proficiency levels (high intermediate and advanced), Zeng et al. (2019) investigated the interplay between L1, lexical aspect, and proficiency in the use of the English progressive aspect. Their findings align with Hypothesis (3), indicating that irrespective of L1 backgrounds, progressive markings are primarily linked with activity verbs. However, diverging from Hypothesis (4), Zeng et al. (2019) observed a pronounced use of stative progressives among EFL learners, especially pronounced among intermediate L1 Spanish learners. Zeng et al. (2023) considered the role of production mode. Delving into both the spoken and written corpora of Chinese EFL learners, Zeng et al. (2023) found that speech consistently exhibited a higher incidence of stative progressives compared to writing.

Collectively, Zeng et al. (2019) and Zeng et al. (2023) shed light on the complex patterns of non-prototypical form-meaning associations (here the stative progressive) across L1 backgrounds, proficiency, and production mode. Notwithstanding, both studies mainly focused on two learner proficiencies—namely, intermediate, and advanced. More attention should be given to the progressive use in elementary-level learners. Zeng et al. (2023) suggested that future research should include beginning level learners to test the generalizability of their findings on the developmental patterns of progressive aspect. Fuchs

and Werner (2018) also argued that learner corpus research on tense and aspect in English has focused predominantly on proficient learners. Therefore, conclusive evidence on beginning and lower intermediate learners is still lacking.

In light of this context, by examining a learner corpus of L2 writing generated by EFL learners from China and Japan ranging in proficiency from elementary to upper-intermediate levels, the present study aims to investigate the differences in developmental trajectories of English progressive construction across L1 backgrounds, and to test the aspect hypothesis, specifically Hypothesis (3) and (4).

## L1 Transfer in the Acquisition of English Progressive Aspect

There has been debate around whether L1 transfer affects the acquisition of the English progressive aspect, in particular with respect to stative progressives. Several studies found evidence of L1 influence (e.g., Andersen & Shirai, 1996; Robison, 1990; Rocca, 2007; Zeng et al., 2019). For example, Robison (1990) conducted an interview with a native speaker of Spanish learning English and categorized verb tokens as stative versus dynamic. Results showed that 22% of stative verbs occurred in the progressive form, including many ungrammatical uses. Andersen and Shirai (1996) argue that this frequent use of the progressive with stative verbs could arise from transfer of imperfective aspect from learners' L1. Spanish imperfective frequently combines with stative and activity verbs, in contrast to more restricted English progressive usage. These findings were mirrored by Zeng et al. (2019), who analyzed the speech of Chinese, German, and Spanish EFL learners. The Spanish group demonstrated significantly higher rates of overapplying the progressive to stative verbs.

Further evidence for the role of L1 transfer comes from Rocca's (2007) bidirectional study of Italian and English. Results showed that Italian children persistently used the progressive with English stative verbs. Conversely, English children acquiring Italian underused the imperfective past with stative verbs. Rocca (2007) suggests that this difference directly stems from transfer of the aspectual properties of learners' L1. Namely, the Italian imperfective frequently co-occurs with statives, whereas the English progressive does not, leading to over- versus under-application respectively.

Taken together, these studies provide some evidence that, as originally suggested by Andersen and Shirai (1994), overextending the English progressive to stative contexts may be attributable to transfer effects, especially for learners with Romance language backgrounds



(Spanish and Italian) where use of imperfective aspect is less restricted (Zeng et al., 2023).

However, other studies have found the effect of L1 transfer on the acquisition of the English progressive to be unclear or minimal (e.g., Fuchs & Werner, 2018; Kleinmann, 1977). Kleinmann (1977) investigated whether existing L1 progressive forms influence acquisition by comparing two groups of ESL learners—native Arabic speakers without a progressive in their L1 versus native Spanish/Portuguese speakers with L1 progressives. It was hypothesized that the Spanish/Portuguese learners would show greater facility with the English progressive. However, oral production tasks revealed no significant differences between the two groups.

Similarly, Fuchs and Werner (2018) analyzed writing samples from EFL learners both with (Mandarin, Cantonese, Japanese, and Spanish) and without (Polish, German, and Hebrew) L1 progressives. Regardless of learners' L1, use of stative progressives was uniformly rare. This suggests that L1 differences likely play a negligible role in English progressive aspect acquisition.

In short, these studies are significant in depicting the potential effect of L1 transfer on the acquisition of English progressive. However, the extent to which a learner's L1 influences the acquisition of L2 tense-aspect markers is still an open issue (Shirai, 2016). Additionally, L1 influence may depend on other mediating factors. As proposed by Bardovi-Harlig and Comajoan-Colomé (2020), learner proficiency plays a moderating role with lower proficiency learners showing heightened L1 effects compared to advanced peers.

## Usage-Based Approach to L2 Acquisition

The usage-based approach examines language acquisition by analyzing the learner usage patterns of constructions or symbolic form-meaning pairings (Wulff & Ellis, 2018). It posits that the distributional properties of linguistic input impact the ease of processing, order of acquisition, and accuracy of use of various linguistic constructions. This approach suggests that language acquisition is a gradual and incremental process and that the regularities, generalizations, and productivity that characterize language emerge from accumulated usage experiences (Goldberg, 2006; MacWhinney & O'Grady, 2015; Robinson & Ellis, 2008).

Previous studies on VACs have extensively explored the impact of distributional factors and concluded that native usage (e.g., availability, contingency, formulaicity) may contribute to the acquisition of L2



constructions (Ellis & Ferreira-Junior, 2009; Ellis, Römer, & O'Donnell, 2016; Römer & Garner, 2019).

Working with longitudinal learner data, Ellis and Ferreira-Junior (2009) found a strong correlation between the frequencies of verbs in VACs produced by learners and the frequencies of verbs in VACs in the input they received, indicating a strong usage effect on learner verb-VAC associations.

Based on larger corpora and data collected in psycholinguistic experiments, other studies further examined the effect of the native English usage on construction for L2 learners (Ellis, O'Donnell, & Römer, 2014; Römer et al., 2014; Römer, Skalicky, & Ellis, 2020; Wulff, Ellis, Römer, Bardovi-Harlig, & Leblanc, 2009). For instance, to determine whether the acquisition of verbs in verb-morphology association is affected by their frequency, form, and function in the input, Wulff et al. (2009) examined the use of progressive construction in two large spoken corpora of English native speakers and the spoken data from 37 EFL learners at beginning level. They found that the acquisition of verb-morphology associations is potentially driven by the frequency of verb usage in native contexts, coupled with factors like distinctiveness and prototypicality.

