

Telicity in L2 Chinese Acquisition

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1. Introduction

The interaction between syntactic structures and event structures has become an important area of linguistic research. The telic/atelic distinction, a property of an event having or not having a natural endpoint, is a focus in the discussion of this interaction. Together with durativity and dynamicity, telicity, a semantic notion, forms the base of the well-known Vendler (1967) four-way typology of verb classes: states, activities, accomplishments and achievements. Since Vendler's monumental work, scholars have reached a general agreement that complex events have an internal structure which is associated with telicity. Ritter and Rosen (2000) have taken a further step and proposed an event-structure typology of languages: Delimitation languages (D-languages), such as Chinese, English, in which telic verbs of accomplishments and achievements pattern together and the terminal bound determines eventhood; and Initiation languages (I-languages), such as Japanese, in which a grammaticalized event has an initial bound, and activities and accomplishments pattern together as events.

Language acquisition researchers at the same time have observed the primacy of telicity in acquisition process as well, especially in the acquisition of tense-aspect. Many studies on this topic have found that language learners show a clear sensitivity to the telic/atelic distinction. Both L1 and L2 learners exhibit a universal tendency: 1) they initially restrict perfective marking to telic verbs (accomplishments and achievements) and later expand it to atelic predicates (states and activities); 2) they initially restrict imperfective marking to atelic verbs and later expand it to telic verbs; 3) their progressive marking starts with dynamic and atelic activity verbs and later extends to telic verbs, but it is never overextended to stative verbs. This universal learning pattern is what is known as the Aspect Hypothesis (Weist et al 1984, Andersen 1991, Shirai and Andersen 1995, Andersen and Shirai 1996).

The present study follows the new development in the event structure typology and looks further into the telicity effect in L2 acquisition. We choose two groups of learners: speakers of Japanese (an initiation language) and speakers of English (a delimitation language). We investigate how the two groups acquire a Chinese (a delimitation language) terminal bounding structure - the *ba*-construction. The *ba*-construction is a major sentence structure in Mandarin Chinese, with the direct object placed after the preposition-like *ba* and before the verb. This structure is subject to two strict restrictions: the predicate must be telic and the NP following *ba* must be definite or specific. The data we have used for the investigation are production data from a large L2 written Chinese corpus. Our focus is on how typological differences in event structure would affect L2 telicity acquisition. We have two main research questions:

- 1) How differently are the Japanese speakers and English speakers sensitive to the telic property of the Chinese *ba*-construction?
- 2) How differently do the two groups of learners syntactically express telicity in their *ba* sentences?

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2. Research background

2.1 Telicity and telicity in language acquisition

The interaction between event structure and syntactic structure has attracted much attention in recent linguistic research (Van Voorst 1988, Pustejovsky 1991, Tenny 1994, Levin & Rappaport Hovav 1995, Ritter & Rosen 1998, 2000, Tenny & Pustejovsky 2000, Travis 2000, O'Bryan 2003, Wilhelm 2003, and more). The thought of grammar representing events, as summarized in Tenny and Pustejovsky (2000:4-5), goes back to Reichenbach (1949) and subsequently Davidson's influential 1967 paper, where it was proposed that predicates of natural language explicitly take an event as one of their arguments. The thought of verbs having aspectual and temporal structure goes back to Aristotle's typology of events, yet, it is Vendler's 1967 paper that marks the beginning of linking aspectual structure of verb meaning to linguistic features. The three temporal properties of telicity, durativity and dynamicity underlie Vendler's (1967) four-type classification of verbs (3):

(3) Aspectual classification of verbs

- | | |
|--|--------------------------------------|
| ● States: static, durative, atelic | <i>know the answer, love Mary</i> |
| ● Activities: dynamic, durative, atelic | <i>laugh, stroll in the park.</i> |
| ● Accomplishments: dynamic, durative, telic | <i>build a house, walk to school</i> |
| ● Achievements: dynamic, instantaneous, telic | <i>win the race, reach the top</i> |

This classification of verbs has since been the foundation of the linguistic investigation of the semantics-syntax interface and language acquisition. The four classes have often been grouped on the basis of telicity: the atelic class that includes states and activities, and the telic class that includes accomplishments and achievements. The telic/atelic distinction (Smith 1991) has often been referred to in the literature as the bounded/non-bounded distinction (Verkuyl 1972, Jackendoff 1990), or the delimited/non-delimited distinction (Tenny 1994).¹ This distinction is a focus in the discussion of event structure. In the following, we will summarize some insights or agreements that have been reached in the study of this area.

