

# The Effects of Two Usages and Animacy on the Acquisition of Ergative Verbs by Chinese University Learners of English

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## ABSTRACT

Given that there are ergative verbs in both Chinese (L1) and English (L2), Chinese learners of English (CLE) can easily master both transitive and intransitive usages of English ergative verbs as long as the L1 positive transfer occurs. This research aims to explore what and how factors influenced the accuracy of English ergative verbs tested by Chinese university learners of English with quantitative methods. One hundred intermediate level Chinese university learners of English were selected to test the usage of 15 ergative verbs in a grammatical judgement test (GJT). After paired t test and a two-way analysis of variance (ANOVA) analysis, the results reflected that there are two factors (usages of ergative verbs and animacy of subjects) influenced the participants' accuracy of tested English ergative verbs. To be more specific, first, sentences of intransitive usages are harder to judge correctly than those of transitive ones. Second, sentences including inanimate subjects are more problematic to judge grammatically than those containing animate subjects. Third, the participants found it most challenging to correctly judge sentences with inanimate subjects in intransitive usages.

**Keywords:** *ergative verbs, usages, animacy of subjects.*

## 1. INTRODUCTION

Chinese is a split-ergative language which shows the mixed characteristics of both ergative case and accusative case contains more ergative verbs than English which is a typical Nominative-accusative language [1]. The ergative verbs, allowing the mismatch between theta role and structural case on the surface form, cause ambiguity in language acquisition. There are similar properties of some ergative verbs in Chinese (L1) and English (L2); however, it does not mean facilitating acquiring the English ergative construction (similarity in a language contributes to the similar construction learning in another language according to Contrastive Analysis Hypothesis (CAH) raised by Robert Lado in 1957 [2]). Even advanced CLE sometimes cannot make a distinction of all ergative verbs perfectly and make some errors.

What factors affect the L2 learners' acquisition of English ergative verbs has been the subject of considerable debate. Silvina Montrul focused on the syntactic factor that English lacks overt morpheme marks [3]. Takako Kondo argued the overpassivization errors by Japanese Learners of English (JLE) were due to Japanese

morphological patterns [4]. Many studies emphasized the L2 learners whose mother tongues with overt morpheme marks, but ignored languages lacking morpheme marks. However, both Chinese (L1) and English (L2) are relatively lack of morpheme marks on the surface form and Chinese contains more ergative verbs than English. Thus, CLE should have acquired English ergative verbs effortlessly. This study will analyze the GJT marks of 100 selected Chinese university students with intermediate English proficiency through paired t-tests and two-way ANOVA, in order to investigate how the usage of English ergative verbs and the animacy of the subject affect the participants' accuracy.

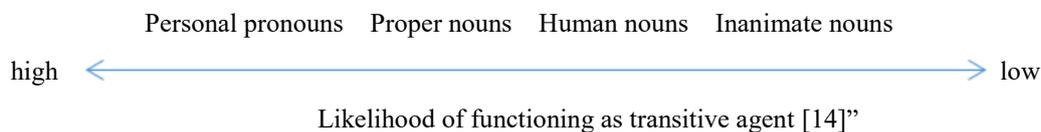
After introducing the aim of the study in Section 1, Section 2 is the theoretical framework, which contains the definition and classification of ergative verbs, the semantic property of subject nouns and previous researches about the acquisition of English ergative verbs by L2 learners. Afterwards, the experiment is showed in Section 3. In addition, results and discussion are presented in Section 4 and Section 5 respectively, followed by is the conclusion in Section 6.

## 2. THEORETICAL FRAMEWORK

### 2.1 Ergative Verbs

The terminology of “ergative verb” and related theory were originated from the western linguistics. In 1959, Tesnière suggested the “Ergative structure” (it refers to a kind of passive construction) [5]. Afterwards, in 1978, the Unaccusative Hypothesis by David M. Perlmutter made a distinction between simple intransitive verbs implying volitional control and unaccusative/ergative verbs which do not [6]. What is more, ergative verbs were defined by Luigi Burzio in 1986: “Ergative verbs refer to verbs which are subcategorized for a direct object and which do not assign a subject theta-role [7].” According to this definition, there are two options for a subcategorized object. Firstly, it can stay in the object position. Secondly, it also can move to the subject position. For instance, The sun melted the ice. (Tai41yang35 rong35hua51 le xue214. in Chinese) The ice melted. (Xue214 rong35hua51 le. in Chinese)