Collectively, these studies have shown that L2 English learners, whether at advanced or beginning levels, exhibit constructional knowledge profoundly shaped by usage. This constructional knowledge overlaps significantly with that of L1 English speakers, but also exhibits differences that can be attributed to cross-linguistic transfer and language typology effects. However, these studies predominantly focus on specific proficiency levels, not acquisition over time. Consequently, they may not comprehensively capture the evolving acquisition of constructions over a developmental trajectory.

Aiming to address this limitation, Römer and Garner (2019) investigated how verb-argument constructions develop in the spoken English of L2 learners across intermediate to advanced levels. Results showed that more proficient learners tend to be more productive in their VAC use and closer to patterns in L1 English usage than less proficient learners. Römer and Garner (2019) provided significant evidence for the effect of native usage on verb-argument construction learning from a developmental perspective.

Similar studies examining progressive construction have been conducted by Wu and Wang (2020) and Zeng et al. (2019). Wu and Wang (2020) analyzed the usage of progressive construction in argumentative essays written by Chinese learners at three different proficiency levels and English native speakers. The results showed that Chinese EFL learners significantly improved the productivity and variability of their progressive construction repertoire with increased

proficiency. Furthermore, Wu and Wang (2020) showed marginal usages of the progressive became more common at higher proficiencies. Despite providing useful insights, they exclusively focused on Chinese EFL learners, with relatively rough proficiency classification based on age and major.

In contrast, Zeng et al. (2019) examined spoken data from learners representing three different L1 backgrounds (Chinese, German, and Spanish) to investigate the effects of learners' L1, lexical verb aspect, and proficiency levels on their use of the English progressive aspect. Their study primarily targeted high intermediate and advanced proficiency levels. Zeng et al. (2019) found that irrespective of learners' L1 and proficiency levels, their use of progressive markings was predominantly associated with activity verbs, thus supporting the AH. Furthermore, Zeng et al. (2019) identified that both intermediate and advanced learners use stative progressives, with intermediate L1 Spanish learners tending to overuse stative progressives. Their study revealed a nuanced interplay between L1 background and proficiency on non-prototypical form-meaning associations.

However, Zeng et al. (2019) predominantly focused on relatively higher proficiency levels (high intermediate and advanced) and the effect of Romance (Spanish) versus non-Romance (German and Chinese) L1 backgrounds. Their results warrant further exploration, encompassing a broader spectrum of learner proficiency, especially at elementary levels, and examining additional pairs of L1 backgrounds.

Against these backdrops, by examining a learner corpus of L2 writing generated by EFL learners from China and Japan ranging from elementary to upper-intermediate learner proficiency, the present study aims to investigate the differences in developmental trajectories of English progressive construction across L1 backgrounds, to test the aspect hypothesis, specifically Hypothesis (3) and (4), and to determine the effect of the L1 transfer and learner proficiency on the acquisition of progressive construction.

Specifically, the present study addresses the following research questions:

1. How does the frequency distribution of verbs in the English progressive construction vary with L2 proficiency and L1 backgrounds?
2. How does the distribution of lexical aspect (based on Vendler's categories) in the progressive construction differ in learner writing across L2 proficiency and L1 backgrounds?
3. How does the development of L2 learners' productive knowledge of progressive constructions progress across L2 proficiency and L1 backgrounds?

## METHOD

### Corpus

To determine the effects of L1 transfer and learner proficiency on the acquisition of progressive construction in essays written by EFL learners from China and Japan, we used the International Corpus Network of Asian Learners of English (ICNALE; Ishikawa, 2011) -Written as the learner corpus data. The reason for choosing this corpus is threefold.

Firstly, all the written essays along with authors' relevant metadata (e.g., age, gender, and English level) can be freely accessed at ICNALE homepage (<http://language.sakura.ne.jp/icnale/>).

Secondly, the ICNALE-Written rigidly controls the prompts and tasks of the writing process, such as the writing topics and the length of an essay, thus guaranteeing a reliable source for the present study. Specifically, the ICNALE-Written is a collection of learners' 200-to-300-words essays about two common topics: (a) It is important for college students to have a part-time job; and (b) Smoking should be completely banned at all the restaurants in the country. Learners were given 20–40 min to write one essay on Microsoft Word. Use of a spell-checker was allowed, but use of references was prohibited.

Thirdly, the ICNALE-Written, comprising 5600 written essays and amounting to 1.3 million tokens (Ishikawa, 2011), is the largest international learner corpus focusing on Asian learners' English. In addition, this corpus is produced by 2800 elementary to advanced learners from 10 Asian countries/regions, thus providing us with a relatively large number of writing samples. To determine learner proficiency, all learners were required to take a standard L2 vocabulary size test covering the top 5000 word levels (Nation & Beglar, 2007), and also to present scores in high-stake English proficiency tests (e.g., TOEFL, TOEIC, and IELTS). According to their scores in the proficiency tests or in the vocabulary size test, learners were classified into one of the four levels of CEFR-linked proficiency bands: A2\_0 (elementary level), B1\_1 (lower-intermediate level), B1\_2 (upper-intermediate level), and B2+ (advanced level).

For students who did not take the high-stakes English proficiency tests but completed the vocabulary size test, their scores were converted to equivalent TOEIC scores using a conversion formula:  $\text{TOEIC} = 10.495 \times \text{VST} + 289$  ( $R^2 = 0.21$ ). This formula is based on a linear regression modeling of 268 Asian participants who took both the TOEIC test and the vocabulary size test (Ishikawa, 2011). Subsequently, their CEFR proficiency levels were determined using the

**TABLE 1**  
**The Statistical Overview of the Present Study**

Category	Country	Proficiency level	No. of essays	Total words
Native speaker corpus			100	23,971
Learner corpus	China	A2_0	100	24,673
		B1_1	100	25,711
		B1_2	100	27,010
	Japan	A2_0	100	24,491
		B1_1	100	24,810
		B1_2	100	25,172
			700	175,838

mapping scheme between TOEIC scores and CEFR-linked proficiency bands. Further details on this level mapping scheme are provided on the ICNALE homepage.