First, the verb is not the only factor for determining the aspectual nature of the event, other elements such as arguments of verbs or adjuncts contribute to the determination of event types as well. For example, the addition of a delimiting element (e.g. a resultative) to an atelic activity verb could change the predicate to a telic category (see 4a-4b). Thus, delimiting elements have a special status in the determination of the event type. Languages have various delimiting strategies. The three major delimiting elements summarized by Tenny (1994) are: verb particles, resultatives, the dative argument in double object construction.

- (4) a. He pushed the door. (atelic)
 b. He pushed the door open. (telic)

The second observation is that there is a strong association between telicity and interpretation of the direct object. Telic predicates are associated with definite objects and atelic predicates with plural or bare object NPs.

Third, researchers have analyzed complex events into inner and outer events. Outer events are associated with causation and agency, and inner events are associated with telicity and change of state.

The fourth widely observed fact is language learners' strong sensitivity to the telic/atelic distinction as captured by the well-known Aspect Hypothesis. Regardless of the language they are learning, both L1 and L2 learners show a consistent pattern of treating telic predicates differently from

¹ Some linguists distinguish telicity from boundedness. Smith (1991) refers to telicity as potential, inherent endpoints, and boundedness as actual endpoints. However, many researchers use the terms interchangeably. In this study, we will not distinguish the two.

atelic predicates in aspect marking. To account for this universal tendency researchers have focused on three major factors: innateness, input, and L1 effect. Bickerton's Language Bioprogram Hypothesis (1981) suggests that distinctions between states and processes and between punctuality and non-punctuality are biologically preprogrammed. Children can map the distinctions onto linguistic categories *a priori*. Slobin's Basic Child Grammar (1985) adopts the same line of universal predisposition, and further points out that between the two basic semantic notions of process and result, result is particularly salient to children. However, Brown (1973), Stephany (1981) and Shirai (1994) have observed that the consistent pattern of using particular aspectual markers to verbs with particular aspectual value actually reflects the skewed distribution of verb inflections in the input. Recently, Li and Shirai (2000) have proposed the Prototype Hypothesis and argue that the prototypes, such as the prototype past (past tense with telic verbs), the prototype of progressive (progressive with dynamic and atelic verbs), are frequent in the input, so learners create their prototypes through distributional analysis of the input.

L1 transfer is found to play a role in L2 tense-aspect acquisition. As languages vary in pattern and degree of grammaticalization of the temporal system (Li and Shirai 2000), the variation has effect on L2 temporal acquisition. The effect could be subtle. For example, in Shirai and Kurono's study (1998) on the use of Japanese progressive *-te i-* by Chinese speakers, they find that the Chinese speakers use *-te i-* more often with activity verbs, while *-te i-* can be affiliated with achievements in Japanese to highlight a resultative state. Shirai and Kurono attribute this to the effect of the similarity between the Chinese progressive marker *zai* and Japanese *-te i-* which share the function of progressive but not resultative meaning.

2.2 The event-structure typology: delimitation languages and initiation languages

Most studies have focused on the final endpoint as the internal temporal make-up of eventuality. Some other researchers (van Voorst 1988, Borer 1996, Ritter and Rosen 1998) proposed that event structure has two temporal bounds: the initial bound and the terminal bound, and both initiation and termination (telicity) of event structure are grammatically presented. This is the base on which Ritter and Rosen (2000) have proposed a new language typology, the event-structure typology of languages: delimitation languages and initiation languages. The two types of languages have the following distributional properties:

(5) The properties of D-languages and I-languages

- In D-languages, the terminal bound determines eventhood. Delimited predicates of accomplishments and achievements form a natural class and D-languages grammaticalize distinctions among objects, such as specificity/definiteness of objects, case marking or person. English and Chinese belong to D-languages.
- In I-languages, the initial bound determines eventhood. Activities and accomplishments form a natural class. These languages grammaticalize distinctions among subjects, such as agentivity, animacy, and make grammatical distinction between topic and subject. Icelandic and Japanese, for example, are I-languages.