In Chinese academia, in spite of reserved opinions of Shuxiang Lv, Zhengde Huang, Liejiong Xu & Yang Shen, Siying Deng and so on are positive about ergative verbs and studied ergative verbs and related phenomena from semantic and grammatical views [5]. With respect to classification of ergative verbs, Virginia Yip divided ergative verbs into two groups: unpaired ergative verbs (UPEVs) without alternative transitive/causative counterparts and paired ergative verbs (PEVs) [8]. In addition, Mengxiang Wang, Yang Liu, Houfeng Wang, and Longkai Zhang assumed the requirement of ergative verbs: those verbs that can enter into “NP1+V+NP2” and “NP2+V” are ergative verbs, and also divided ergative verbs into two classes. Typical ergative verbs refer to verbs containing causative features, while the rest are named after atypical verbs [5]. Additionally, Jie Fan also divided ergative verbs into 2 types according to internal differences in transitivity, causativity, and volition. The first are unary ergative verbs indicating spontaneous and uncontrollable changes in events, with low transitivity “The potentiality of agency scale



The diagram (1) reveals that the animate nouns, especially the personal pronouns (e.g., you, I, he, etc.) tend to be agents/subjects. On the contrary, inanimate nouns (e.g., window, ice, chair, etc.) do not prefer to be agents/subjects.

### 2.3 The L2 learners

Yip took CLEs into consideration, studying the overpassivization of interlanguage (Chinglish) by Subset Principle and Uniqueness Principle and argued that their errors involved a complex interaction of semantics and

and obvious non-volitional tendency. And the second are binary ergative verbs with higher transitivity and obvious causative tendency [9].

Regarding the generative process of ergative verbs, Samuel Jay Keyser & Thomas Roeper suggested that ergatives are derived from transitive verbs by NP-movement applied in the lexicon [10]. On the other hand, Helmut Zobl argued against this point of view based on his corpus of interlanguage (IL) data [11]. In fact, second language learners may fail to complete the movement in their lexicon; therefore, there should be lots of mistakes in their utterance. However, there are no examples of over-generalization of the ergative rule applied to transitive verbs in Zobl’s corpus [11]. Therefore, it is controversial whether the generative process of ergative verbs comes from NP-movement and it needs further research.

### 2.2 The Semantic Property of Subject Nouns

Momoko Ikeuchi held the view that one of the traces from primitive human languages is that the theta role of an agent is generally put at the first position in a sentence, which is a subject place normally [12]. That is, a general relationship between a syntactic position and semantic role is that a subject plays a role of Agent and an object plays a role of Patient/Theme [13]. Therefore, such sentences as e.g., Jenny ate an apple. are said most with both semantic and syntactic views. Since both Chinese and English are Subject-Verb-Object (SVO) languages, it is effortless for people to understand, acquire and produce “Agent-Verb-Patient” (AVP) order.

If a subject is an agent, this subject will do something about the verb action. Additionally, the semantic feature of the subject is [+animate], especially human actively behaving according to the meanings of verbs. Hence, it is more acceptable that animate things stay in the places of subjects and inanimate things stay in the places of objects. Therefore, language learners should be influenced by the animacy of subjects to some extent.

syntactically [15]. What is more, Montrul carried out an experimental study and found it difficult for Spanish learners of English (SLE) to accept the English ergative verbs with intransitive usages since English lacks overt morpheme mark on the surface form [3]. Moreover, Ayano Otaki and Tomohiko Shirahata suggested the

difficulty of English ergative verbs usages for JLE is attributed to semantic properties of subjects to a large extent by a grammaticality judgment task [13]. To be more specific, if a sentence has inanimate subject in intransitive usages, JLEs have most difficulty judging grammaticality correctly. However, Otaki and Shirahata only chose 65 adult JLEs with relative low English level, which means the samples are not representative enough. Also, Abdullah Can studied the acquisition of English ergative verbs by only 50 Turkish learns and held the view that PEVs are most challenging for Turkish students [16]. However, there are not many experimental studies about CLEs learning English ergative verbs.