In this study, we randomly extracted 100 essays for each of the seven groups (see Table 1). The essays were written by EFL learners from China and Japan with A2\_0 level to B1\_2 level (from elementary to upper-intermediate levels) as the learner corpus data of six groups. We selected these two L1 backgrounds as each provides a sufficient number of essays and tokens across all three levels (i.e., A2\_0, B1\_1, and B1\_2). In contrast, the essays for other countries are either unavailable or very limited in size at given levels. It should be noted that we discarded the texts produced by the advanced learners (here B2\_0 level) due to the limited data available.

It is worth noting that both Chinese and Japanese EFL learners come from diverse academic majors spanning sciences & technology (e.g., Mechanical Engineering and Computer Science), social sciences (e.g., Economics and Marketing), and humanities (e.g., English and Culture). However, controlling for the specific majors of EFL learners within these academic genres proved challenging due to data availability constraints.

In addition, essays produced by native English speakers in ICNALE-written were extracted as a proxy for native English usage. The native English speakers came from several countries to maintain diversity in geography and demographics. Specifically, the distribution of nationalities was as follows: USA (57%), UK (14%), Australia (8.5%), Canada (6.5%), and other countries (14%). These native speakers were categorized into three groups: (a) college students aged 19–29 (50%), (b) English teachers aged 22–54 (22%), and (c) adults from diverse professional backgrounds aged 23–59 (28%). Notably, all the native speakers of English were given the same writing tasks and required to write in the same conditions as English learners. This

ensured reliability in comparing the use of progressive constructions between learners and native speakers.

We randomly selected 100 essays from EFL learners across each country and proficiency level to ensure comparability of the corpora. The decision to sample 100 essays for each proficiency level was made based on the minimum available number of essays in any subcorpora, specifically the Chinese EFL learners at the A2\_0 level, which amounted to 100 essays. For consistency, 100 essays were sampled from native English-speaking college students, a demographic representing the most abundant essay contributions among all native English speaker groups in ICNALE-written. The statistical overview of the data is shown in Table 1.

## Data Processing

**Data extraction.** All texts were automatically annotated with the C7 tagset by the Free CLAWS web tagger (<https://ucrel-api.lancaster.ac.uk/claws/free.html>), which offers access to the latest version of the tagger, CLAWS4. All the annotated progressive concordances were retrieved using the regex “`\S + _VBw*\s(\S + _[RX]\w + \s)*\S + _V\wG\s`” in AntConc 3.4.3 (Anthony, 2014).

**Data exclusion.** A manual check was conducted to exclude invalid “progressive” from the data such as gerunds as in Example 1a, “going” in the auxiliary verb phrase “be going to” (Example 1b), and adjectives ending with “ing” (Example 1c). Progressive hits with misspellings were corrected and used as valid data.

Example 1

- a. The most important thing for us is **studying**. (CHN\_B1\_2)
- b. A student is **going** to do his part-time job. (ENS)
- c. College life is really **relaxing** for students. (CHN\_B1\_2)

**Coding of lexical aspect.** To address RQ2 and RQ3 regarding the impact of L1 transfer and learner proficiency on the acquisition of progressive construction, we classified verb predicates of the progressive according to their lexical aspect. We employed an operational test grounded in Vendler’s taxonomy (Vendler, 1967) of lexical aspect, including statives, activities, accomplishments, and achievements. Such an operational test was developed by Shirai (1991, 2013), and it provides us a precise description of the procedures for identifying lexical aspect, thus enhancing the reliability of the results of the present

**TABLE 2**  
**Verb Distribution in Progressive Across Learner Proficiency and L1 Backgrounds**

Country	Level	Type	Token	TTR	Entropy
ENS		47	74	0.6351	0.9442
CHN	A2_0	18	34	0.5294	0.9247
CHN	B1_1	23	40	0.5750	0.9331
CHN	B1_2	43	73	0.5890	0.9334
JPN	A2_0	16	31	0.5161	0.8604
JPN	B1_1	10	19	0.5263	0.9244
JPN	B1_2	27	51	0.5294	0.9320

*Note.* ENS indicates English native speakers; CHN indicates Chinese EFL learners; JPN indicates Japanese EFL learners.

study. Detailed step-by-step procedures of the operational test have been provided in Appendix A.

It should be noted that the coding of lexical aspectual category is based on the predicate, not the verb (Dowty, 1979). Thus, the same verbs taking different arguments could be classified into different lexical aspect. For instance, with a clear endpoint “read a book” is an accomplishment, while both “read” and “read books” are activities.

The coding was done independently by two PhD students majoring in linguistics. Out of the 322 tokens of verbs coded (see Table 2), 304 were coded as the same lexical aspect by the two coders, yielding an intercoder reliability of 94.4%. Any discrepancies were subsequently addressed through consultations with a senior linguistics professor, who is one of the authors of the present paper.

## Data Analysis

For the first research question, we calculated the type-token ratio (TTR) and normalized entropy values to determine the frequency distribution of verb types in English progressive across L2 proficiency and L1 backgrounds.

The TTR is an index of lexical diversity ranging from 0 to 1. A higher TTR value indicates a more productive and wider use of verbs in the progressive construction. Normalized entropy score is employed to measure the uncertainty of verb distribution in the progressive. Specifically, a score approaching 1 indicates an even and less predictable distribution, while a score close to 0 suggests a more predictable distribution (Römer & Garner, 2019). In other words, a lower entropy value implies that only a small set of verbs dominates the construction. To calculate normalized entropy scores, we first listed the observed

frequencies and percentages of each verb occurring in the progressive for a certain learner proficiency and L1 background. The “percentage” information is then used as input for the calculation of normalized entropy using the *normEntropy()* function in the R package “suppnet”.

For the second research question, we provided the proportion of each of the four lexical aspect classes of verbs in the progressive to determine whether there is a difference in the distribution of lexical aspect in the progressive construction across L1 backgrounds and learner proficiency.

For the third research question, we first performed correlation analyses on progressive verbs, allowing us to systematically compare verb usage in progressive construction between different proficiency levels and L1 backgrounds. Correlation analyses have been shown to be useful in measuring how strongly correlated L1 and L2 learner production data are to L1 usage (Ellis et al., 2014, 2016; Römer & Garner, 2019).