Ritter and Rosen argue that an event structure is determined by functional projections (FPs) of subject agreement (Agr-s) and object agreement (Agr-o). The initiating FP (Agr-sP) is associated with event initiation and the delimiting FP (Agr-oP) is associated with event termination. "Since Agr-s assigns nominative Case to the subject and Agr-o assigns accusative Case to the object, initiation and termination of the event are expressed in the subject and object, respectively" (for the details of the syntax of events of this typology, see Ritter and Rosen 2000: 196-199).

English, Chinese and Japanese are three of the seven example languages that Ritter and Rosen have used to illustrate D-languages and I-languages. English is a D-language, because English consistently treats delimited predicates differently from non-delimited activities and states. For example, in English, causativization is only available if the predicate is delimited (6). Aspectual particles in

English only delimit the predicate, and there are no initiating particles (7).

- (6) Bill danced.
 *Sue dance Bill. (non-delimited)
 Sue danced Bill across the room. (delimited)

- (7) John cleaned the room (in an hour/for an hour).
 John cleaned the room up (in an hour/*for an hour).

In an I-language, only agents can be initiators. Japanese belongs to the I-language category. This language does not allow the so-called instrument subject alternation (8), and it doesn't allow non-agents with structural nominative Case, either.

- (8) a. Tom-ga doa-o aketa
 Tom-nom door-acc opened
 'Tom opened the door.'

- b. *kagi-ga dao-o aketa.
 Key-nom door-acc opened
 'The key opened the door.'

2.3 Telicity prominence in Chinese and the *ba*-construction

It has long been observed by Chinese linguists that predicates in Chinese are subject to some restrictions, that is, bare verbs are very limited in occurring alone as predicates and predicates in Chinese are usually in complex form. For example, a declarative sentence would sound unnatural or incomplete if its predicate is a bare verb. To make the sentence natural, we must add something after the verb such as an aspect marker, or a resultative, or a quantifier, or a directional verb, or a locative PP (see 9 as an example). For some syntactic structures, such additional elements are obligatory, otherwise, sentences are ungrammatical. The *ba*-construction is one of these structures.

- (9) a. ? ta du xiao-shuo. (bare verb)
 She read novel
 'She read novels.'
- b. ta du-wan xiao-shuo le. (verb + resultative)
 She read-finish novel PER
 'She has read a nove.'
- c. ta du le yi-tian xiaoshuo. (verb + time quantifier)
 She read PER one-day novel
 'She has read the novel for a day.'

This no-bare-verb restriction has traditionally been used as an explanation to related individual structures. Recently a number of Chinese linguists have started to analyze this no-bare-verb phenomenon as a whole from the perspective of event structure (Lu 1988, Kong 1994, Huang 1994, Shen 1995, Yang 1995, Shi 1999, 2002). They point out that it is the boundedness that these structures require. As bare verbs may not be sufficient to provide boundedness, additional delimiting elements thus serve the bounding purposes. That is why bare verbs are restricted and complex predicates are common in Chinese. Shi's recent book (2002) has provided a detailed description and discussion on the historical development of resultative construction between the eighth and twelfth centuries and on how this development has significantly affected the establishment of the grammar of the Modern Chinese. One of the big changes brought by the emergence of resultative, according to Shi, is the boundedness

requirement on predicates. "Resultatives serve to make the predicate semantically bounded through defining a telic point to the matrix verb. As resultative phrases increased, it became a syntactic requirement that the predicate must be bounded by some means. As a result, bare verbs are greatly limited in their ability to occur alone as predicate." (p. 234)

Ritter and Rosen's proposal of the event-structure typology to categorize Chinese as a delimitation language comes at the very right time. This generalization plus the analysis of both diachronic and synchronic data by Chinese linguists has provided a convincing demonstration on the significant role of events in the Chinese grammar. Comparing Chinese with English, we find that Chinese is a more D-language than English. By this, we mean that Chinese has stronger features in delimitation. English shows delimitation features in more limited structures like causativization or with verbal particle distribution. However, in Chinese, delimitation is consistently an obligatory requirement for five common structures: the *ba*-construction, the *bei*-construction, topicalization, the patient-subject construction, and verb-copying. Sentences of these structures will be ungrammatical if the predicates are unbounded. Besides, the four of them (except verb-copying) are also subject to the restriction of definiteness of the patient, another telicity associated feature (For the details of discussion of semantic and syntactic features of these constructions, see Yang 1995, Shi 2002). Here we take the *ba*-construction as an example to illustrate the telicity requirement in Chinese.