**3. EXPERIMENT**

**3.1 Statistics Analysis Methods**

This research used paired t test to compare whether there is a significant difference in the mean scores between two groups ([+Transitive] & [-Transitive]); [+Animate] & [-Animate]), since the scores of tested sentences (dependent variable) are interval variables and usages ([±transitive] and animacy ([±animate]) as the independent variables are nominal variables.

Additionally, a two-way analysis of variance (ANOVA) was applied for the mean scores to check if four types of sentences tested were statistically different; Usages ([+Transitive] & [-Transitive]) × Animacy ([+Animate] & [-Animate]) were within-participant variables. An alpha level of .05 was used in this study.

**3.2 Participants**

The participants are one hundred CLEs who are

**Table 1.** Four Categories of Test Sentences

Category	Sentence Category	Examples
A	[+transitive] & [+animate subject]	Dad closed the door.
B	[+transitive] & [-animate subject]	The corporation opened the new office.
C	[-transitive] & [+animate subject]	Tom and Jenny separated 3 months ago.
D	[-transitive] & [-animate subject]	The ship sank.

The GJT tested four various categories of sentences containing fifteen different English ergative verbs. Hence, there were sixty test questions (4×15) which are grammatically right sentences.

There are two instances of the GJT in (3) for a transitive usage and (4) for an intransitive usage. Context sentences were written in Chinese and test sentences were written in English. This research asked the 100 participants to judge if the underlined usage of each sentence tested was grammatical.

undergraduates in an ordinary university in China. Also, they have learned English for more than ten years and come from different majors: arts, science, engineering and so on. In addition, they are comparatively intermediate English proficiency in that their grades of College English Test Band 4 (CET-4) are between 425 and 600, which are roughly equivalent to B degree of International English Language Testing System (IELTS).

**3.3 Material and Procedures**

Ergative verbs tested in this study. This study has chosen fifteen ergative verbs which all generally play an important role in middle school English textbooks as target verbs. This research utilized The English Vocabulary Lists Learned at Junior High School ([13]) to pick the ergative verbs. Actually, these 15 ergative verbs are matched PEVs (MPEVs, refers to both Chinese paired ergative verbs and corresponding English counterparts are paired ergative verbs). They are reflected in (2).

Verbs tested in this experiment:

Ergative verbs (target verbs): begin, burn, close, decrease, drop, dry, grow, increase, mix, open, roll, separate, start, stop, turn

A grammaticality judgement test (GJT). The 100 participants were asked to complete grammaticality judgement tests of English ergative verbs to elicit language input. The test was an adapted version from Otaki and Shirahata with certain modifications. What is more, the answer option “Not sure” was excluded due to the challenge for this research to find out the the participants’ grammatical knowledge if they chose “Not sure” option.

(1) An example of an transitive test sentence

A. Context: Jenny felt stuffy because she closed the window for such a long period. As a result, (written in Chinese: Jenny gan214 dao51 men55 re51 yin55 wei51 ta55 hen214 jiu214 mei35 you214 kai55 chuang55 tong55 feng55 le)

B. Sentence tested: Jenny opened the window.

(2) An example of an intransitive test sentence

A. Context: Tom bought a can opener because he wanted to open this can. Consequently, (written in Chinese: Tom mai214 le yi55 ge51

qi214 ping35 qi51 yin55 wei214 ta55 xiang214 da214 kai55 zhe51 ge51 guan51 tou)

B. Sentence tested: This can opened easily.

The participants accomplished the test within approximately ten minutes although there was no time limitation. What is more, the researcher told the participants not to look up dictionary or go back to last questions they had finished.

**4. RESULTS**

This research tabulated the answers of participants by giving one mark for the right answer and zero for the false answer. As total 60 sentences are grammatical, the right

answer implies choosing A. option and the incorrect answer implies choosing B. option. Hence, one participant’s highest mark of is 60.

**4.1 Results 1**

Table 2. reveals the test outcomes of English ergative verbs with [±transitive] usages. The result of the paired t test shows that intransitive usages were significantly different from transitive usages on the marks of English ergative verbs ( $t(99) = 3.775, p < 0.01$ ). Inspections of the two group means indicate that the average score of intransitive usages (17.45) is significantly lower than that of transitive usages (19.53). The difference between the means is 2.08 marks of a 30- mark test.