Specifically, following Römer and Garner (2019), we compared the verb usage in progressive construction between learner groups and native speakers, with six comparisons in total. For example, we compared Chinese EFL learners at the elementary level to English native speakers, and Japanese EFL learners at the upper-intermediate level to English native speakers. For each of these six comparisons, we calculated Pearson correlation coefficients (*r*) in R. All calculations were based on the log10 transformations of the verb token frequencies. We log-transformed frequencies because the log-transformed values would be more likely to result in a linear relationship between them. To avoid missing responses as a result of logging zero, we only included those verbs shared by both the learner corpus and the native speaker corpus.

Secondly, to investigate the development of progressive construction, we calculated the contingency of each verb in progressive construction for each corpus with specific learner proficiency and L1 backgrounds. Then, we listed the top 10 progressives in verb-progressive construction contingency for each subcorpus.

Contingency refers to the probabilistic relationship between a cue and an outcome. In the context of morpheme development, a cue can be the lemma of an inflected form with its corresponding outcome being the inflected form. Contingency could be calculated by using unidirectional association measures such as  $\Delta P$  (Ellis, 2006; Gries, 2013). Unlike traditional collocational measures,  $\Delta P$  captures directionality in collocation (Gries, 2013). For instance,  $\Delta P$  can determine whether the likelihood of encountering the word “of” before “course” is significantly higher than finding “course” before “of.”



Specifically, in the present study, verb-progressive construction contingency was measured using  $\Delta P$  word to construction ( $\Delta P_{wc}$ ).  $\Delta P_{wc}$  measures how strongly the verb predicts the construction by calculating the probability of the construction given the verb minus the probability of the construction without the verb.

In the present study,  $\Delta P_{wc}$  was calculated by the collexeme analysis developed by Stefanowitsch and Gries (2003), which is used to determine the statistical association strength between words and a given constructional slot. Specifically, for  $\Delta P_{wc}$ , a large positive value indicates a strong association between a word and a certain construction and negative values indicates the inverse. In our analysis, we calculated  $\Delta P_{wc}$  values for each verb in progressive, considering its specific lexical aspect. This means that verbs with different lexical aspects were evaluated separately.

## RESULTS

### Frequency Distribution of Verbs within the Progressive Construction

To capture the productivity of the progressive construction across different proficiency levels and L1 backgrounds, we investigated the TTR and normalized entropy values of verbs in progressive across corpora. Table 2 shows the verb types, verb tokens, TTR, and normalized entropy values of verbs in progressive for each corpus.

Table 2 shows that the production of verbs in progressive by native English speakers has the highest TTR value in all the corpora investigated in the present study. In addition, TTR experiences a gradual increase from 0.5294 in Chinese EFL learners at elementary level to 0.5890 in Chinese EFL learners at upper-intermediate level. As for Japanese EFL learners, there is an increase of TTR from 0.5161 at elementary level to 0.5294 at upper-intermediate level. In general, these results indicate that regardless of L1 backgrounds, higher proficiency learners are more productive in the usage of verbs in progressive and more in line with native English usage.

Concerning normalized entropy values, the usage of verbs in progressive of English native speaker reveals the highest value. Furthermore, there is a trend of steady increase from the elementary level to the upper-intermediate level for both Chinese and Japanese EFL learners. For instance, the normalized entropy value increased from 0.8604 in Japanese EFL learners at elementary level to 0.9320 in Japanese EFL learners at upper-intermediate level, which is close to the

entropy of English native speakers (0.9442). These results suggest that both Chinese and Japanese EFL learners, at higher proficiency levels, demonstrate increased variability in their use of progressive verbs. In other words, their production of the progressive aspect becomes less predictable (i.e., used with more varieties of verbs).

### Distribution of Verb Types in the Progressive Construction across Multiple Corpora

This section probes into the distribution of lexical aspect in progressive across learner proficiency and L1 backgrounds. Table 3 presents the raw frequency and proportion of each lexical aspect in a certain corpus. Figure 1 shows the distribution of the four lexical aspect types in the progressive across three proficiency levels (elementary level to upper-intermediate level) and two L1 backgrounds (Chinese and Japanese).

Table 3 shows that activities were the most frequently used verb type in all six learner subcorpora, followed by accomplishment and achievement. In contrast, state verbs, the less prototypical verb type for the progressive, were quite infrequently used regardless of learner proficiency and L1 backgrounds. This aligns with Zeng et al. (2023), who observed that the progressive marking is strongly associated with activity verbs, with stative verbs being least likely to take progressive markings.

Figure 1 shows that the use of states in progressive gradually grew with the increase of learner proficiency for both Chinese and Japanese EFL learners. For Chinese EFL learners, there was no stative verb at the elementary level, whereas its proportion surged to 7.5% at the lower-intermediate level and 11.0% at the upper-intermediate level.

**TABLE 3**  
**Distribution of lexical aspect across learner proficiency and L1 backgrounds**

Country	Level	Activity	Accomplishment	Achievement	State
ENS		29 (39.2%)	16 (21.6%)	19 (25.7%)	10 (13.5%)
CHN	A2_0	19 (55.9%)	8 (23.5%)	7 (20.6%)	0
CHN	B1_1	20 (50.0%)	9 (22.5%)	8 (20.0%)	3 (7.5%)
CHN	B1_2	40 (54.8%)	13 (17.8%)	12 (16.4%)	8 (11.0%)
JPN	A2_0	21 (67.7%)	6 (19.4%)	4 (12.9%)	0
JPN	B1_1	15 (78.9%)	3 (15.8%)	1 (5.3%)	0
JPN	B1_2	33 (64.7%)	8 (15.7%)	4 (7.8%)	6 (11.8%)

*Note.* ENS indicates English native speakers; CHN indicates Chinese EFL learners; JPN indicates Japanese EFL learners.

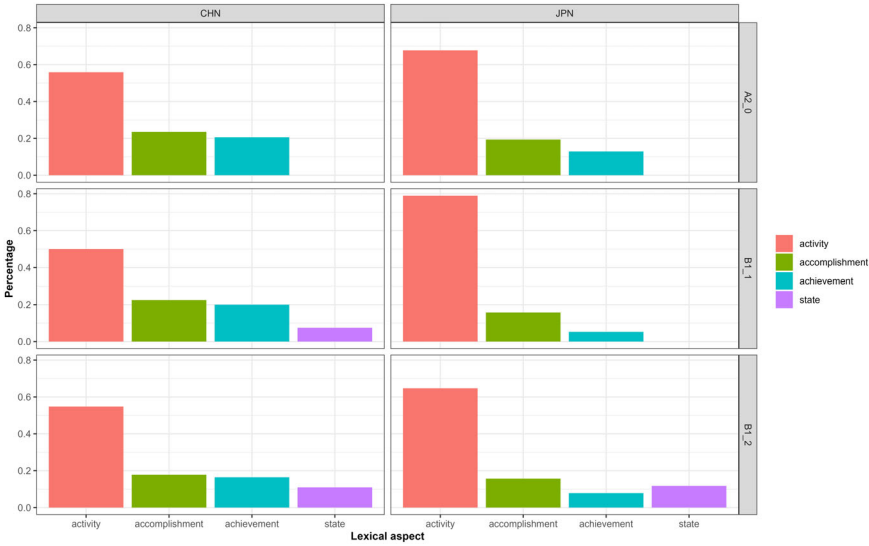


FIGURE 1. Distribution of the four lexical aspect categories within the progressive construction by proficiency.