The *ba*-construction (NP - *ba* NP - V - XP) is a basic and major sentence structure in Chinese with the direct object placed after the preposition-like *ba* and before the verb, and very often the verb is followed by a secondary predicate XP. Chinese is basically a SVO language, yet because of the *ba*-construction, the SVO word order co-exists with the SOV in Chinese. It is this *ba*-construction that Ritter and Rosen (2000) used to show the D-language features of Chinese in their typology proposal. The *ba*-construction is a perfect example for the discussion of grammaticalization of event structure in syntax. This structure is subject to two strict restrictions: the object NP following *ba* must be definite, or referentially specific. And the predicate must be telic, either being achievement and accomplishment verbs with inherent endpoints or taking delimiting elements (XP) to indicate the change of state or the change of position. This structure co-occurs with the perfect marker *-le*, but not the progressive marker *zai*. The *ba*-sentences are ungrammatical if the two conditions are not satisfied (10).

- (10) a. **ta ba yi-ben xiaoshu du.*
 She BA one-copy novel read
 'She read a novel.'
- b. *ta ba na-ben xiaoshu kan-wan le*
 she BA that-copy novel read-finish ASP
 'She has finished reading that novel.'

The telicity or boundedness prominence in Chinese is not only manifested in its involvement with major structures in the language, such as the *ba*-construction, but also in its rich delimiting system. Take resultatives as an example. Chinese has syntactic resultative clause (introduced by the particle *de*), and also a very productive Verb-Adjective_{resultative} (VR) compounding process. This type of compounds holds an "action-result" relationship indicating the change of state brought out by the action. There is no restriction on the formation of a VR as long as the resulting state caused by the action makes sense (11a). Theoretically, all monosyllabic adjectives can occur as resultatives (Lu 1996) (see 11b).

- (11) a. *ya-bian* 'press-flat'
yao-bian 'bite-flat'
zuo-bian 'sit-flat'
- b. *ya-ta* 'press-collapse'
ya-xiao 'press-small'
ya-bo 'press-thin'

Another syntactic category functioning as provider for delimitation is the productive Verb-Verb_{direction} compounding. The second component of the compound, the directional verb, denotes a

change or shift of the location brought out by the first verb. There are altogether 24 directional verbs in Chinese available for this compounding, with only one condition that a directional verb goes with a verb involving destination. Here are some examples: *guo-lai* 'pass-come: come over here', *guo-qu* 'pass-go: go over there'. In addition to the richness of delimiting elements, Chinese also specifies the postverbal position as delimitation location. All the delimiting elements are postverbal. In a word, Chinese is a delimitation language.

3. Present study

3.1 Data

The present study analyzed L2 Chinese production data of two groups of learners: English speakers and Japanese speakers. The data source is the 2,000,000-word L2 Chinese Interlanguage Corpus developed by the Beijing Language and Culture University (BLCU). This is a written discourse corpus containing essays by non-Chinese students with various first language backgrounds and of different proficiency levels. BLCU offers various intensive Chinese language-training programs to non-Chinese speakers. The Corpus ranks the students' proficiency levels according to which semester they were in at the time when the data were collected. With this reference, we grouped the two groups of learners into four proficiency levels: beginning (first year students), lower Intermediate (second year students), upper intermediate (third year students), and advanced (fourth year students). We downloaded all the *ba* sentences used in the essays by the two groups: 721 by L1 Japanese speakers and 293 by L1 English speakers. Here, we must point out that data in this corpus are not evenly distributed across different L1s. Japanese speakers have been the largest student population of BLCU and there are much fewer English speakers, so the corpus contains more essays by Japanese students and fewer essays by English speakers. More students are taking a 2-year program than a 4-year program, so in the current corpus (it is still under construction), there are more essays in the beginning and intermediate levels, but much fewer at the advanced level. Table 1 is the distribution of the *ba*-sentences collected from the two groups of learners.