**Table 2.** Comparison of Marks on [±Transitive] Usages (n=100)

Test Marks	Transitive Usages		Intransitive Usages		MD	t(99)
	M	SD	M	SD		
	19.53	6,01	17.45	5.34	2.08	3.775*

\*p<0.01

Note: 30 is the lowest mark per [±transitive] usage.

**4.2 Results 2**

According to Table 3., the [-animate] subjects were significantly different from [+animate] subjects on the accuracy of English ergative verbs ( $t(99) = 4.878, p <$

0.01). Inspections of the two group means indicate that the average score of [-animate] subjects (17.27) is significantly lower than that of [+animate] subjects (19.69). The difference between the means is 2.42 marks of a 30-mark test.

**Table 3.** Comparison of Marks on [±Animate] of the Subjects (n=100)

Test Marks	[+Animate]		[-Animate]		MD	t(99)
	M	SD	M	SD		
	19.69	5.67	17.27	4.82	2.42	4.878*

\*p<0.01

Note: 30 is the highest mark per [±animate] subject.

**4.3 Results 3**

A 2×2 between-subjects ANOVA was conducted with the marks of tested sentences as the dependent variable and usages ([±transitive]) and animacy ([±animate]) as the independent variables (Table 4.). The results indicated that there emerged a significant main effect for usages ( $F(1,56) = 4.830, p < 0.05$ ), with those transitive usages presenting significantly more marks than that of those intransitive usages. There also emerged a significant main effect for animacy ( $F(1,56) = 6.431, p < 0.05$ ), with those animate subjects presenting significantly more marks than that of those inanimate subjects. Also, there was a significant usages and animacy interaction ( $F(1,56) = 4.738, p < 0.05$ ).

For those ergative verbs with intransitive usages,

there emerged significant difference in marks between animate subjects and inanimate subjects ( $MD = 15, p < 0.01$ ), while for those ergative verbs with transitive usages, no significant difference could be found in marks between the two categories of subjects ( $MD = 1, p > 0.05$ ).

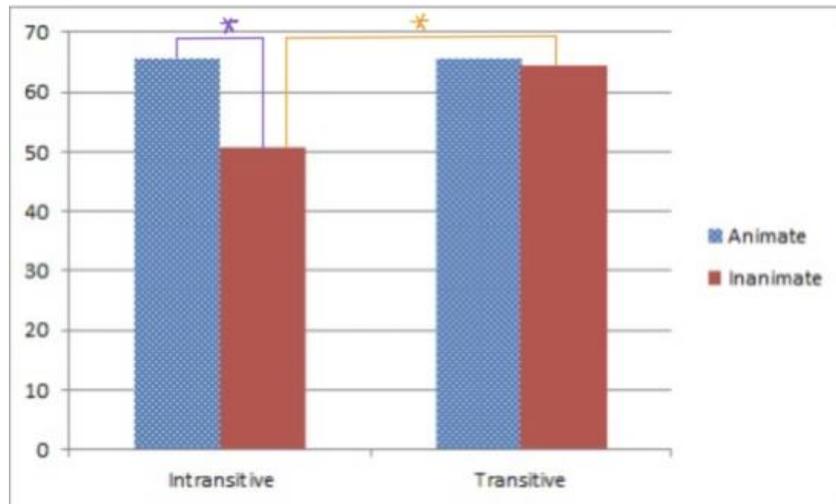
For those tested sentences with inanimate subjects, there emerged a significant difference in marks between the transitive usages and intransitive usages ( $MD = 14, p < 0.01$ ), while for those tested sentences with animate subjects, no significant difference could be found in marks between the two categories of usages ( $MD = 0.07, p > 0.05$ ).

Overall, the tested sentences which received the combined effect of intransitive usages and inanimate subjects presented substantially lowest marks than those under other conditions (Figure. 2.).