Similarly, the use of states increased from zero at the elementary level to 11.8% at the upper-intermediate level for Japanese EFL learners.

In addition, Japanese EFL learners used a lower proportion of stative and achievement verbs (less prototypical verbs) compared to Chinese EFL learners at all three proficiency levels (A2\_0 level: 20.6% vs. 12.9%; B1\_1 level: 27.5% vs. 5.3%; B1\_2 level: 27.4% vs. 19.6%). This discrepancy may stem from negative L1 transfer effects. Specifically, the Japanese progressive marker *-te-iru* more frequently combines with achievement verbs to indicate resultative states rather than progressive meaning (Shirai & Nishi, 2005). As such, Japanese EFL learners may suppress the urge to transfer *-te-iru* in production to English progressive, since it does not convey progressive meaning with achievement.

It is worth noting that progressive marking did not extend to stative verbs for either Chinese or Japanese EFL learners at elementary level. This finding aligns with Hypothesis (4) of the aspect hypothesis that progressive markings are not incorrectly overextended to statives (Andersen & Shirai, 1996). However, with increased learner proficiency, the use of stative verbs in progressive emerged, specifically at the upper-intermediate level for Chinese EFL learners (eight tokens, 11%) and upper-intermediate level for Japanese EFL learners (six tokens, 11.8%).

A closer check of the instances of the stative verbs in progressive found that verbs indicating emotions and opinions are frequently

used, such as *feel* and *think*, as illustrated in sample sentences (a) and (b).

- a. You are quite difficult to focus when you are *feeling* particularly studious.
- b. At that time, I was *thinking* that part-time job was very fun.

Given that the corpus is based on the argumentative essays, it is possible for higher proficient learners to widely adopt opinion or emotion-related stative verbs to express their view. This result was consistent with Wu and Wang (2020) and Rautionaho and Deshors (2018). Both studies pointed out the effect of genre variation on the progressive construction production. For instance, Rautionaho and Deshors (2018) argued that progressives combined with achievement is to some degree characteristic of academic writing. Building on this foundation, the present research intimates that the use of stative verbs in progressive could be emblematic of argumentative writing.

### Association between Verbs and Progressive Construction

**Correlations of verb-progressive construction associations between L1 and L2 corpora.** To depict the development of progressive construction across learner proficiency and determine whether there is an effect of L1 transfer, we calculated the correlation of progressive production between each learner corpus and native speaker corpus, which serves as the reference corpus (see Table 4 in detail). Correlation analyses are useful in gauging the degree of similarity between L2 learner production and native speaker usage. A stronger correlation suggests a more native-like use of the progressive by L2 learners.

Table 4 shows that, for Chinese EFL learners, there was no significant correlation in progressive production between either A2\_0

**TABLE 4**  
**Correlations for Progressive Construction Associations between Native and Non-native Corpora**

	Level	<i>r</i> -values	<i>p</i> -values
CHN	A2_0	0.255	0.679
	B1_1	0.428	0.289
	B1_2	0.679	0.004*
JPN	A2_0	−0.250	0.685
	B1_1	0.557	0.443
	B1_2	0.615	0.104

*Note.* \*Indicates  $\leq 0.05$ ; CHN indicates Chinese EFL learners; JPN indicates Japanese EFL learners.

learners or B1\_1 learners and English native speakers. However, a significant and strong positive correlation ( $r$ -value = 0.679;  $p$ -value = 0.004) was observed between B1\_2 learners and English native speakers.

These results suggest that Chinese EFL learners' use of the progressive gradually approaches that of native speakers with the increase of proficiency. This pattern is consistent with Wu and Wang (2020), who reported no significant correlation between the verb-progressive association of native speakers and lower-intermediate learners. In contrast, they found a significant positive correlation between advanced learners and native English speakers.

However, no significant correlation was found between English native speakers and Japanese EFL learners at any proficiency level. The observed discrepancy in the use of the progressive between Japanese and Chinese EFL learners might be attributable to the influence of their respective L1 backgrounds.

### **Variation in verb-progressive construction contingency across L2 proficiency levels and L1 backgrounds**

*Contingency of verb-progressive construction in Chinese EFL learners.* To examine the development of progressive construction, we probed into the changes in verb-progressive construction contingency across L2 proficiency and L1 backgrounds. In the present study, we measured verb-progressive construction contingency using  $\Delta P$ . Notably, a larger positive  $\Delta P$  value signifies a stronger association between the verb and the progressive construction. Table 5 presents the top 10 progressives in verb-progressive construction contingency for Chinese EFL learners, ranging from the elementary level to the upper-intermediate level. The lexical aspect of each verb was indicated in brackets next to the verbs.

Table 5 reveals that at the A2\_0 level, out of the top 10 progressives in contingency among Chinese EFL learners are activity verbs, the prototypical verbs of the progressive aspect. However, at the B1\_1 and B1\_2 levels, the number of activity verbs among the top 10 decreases to only 4. In contrast, less prototypical verb types make up the majority of the top 10 progressive verbs at these higher levels. Notably, the number of stative verbs in the top 10 progressives increases from zero at the A2\_0 level to two at the B1\_1 level (i.e., *think* and *lack*) and three at the B1\_2 level (i.e., *dream*, *want*, and *live*). Specifically, verbs denoting opinion, intention, and feeling, emerge among the top 10 progressives in contingency for higher level learners.