Table 1: Distribution of the *ba* sentences by Japanese and English speakers

	Beginning	Low intermediate	High intermediate	Advanced	Total
L1 Japanese	226	262	185	48	721
L1 English	149	92	51	1	293
Total	375	354	236	49	1,014

We analyzed the data in two steps. First, we analyzed the distribution of telic *ba*-sentences and atelic *ba*-sentences used by the two groups to see how sensitive the learners were to the telic/atelic distinction. Any sentences with any delimiting elements were considered as telic *ba*-sentences because they could delimit otherwise non-delimited predicates, and the sentences without delimiting elements were judged based on the lexical property of the verbs in the sentences. Sentences with accomplishment verbs and achievement verbs belong to telic sentences, while sentences with stative and activity verbs are atelic sentences. Second, we looked into the delimiting types (XP) of the complex predicates in telic *ba*-sentences to see how the two groups of learners express telicity. Delimiting elements make crucial contributions to the telicity of predicates. Slabakova (2001) calls them aspect-related constructions and points out that they are related manifestations of the same parameter value that postulates telicity encoding through the cardinality of the objects. We categorized these XPs into four major types (see 12). The ones do not belong to the four types are classified as 'others'.

(12) The major delimiting types

- directionals/locatives
e.g. ta ba wo fang zai hou-zuo shang
he BA me put on back seat
'He put me on the back seat.'
- resultatives (compounds)
e.g. wo ba shu du-wan le
I BA book read-finish PER
'I have finished reading the book.'
- resultatives (*de*-clause)
e.g. tai-yang ba he ying-de tong hong
sun BA river reflect-DE very red
'The sun made the river red.'
- the dative arguments in double object structure
e.g. ta ba wo dang-cheng da-ren.
he BA I take-as adult
'He took me as an adult.'

4. Results and discussion

4.1 The telicity primacy

Table 2 gives the distribution of telic and atelic *ba*-sentences used by Japanese speakers and English speakers at four levels. The telic *ba*-sentences here include all the sentences with boundedness, either those with telic verbs of achievements and accomplishments or those with any delimiting elements.

Table 2. Distribution of telic and atelic *ba*-sentences by the two groups of L2 Chinese learners at four levels

	Beginning		Low Intermediate		High Intermediate		Advanced		Total	
	Jap	Eng	Jap	Eng	Jap	Eng	Jap	Eng	Jap	Eng
Telic (n)	203	136	240	91	180	50	47	1	670	278
(%)	89.82	91.28	91.6	98.91	97.30	98.04	97.92	100	92.93	94.88
Atelic (n)	23	13	22	1	5	1	1	0	51	15
(%)	10.18	8.72	8.4	1.09	2.70	1.96	2.08	0	7.07	5.12
Total (n)	226	149	262	92	185	51	48	1	721	293

Table 2 shows that both groups demonstrate an overwhelming use of telic predicates in their *ba*-sentences, averagely 92.93% for the Japanese group and 94.88% for the English group. Only around 5% to 7% of the total *ba*-sentences by the two groups are atelic sentences. Even at the beginning level, 89.82% of the *ba*-sentences used by the Japanese speakers and 91.28% by the English speakers are sentences with telicity. There is no significant difference between the two groups on the average use of telic *ba*-sentences ($x^2 = 1.307$, $df = 1$, $p < 0.253$). However, the two groups show some interesting difference in the use of telic predicates across proficiency levels. In the Japanese group, the significant difference is found between the beginning and the high intermediate learners ($x^2 = 8.952$, $df = 1$, $p < 0.003$); and between the low intermediate and the high intermediate learners ($x^2 = 6.195$, $df = 1$, $p < 0.013$). That means the Japanese speakers' telicity sensitivity gets significantly stronger at high intermediate level. In the English group, the only significant difference is between the beginning and

the low intermediate learners ($\chi^2 = 6.064$, $df = 1$, $p < 0.014$). That means the English speakers' telicity sensitivity gets significantly stronger at low intermediate level, one level earlier than the Japanese speakers.

The two groups also show a strong sensitivity to the associated feature of bounded events: the definiteness of direct objects. Chinese doesn't have articles or number marking, so bare NPs which are indefinite in English, are not necessarily indefinite in Chinese. NPs in the preverbal position usually have referential or specific meanings in Chinese. Only when the indefinite numbers are used, may the object NPs be possibly indefinite. Following this rule, we only find 14 indefinite object NPs after *ba* in the sentences by the Japanese group, that is only 2% of the total 721 *ba*-sentences. There are only 13 indefinite object NPs in the sentences by the English group, which accounts for 4.41% of their total *ba*-sentences. The two groups are very close in showing awareness to the incompatibility of indefinite object to the *ba*-construction.