Overall, these results indicate a shift from mainly prototypical activity verbs in low level learner progressive usage, towards more frequent

**TABLE 5**  
**Top 10 Contingency of Verb-progressive Construction in Chinese EFL Learners**

CHN_A2_0		CHN_B1_1		CHN_B1_2	
Progressive	$\Delta P$	Progressive	$\Delta P$	Progressive	$\Delta P$
Rise (ACT)	1.00	Argue (ACT)	0.75	Talk (ACT)	0.25
Talk (ACT)	0.33	Rise (ACT)	0.50	Dream (STA)	0.25
Increase (ACT)	0.25	Kill (ACH)	0.33	Taste (ACC)	0.25
Kill (ACH)	0.25	Suffer (ACT)	0.33	Spread (ACT)	0.20
Become (ACH)	0.21	Hurt (ACC)	0.33	Enter (ACC)	0.16
Walk (ACT)	0.17	Think (STA)	0.28	Increase (ACT)	0.15
Suffer (ACT)	0.14	Lack (STA)	0.25	Become (ACH)	0.12
Breathe (ACC)	0.12	Disturb (ACC)	0.20	enjoy (ACT)	0.10
Enjoy (ACT)	0.12	Become (ACH)	0.15	Want (STA)	0.03
Protect (ACT)	0.09	Work (ACT)	0.06	Live (STA)	0.03

*Note.* CHN\_A2\_0 indicates Chinese EFL learners at the elementary level; CHN\_B1\_1 indicates Chinese EFL learners at the lower-intermediate level; CHN\_B1\_2 indicates Chinese EFL learners at the upper-intermediate level.

ACT, activity verbs; ACC, accomplishment verbs; ACH, achievement verbs; STA, state verbs.

use of less prototypical verb types like statives in high level learners. This trend may be influenced by genre variation. Notably, argumentative essays, the focus of this study, may demand more use of stative verbs to express opinion and attitude than other genres. It may also result from the effect of L1 transfer (here Chinese). Except for *zai-*, Chinese EFL learners may also associated *-zhe* in Chinese with progressive marker *-ing* in English, which is frequently used with stative verbs in Chinese.

It is worth noting that the extension of stative verbs to progressive forms, as in “*He is **wanting** to collect this series of stamps*” in CHN\_B1\_2, is not necessarily non-standard. Since our primary focus was on the developmental trajectories of progressive use across all four lexical aspects among Japanese and Chinese EFL learners, rather than on the standard use of progressive statives within these groups, we did not discuss this issue in the following sections. Further examination of the standard and non-standard uses of progressive stative verbs across learner proficiency and L1 backgrounds may be warranted in future studies.

**Contingency of verb-progressive construction in Japanese EFL learners.** Table 6 presents the top 10 progressives in verb-progressive construction contingency for Japanese EFL learners from the elementary level to the upper-intermediate level. The lexical aspect of each verb is indicated in brackets next to the verbs.

As shown in Table 6, at the A2\_0 level 8 out of the top 10 progressive verbs are activity verbs. The only exceptions are one achievement verb (i.e., *begin*) and one accomplishment verb (i.e., *spread*). By the

**TABLE 6**  
**Top 10 Contingency of Verb-progressive Construction in Japanese EFL Learners**

JPN_A2_0		JPN_B1_1		JPN_B1_2	
Progressive	$\Delta P$	Progressive	$\Delta P$	Progressive	$\Delta P$
Spread (ACC)	0.50	Develop (ACT)	0.33	Suffer (ACT)	0.33
Rise (ACT)	0.50	Sit (ACT)	0.20	Belong (STA)	0.33
Increase (ACT)	0.20	Spread (ACC)	0.20	Prepare (ACT)	0.25
Walk (ACT)	0.20	Look for (ACC)	0.14	Grow (ACC)	0.25
Put (ACH)	0.20	Enjoy (ACT)	0.04	Decrease (ACT)	0.16
Begin (ACH)	0.11	Work (ACT)	0.04	Plan (ACT)	0.16
Decrease (ACT)	0.07	come (ACH)	0.04	Change (ACH)	0.14
Play (ACT)	0.06	Eat (ACT)	0.03	Dream (STA)	0.14
Work (ACT)	0.04	Learn (ACT)	0.02	Increase (ACT)	0.08
Eat (ACT)	0.02	Smoke (ACT)	0.01	Eat (ACT)	0.05

*Note.* JPN\_A2\_0 indicates Japanese EFL learners at the elementary level; JPN\_B1\_1 indicates Japanese EFL learners at the lower-intermediate level; JPN\_ B1\_2 indicates Japanese EFL learners at the upper-intermediate level. ACT indicates activity verbs; ACH indicates achievement verbs; ACC indicates accomplishment verbs; STA indicates state verbs.

B1\_1 level, the list still largely comprises activity verbs, but now includes two accomplishment verbs (i.e., *develop* and *look for*) and an achievement verb (i.e., *come*). Progressing to the B1\_2 level, we observe a notable shift with two stative verbs (i.e., *belong* and *dream*) featuring among the top 10 progressives.

These results indicate that activity verbs consistently dominate the top 10 progressives in contingency for Japanese EFL learners across all three proficiency levels. Additionally, stative verbs only start strongly associating with the progressive construction at higher proficiency levels, unlike lower levels. This aligns with findings for Chinese EFL learners. However, a difference emerges in the proficiency level when stative progressives emerge—for Chinese learners this happens at lower-intermediate levels already, while for Japanese learners it only occurs at upper-intermediate level. This variation may stem from differences in L1 backgrounds: Japanese EFL learners may be more cautious of transferring *-te-iru* to English progressive except for activities and accomplishments, compared with Chinese EFL learners.

## DISCUSSION

### Effect of L2 Proficiency on Progressive Construction Acquisition

In our study, we noted that the productivity of verb usage in progressive constructions, as indicated by the TTR, improved with higher



proficiency levels for both Chinese and Japanese EFL learners. This finding aligns with the results of Wu and Wang (2020) and Garner (2022), who observed that as learners' proficiency increased, they exhibited a broader range of verbs in the progressive construction. These findings support the aspect hypothesis, as learners appear to develop their understanding of the progressive construction concurrently with their increasing proficiency, demonstrating an enhanced knowledge of the relationship between tense-aspect morphology, and the lexical aspect of verbs.

In addition, this result also suggests that low-proficiency learners depend on a limited set of "pathbreaking" verbs (e.g., *increase* and *become*) to acquire the progressive aspect. This confirms previous research on L2 progressive (Wu & Wang, 2020; Wulff et al., 2009) and L1 and L2 VACs (Ellis et al., 2014; Ellis & Ferreira-Junior, 2009; Goldberg, Casenhiser, & Sethuraman, 2004), which showed that the most frequent and prototypical verbs for a construction take the largest share.

As mentioned earlier, the increase in normalized entropy values as proficiency levels rise suggests that learners' verb usage in progressive constructions becomes more varied and unpredictable, reflecting a more native-like distribution. This observation aligns with the usage-based approach (Tomasello, 2003), which emphasizes that language acquisition is driven by learners' exposure to and experience with language use.

However, our result contrasts with Römer and Garner (2019), who proposed that there was a general trend of higher proficiency learners exhibiting greater predictability in their construction production. In other words, learners with a lower proficiency level are less predictable in construction production. Such an inconsistency may stem from two methodological differences: the type of construction and the level of EFL learners. While Römer and Garner (2019) examined five VACs at phrasal level (e.g., 'V *about* n' and 'V *for* n'), we focused on the progressive construction at morpheme level. Moreover, Römer and Garner (2019) mainly analyzed advanced learners. In contrast, we investigated learners from elementary to intermediate levels.

Additionally, our result does not seem to support the Lexical Insensitivity Hypothesis (LIH), which suggests that the effect of lexical aspect intensifies with higher levels of proficiency (Tong & Shirai, 2016; Zeng et al., 2019, 2023). Specifically, Zeng et al. (2023) observed a stronger association between progressive marking and prototypical lexical aspect categories (activities) as proficiency increases by examining the spoken and written corpus data of Chinese EFL learners. In contrast, our study does not show a similar tendency for higher-level learners to use more prototypical verbs in the progressive form. This

discrepancy with previous studies supporting the LIH could be attributed to differences in the proficiency levels examined. Zeng et al. (2019, 2023) examined high-intermediate (B1 and B2) and advanced (C1 and C2) proficiency levels, whereas our study focused on lower proficiency levels (A2\_0, B1\_1, and B1\_2). These results suggest that the effect of LIH may be more prominent at proficiency levels that are intermediate or higher. To further validate LIH, future research should explore a broader spectrum of learner proficiency, ranging from elementary to intermediate and advanced levels.

## Effect of L1 Transfer on Progressive Construction Acquisition

Our findings underscore the impact of L1 transfer on the acquisition of the English progressive construction. While both Chinese and Japanese EFL learners demonstrated enhanced TTR and normalized entropy values with increasing proficiency, some differences were observed between the two groups. Notably, a significant positive correlation in progressive production emerged between the native speaker corpus and Chinese EFL learners at higher proficiency levels. Conversely, there was no significant correlation observed between Japanese EFL learners and native speakers across all proficiency levels. Additionally, at the upper-intermediate level, Chinese EFL learners exhibit a greater prevalence of stative verbs within their top 10 progressives compared to their Japanese counterparts.

These differences suggest a role for L1 transfer in shaping the learners' usage of verbs in progressive constructions, aligning with prior research (e.g., Andersen & Shirai, 1996; Robison, 1990; Rocca, 2007; Zeng et al., 2019). For example, both Zeng et al. (2019) and Robison (1990) found that Spanish ESL learners are more likely to extend the progressive aspect to stative verbs compared to other EFL groups. Zeng et al. (2023) proposed that this overgeneralization might stem from language transfer from Romance imperfectives (e.g., Spanish and Italian). In contrast to these studies, the present study suggests that such language transfer is not limited to Romance imperfectives but extends to other languages like Japanese and Chinese.

In particular, *-te-iru* in Japanese is more frequently associated with achievement verbs to convey resultative states than with activity verbs indicating progressive meaning (Shirai & Nishi, 2005). Consequently, Japanese EFL learners may exercise caution in transferring *-te-iru* to the English progressive marker *be V-ing*, especially for achievement and stative verbs. This sensitivity to transferability could constrain the use

of stative progressives in Japanese EFL learners' progressive production. Furthermore, the distinct way of denoting stativity in Japanese (attaching the durative aspect marker *-te-iru* to achievement verbs) compared with Chinese and English may also contribute to the lesser overgeneralization of progressives to stative verbs (Shirai, 2000; Shirai & Nishi, 2002).

Concerning Chinese EFL learners, the recurring coupling of *-zhe* with stative verbs in Chinese may contribute to the acceptance of stative progressives in English by Chinese learners. As proposed by Smith (1991), *-zhe*, as a resultative stative, may gradually adopt the function of *zai-* to convey progressive meaning.

To further determine the specific forms that Chinese EFL learners associate with the English progressive *be V-ing* structure, we conducted a simple structured questionnaire. The survey presented respondents with six distinct options: “*zai-*,” “*-zhe*,” “*ne*,” “both *-zhe* and *zai-*,” “*-zhe*, *zai-*, and *ne*,” and “other,” with the stipulation that respondents select only one choice that best represents their association. From the collected data ( $n = 50$ ), the distribution of responses was as follows: “*zai-*”: 20% ( $n = 10$ ); “*-zhe*”: 16% ( $n = 8$ ); “both *-zhe* and *zai-*”: 50% ( $n = 25$ ); Other choices combined: 20%.

Utilizing a chi-square goodness-of-fit test, we found that the observed choices of the learners were not evenly distributed as might be expected by chance ( $\chi^2(5) = 34.628$ ,  $p < 0.05$ ). This significant result indicates that there is indeed a preference among the options. Particularly, the combination “both *-zhe* and *zai-*” was the most favored, representing 50% of the responses. This empirical evidence suggests a notable association among Chinese EFL learners between both “*zai-*” and “*-zhe*” and the English progressive construction. Consequently, the increased use of stative progressives by Chinese EFL learners may stem from this prevalent association of both “*zai-*” and “*-zhe*” with the English progressive.

However, our findings are inconsistent with the results of Fuchs and Werner (2018), who found that the number of stative progressives was very limited for EFL learners, regardless of the presence of a progressive in the learners' L1. Such an inconsistency may result from the genre differences. Compared with the mixed genres used by Fuchs and Werner (2018), the present study exclusively focused on argumentative essays, which may require more stative verbs to express opinion and attitudes. It is worth noting that Fuchs and Werner (2018) concentrated on EFL learners at beginning and lower intermediate levels, whereas our investigation spanned from elementary to upper intermediate levels. Moreover, Zeng et al. (2023) observed that advanced EFL learners use more non-prototypical verbs in progressive (i.e., stative verbs) than intermediate learners in both speech and writing.