So, to our first research question of how differently the two groups of learners are sensitive to the telic property of the *ba*-construction, the answer is: the typological difference in event structure between English and Japanese does not show strong effect in the learners' sensitivity to this telicity restriction at least in the production data when the learners use the *ba*-construction at their own will. Both groups of learners demonstrate this sensitivity even at the beginning level of L2 Chinese learning with 90%-91% of their *ba* sentences affiliated with bounded predicates. This strong sensitivity is consistent with the findings of the learners' intuitive distinction to telic/atelic properties in tense/aspect acquisition generalized by the Aspect Hypothesis (Weist et al 1984, Andersen 1991, Andersen and Shirai 1996, Shirai and Andersen 1995). It has been widely reported that in the early stages of acquisition of tense/aspect morphology, both L1 children and L2 adults show a universal tendency of making perfective on telic verbs and imperfective on atelic verbs (see Weist 2002 for the review of L1 acquisition and Bardovi-Harlig 2000 for the summary of L2 acquisition). However, under this strong tendency, the two groups of learners in our investigation also show some subtle difference. That the English speakers had a significant increase of the telic predicates in their *ba*-sentences one proficiency level earlier than the Japanese speakers may be related to the L1 effect. The delimitation property of the English event structure may have facilitated, in a subtle way, the English speakers in acquiring the boundedness of the Chinese *ba*-construction than the initiation property of the Japanese event structure.

4.2 The delimiting preference

Now, let's answer our second research question of how the two groups of learners syntactically express telicity in their *ba* sentences. This time we separate telic *ba*-sentences with XPs (sentences with directional verbs or locational PPs or resultatives or any other postverbal time words which quantifiers the event) from the telic sentences without XPs (sentences simply with accomplishment or achievement verbs)². The following Table 3 presents the frequency of delimiting XPs used in the telic *ba*-sentences by the two groups at four levels. The table shows that both groups of learners behave very similarly. Around 93% of the telic *ba*-sentences used by both groups have delimiting elements (XPs) and only about 7% of them have simple predicates. Using delimiting elements to add telic property rather than simple achievements or accomplishments alone is the major strategy of expressing telicity from both groups of learners, and again typological difference in their L1s does not show a strong effect on the *ba* acquisition from this finding.

² The perfective marker *le* is traditionally considered as a delimiting element by Chinese linguists. *Le* normally accompanies the *ba*-construction to indicate a termination. In this paper, we focus more on the syntactic categories of XPs the learners apply to their *ba*-sentences, so we do not categorize *le* as an XP in our analysis.

Table 3: Distribution of telic *ba*-sentences with and without delimiting XPs

	Beginning		Low inter		High inter		Advance		Total	
	Jap	Eng	Jap	Eng	Jap	Eng	Jap	Eng	Jap	Eng
Telic with XP (n)	192	129	224	87	162	44	45	1	623	261
(%)	94.58	94.85	93.33	95.60	90	88	95.74	100	92.99	93.88
Telic without XP(n)	11	7	16	4	18	6	2	0	47	17
(%)	5.42	5.15	6.67	4.40	10	12	4.26	0	7.01	6.12
Total (n)	203	136	240	91	180	50	47	1	670	278

The sixty-four telic *ba*-sentences without XPs of the two groups (47 from the Japanese group and 17 from the English group) all have achievement and accomplishment verbs. Among them, *wang* 'forget', *gai* 'change' and *diu* 'lose', each having been used 5 times, are the most frequently used telic verbs in our data. These three verbs account for 23% of telic *ba*-sentences without XPs. Other verbs in this category are: *fen-li* 'separate', *sha* 'kill', *xie* 'write', *ke-fu*; 'overcome' etc. Here are some examples from the data.

- (13) Si-lin ba men kai le (Japanese, High intermediate)
 Si-lin BA door open PER
 'Si-lin opened the door.'
- (14) Xiang-zi ba che diu le (Japanese, High intermediate)
 Xiang-zi BA rickshaw lose PER
 'Xiang-zi has lost his rickshaw.'

To further analyze the delimiting strategy applied by the learners, we broke down the delimiting types. The following Table 4 shows the distribution of delimiting types of the two groups. The majority of XPs fall into three groups: directionals/locative PPs, dative arguments in double object structure and resultatives in VR compounds. These three major delimiting strategies account for 79% of the total 721 *ba*-sentences used by the Japanese speakers, and 81% of the total 293 *ba*-sentences used by the English speakers. There is a similar ordering of the choice of delimiting strategies by the two groups: directionals/locatives → dative arguments in double objects → resultative compounds → resultative *de*-clauses. Around 40% of the *ba*-sentences by both groups have directionals /locatives as XPs, while only around 16% (by the Japanese speakers) and 19% (by the English speakers) have resultatives (VR compounds plus *de*-clauses). Resultatives have usually been considered as the major secondary predicates of the *ba*-construction by Chinese linguists. In his recent book, Shi (2002) comments that "the predicate of the *ba* construction must be complex, typically a VR phrase" (p. 204). However, in our L2 data, directionals/locatives have been used twice as much as resultatives in delimiting events. Another point that needs to be noticed is the rare use of resultative *de*-clauses in the L2 *ba*-sentences (only around 2% to 4%). The most important point that Table 4 shows is that the two groups are remarkably similar in applying delimiting strategies.

Table 4: Distribution of delimiting types by the two groups

Delimiting (XP) Types	Japanese group (721 <i>ba</i> -clauses)		English group (293 <i>ba</i> -clauses)	
	n	(%)	n	(%)
Directionals/ locatives	295	(40.92)	115	(39.25)
Dative arguments (Double objects)	177	(24.55)	78	(26.62)
Resultatives (VR compounds)	98	(13.59)	43	(14.68)
Resultatives (<i>de</i> -clauses)	14	(1.94)	13	(4.44)
other XPs*	39	(5.41)	12	(4.10)
Total	623	(86.41)	261	(89.08)

*Other XPs are delimiting elements of time quantifiers, verb-coping, etc.

Here are some examples from the learners.

- (15) ta ba qian fang zai gui-tai shang (location)
 he BA money put on counter above
 'He put the money on the counter.'
- (16) mei-mei ba wo-de ke-ben xi-po le (resultative)
 sister BA my textbook tear-broken PER
 'My sister tore my textbook up.'

The finding here has answered our second research question. Both groups of learners show a strong preference of using delimiting elements to express boundedness of the *ba*-construction. Their first choice is directionals and locative PPs. The double object structure and resultative compounds are the next favorite delimiting elements in their *ba* sentences. The preference for direction and location change is also found in Chinese children's development of the *ba*-construction. Zhou's (1997) finding from his cross-sectional study of Chinese children from the age 1;5 to 5;0 shows that children's earliest *ba* sentences were with directional verbs and locative phrases, and next appeared resultatives. These two types remained to be the major delimiting elements until 4 years old.

This preference for the location change in the *ba*-construction may be explained by human perception of events. The perception of motion is considered as the earliest and most basic human experiences and motional changes - changes of location, are considered more basic and salient than other types of changes (Miller and Johnson-Laird 1977, Günter 1996). So the learners may easily associate the requirement of change of the *ba*-construction with the basic and salient change of location. This possible association can be supported by our another finding from the data. The two groups not only show a preference for direction and location phrases as delimiting elements, but also show a preference for a small group of manipulation verbs as main verbs to indicate the change of location.

Among 295 *ba*-sentences with directional/locative PPs by the Japanese speakers, 119 verbs are used. We find that five of them are most frequently used: *fang* 'put', *na* 'take', *song* 'send', *dai* 'carry', *ren* 'throw'. Though, the five verbs are only 4.20% of the total verbs used (119) in the directional delimiting *ba* sentences, they have been used 108 times, that is 36.61% of the whole 295 *ba*-sentences. The same five verbs are also the most frequently used by the English speakers in their 110 directional delimiting *ba*-sentences. The five verbs are only 8.20% of the totally used 61 verbs in this category, but they have been used 41 times, that is 37.27% of the whole 110. The percentage of the use of these five verbs by the two groups are very close, 36.61% vs. 37.27%. Table 5 shows the frequency of the use of the five verbs.