Collectively, these studies suggest that as proficiency grows, EFL learners gradually increase the use of stative progressives (Smith, 1983). Such an increase may stem from the increase of input or exposure. As proficiency advances, EFL learners are likely exposed to more instances of stative progressives, predisposing them to adopt this non-prototypical usage (Zeng et al., 2023).

In summary, our findings reveal the influences of both proficiency level and L1 transfer on the acquisition of the English progressive construction. The increased productivity, TTR, and normalized entropy values as proficiency levels rise support the usage-based approach, highlighting the importance of language exposure and experience in language acquisition. Moreover, the differences between Chinese and Japanese EFL learners suggest that learners' L1 backgrounds might shape their grasp of the relationship between tense-aspect morphology and the lexical aspect of verbs, indicating the need for a refined understanding of the aspect hypothesis (4).

## CONCLUSION

Based on 600 argumentative essays produced by Chinese and Japanese EFL learners from the elementary level to the upper-intermediate level, the present study probed into the development of the progressive construction in EFL writing by a usage-based approach. Specifically, we have investigated the effect of L1 transfer and learner proficiency on the acquisition of progressive construction.

For research question 1, results show that regardless of learners' L1 backgrounds, higher proficiency EFL learners are more productive in using progressive and more in line with English native speakers compared with the EFL learners at low proficiency.

As for research question 2, the use of progressive markings is predominantly associated with its prototype (activity verbs) for all six learner corpora, thus consistent with the prediction of the aspect hypothesis. However, the use of stative verbs in progressive increases with learner proficiency for EFL learners.

Concerning research question 3, results show that a significant positive correlation of progressive production between Chinese EFL learners and native English speakers emerges at upper-intermediate level indicating that more proficient learners use the progressive aspect in a way that is closer to native usage. However, for Japanese EFL learners at any of the proficiency level, no significant correlation was found. This result can be attributed to the effect of L1 transfer. In addition, regarding the top 10 progressives across each L1 background and learner proficiency, results show that activity verbs occupy the

largest proportion in most cases. However, with the increase of learner proficiency, other less prototypical types of progressive also emerge among the top 10 progressives.

Several implications can be derived from the present study. Theoretically, the present study tested the aspect hypothesis and emphasized the potential effect of L1 transfer as well as learner proficiency on grammatical construction learning. Methodologically, the present study testified the applicability of usage-based approach in examining morpheme construction learning.

The current study has several limitations. Firstly, it is limited to three proficiency levels and two L1 backgrounds. To enhance the understanding of the effect of these factors on construction acquisition, future research should broaden the range of learner proficiency and L1 backgrounds. Secondly, the proficiency rating adopted in ICNALE is not consistently aligned with the high-stakes English proficiency tests because of data availability constraints. It is recommended that future studies utilize corpus data featuring learners rated under same high-stakes English proficiency tests. This approach will enable more reliable comparisons across proficiency levels. There are also two limitations stemming from the corpus we adopted: the use of a spell-checker and the relatively modest size of the corpora at certain proficiency levels. To further test our findings, future research could examine the effect of spell-checker usage on progressive production, thus exploring the interplay between technology and language learning. Furthermore, embracing a large-scale corpus would bolster the reliability and generalizability of subsequent studies.

## CONFLICTS OF INTEREST

None.

## ETHICAL APPROVAL

Ethical approval is not applicable for this article.

## STATEMENT OF HUMAN AND ANIMAL RIGHTS

This article does not contain any studies with human or animal subjects.

## STATEMENT OF INFORMED CONSENT

There are no human subjects in this article and informed consent is not applicable.

## CONTRIBUTION AND FUNDING

Both Gui Wang and Li Wang conceptualized the study. Gui Wang designed the methodology and wrote the initial draft of the manuscript. Gui Wang also led the data collection and was responsible for the primary statistical analysis. Li Wang played a significant role in refining the study's design, supervised the data collection process, and provided crucial feedback for data interpretation. Both Li Wang and Hui Wang reviewed, edited, and contributed to the finalization of the manuscript. Gui Wang, Hui Wang, and Li Wang read and approved the final version of the manuscript for submission. They have agreed to be accountable for all aspects of the work, ensuring that questions related to the accuracy or integrity of any part of the work are appropriately investigated and resolved.

This work was supported by the General Project of Shanghai Education Science Research (No. C2024197) and the Major Project of National Social Science Fund: Innovative Research on Second Language Acquisition Theory in Comparison with International Chinese Education (No. 23&ZD320).

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## APPENDIX A

### OPERATIONAL TESTS FOR LEXICAL ASPECT (SHIRAI, 2013: 283-284)

*Operational tests for lexical aspect* (Each test is used only in the clauses remaining after the preceding test):

*Step 1: State or non-state?* Does it have a habitual interpretation in simple present tense?

If no → State (e.g., *I love you.*)

If yes → Non-state (e.g., *I eat bread.*) → Go to Step 2

*Step 2: Activity or non-activity?* Does “X is Ving” entail “X has Ved” without an iterative/habitual meaning? In other words, if you stop in the middle of Ving, have you done the act of V?

If yes → Activity (e.g., *run*)

If no → Non-activity (e.g., *run a mile*) → Go to Step 3

*Step 3: Accomplishment or achievement?* If test (a) does not work, apply test (b), and possibly (c).

(a) If “X Ved in (Y time; e.g., 10 min)”, then “X was Ving during that time”.

If yes → Accomplishment (e.g., *He painted a picture*)

If no → Achievement (e.g., *He noticed the picture*)

It needs to be noted that it is possible to say X was Ving even right after X began the action that led to the goal.

(b) Is there ambiguity with “almost”?

If yes → Accomplishment (e.g., *He almost painted a picture has two readings; i.e., He almost started to paint a picture and He almost finished painting a picture.*)

If no → Achievement (e.g., *He almost noticed the picture has only one reading.*)

(c) “X will VP in (Y time; e.g., 10 min)” = “X will VP after (Y time)”.

If no → Accomplishment (e.g., *He will paint a picture in an hour is different from He will paint a picture after an hour, because the former can mean He will spend an hour painting a picture, but the latter does not.*)

If yes → Achievement (e.g., *He will start singing in 2 minutes can have only one reading, which is the same as in He will start singing after 2 minutes, with no other reading possible.*)