Table 5: Frequency of the five most frequently used verbs by the two groups

Speakers	<i>put</i> <i>f</i>	<i>take</i> <i>f</i>	<i>send</i> <i>f</i>	<i>carry</i> <i>f</i>	<i>throw</i> <i>f</i>	Total <i>f</i>
Japanese	44	17	16	16	15	108
English	15	6	5	8	7	41
Total	59	23	21	24	22	149

4.3 The selection problem

With the overwhelming number of telic *ba*-sentences by the two groups, we may think that since the learners are so aware of the telicity restriction, they may have no big problem in acquiring this structure. However, our analysis of the errors shows that the *ba*-construction is a challenging structure for both groups. Table 6 presents the error distribution of the two groups.

Table 6: Distribution of *ba* errors by the two groups at four levels

	Beginning		Low intermediate		High intermediate		Advanced		Total	
	Error	correct	Error	correct	Error	correct	Error	correct	Error	correct
Jap (n)	83	143	88	174	22	163	6	42	199	522
(%)	36.73	63.27	33.59	66.41	11.89	88.11	12.50	87.50	27.60	72.40
Eng (n)	45	104	13	79	11	40	1	0	70	223
(%)	30.20	69.80	14.13	85.87	21.57	78.43	100	0	23.89	76.11
Total (n)	128	247	101	253	33	203	7	42	269	745

The average error rate of the two groups is very close, 27.60% for the Japanese group and 23.89% for the English group. However, there are some differences across the levels between the two groups. The Japanese groups made more errors than the English group at the beginning and low intermediate levels, 36.73% versus 30.20% at the beginning level; and 33.59% vs. 14.13% at the low intermediate level. Though there is no significant difference at the beginning level ($\chi^2 = 1.700$, $df = 1$, $p < 0.192$), but there is significant difference at the low intermediate level ($\chi^2 = 12.642$, $df = 1$, $p < 0.000$). The error rates of the Japanese group decrease steadily as the proficiency level increases. But the picture of the English group is not so clear with a rate fluctuating across the four levels. As there is only one case of the *ba*-sentence from the advanced level of the English speakers, it is difficult at this point to compare the four levels of this group.

Most of the errors in the *ba*-sentences are caused by inappropriate use of either delimiting elements or verbs. The directionals and locative PPs are the most favored delimiting elements for the *ba*-sentences by the two groups, but they are also the ones the two groups have made most errors with. Around 40% of errors are related with the inappropriate selection of directionals/locative PPs or verbs. (17) and (18) are two examples.

(17) *you-de sun-zi ba ya-shui-qian cun xia-qu
 some grandchildren BA pocket- money save descend-go
 'Some grandchildren saved their pocket-money.'

(18) *wo-men jing-li-er-wei ba ta dai hui-lai ri-ben ba
 we try-our-best BA him bring return-come Japan
 'We will try our best to bring him back to Japan.'

The problem of the two sentences are with the underlined predicates. In (17), 'save' is a non-destination verb and cannot take the directional verb *xia-qu* 'descend-go'. In (18), the destination verb *dai* 'bring' matches the directional verb *hui-lai* 'return' very well. '*dai hui-lai*' is a legitimate Verb-directional compound, but this compound cannot take a postverbal object. (18) is ungrammatical because this Verb-directional has 'Japan' as an object. The specific selection of directionals for the

Verb-directional compounds and of resultatives for the Verb-resultative compounds is a language specific feature. Both groups of the learners show a good understanding of the mapping of the *ba* form with the telicity meaning, yet, both groups show the difficulty in handling this specific feature.

5. Conclusion

Ritter and Rosen's newly proposed language typology based on event structure has grouped Chinese and English together as delimitation languages which are sensitive to termination of events in contrast to Japanese, an initiation language which is sensitive to the initiation of events. This typological difference between Japanese and English does not seem to affect obviously their speakers in acquiring a telicity restricted *ba*-construction of Chinese. Both groups of learners show: 1) a strong sensitivity to the telicity constraint on the *ba*-construction; 2) a strong sensitivity to the incompatibility of bounded event with indefinite object; 3) a preference for complex predicates (V + delimiting elements); and 4) a preference for directionals/locative PPs for the delimiting strategy. These findings have provided further evidence to support learners' intuitive distinction of telic/atelic properties in event structure.

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