**Table 4.** Descriptive Statistics of Marks of Tested Sentences

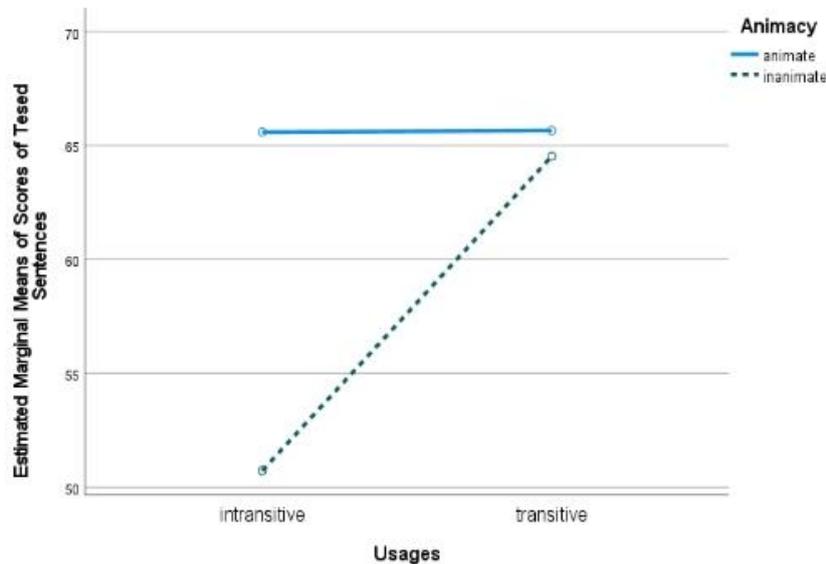
Marks	Intransitive Usages (n = 30)				Transitive Usages (n = 30)			
	[+Animate] (n = 15)		[-Animate] (n = 15)		[+Animate] (n = 15)		[-Animate] (n = 15)	
	M	SD	M	SD	M	SD	M	SD
	65.60	12.20	50.73	13.23	65.67	14.80	64.53	7.37

Note: 100 is the highest mark per sentence.



**Figure. 1.** Mean Marks of Tested 4 Types of Sentences

In figure.1., the purple \* suggests a significant difference within groups and the orange \* suggests a significant difference between two different groups.



**Figure. 2.** The Usages and Animacy Interaction on Marks of Tested Sentences

As Table 4. shows, the score of Type D sentence is lowest among all sentence types. Table 5. illustrates the overall results of 1500 Type D sentences ([ -Transitive] & [+Animate]) in our all tests of 100 participants. Clearly,

although 50.7% (761/1500) of the 100 participants' answers were correct, 49.3% (739/1500) of the 100 participants' answers were incorrect. In conclusion, the error rate of Type D sentences was fairly high.

**Table 5.** Results of Type D ([-Transitive] & [+Animate])

	Number	%
Correct	761	50.7%
Incorrect	739	49.3%
Total	1500	100.0%

## 5. DISCUSSION

Firstly, the participants had more difficulty mastering the intransitive usages of English ergative verbs than transitive usages. Actually, these fifteen tested ergative verbs are identical in intransitive usages both in Chinese (L1) and English (L2); however, the characteristics of Chinese (L1) ergative verbs with intransitive usages failed to map smoothly to those of English counterparts. Therefore, based on CAH, there was not positive transfer from Chinese (L1) to English (L2) when participants acquired English ergative verbs including intransitive usages. Also, it was significantly difficult to deal with the grammaticality of sentences with inanimate subjects than those with intransitive ones. Therefore, the participants failed to grasp English ergative verbs when the subjects of sentences is inanimate, which conforms to the universality of human languages based on the potentiality of agency scale raised by Dixon in 1979 [14].

In terms of ergative verbs including intransitive usages, sentences containing inanimate subjects (Type D sentences) were more challenging for the participants to understand than animate ones. One reason may be that they do not accept the situation that the patients/themes act as subjects in English sentence with intransitive usages of ergative verbs (Type D sentences). By interviewing a half of our participants who chose B.option of Type D sentences, they thought these ergative verbs should be expressed as passive forms. For example, a considerable large number of participants held the view that “The eggs separated.” should be revised to “The eggs were separated.”, because they believed that someone separated the eggs by physical force. Although it is common that patients/themes act as subjects in Chinese, the participants still failed to master the English counterparts.

However, it is seemed that the results about Type B sentences did not conform to the Potentiality of Agency Scale as there was not a difference in the mean scores between Type A sentences and Type B sentences significantly. One potential reason is that different from such inanimate subjects as can, tree, rice, the inanimate subjects in Type B were regarded as agents which can do actions. For instance, the inanimate subject “company” is a metaphor of people working in the company from the perspective of cognitive linguistics. Thus, the Potentiality of Agency Scale still works.

Some previous papers focused on the overpassivization of English ergative verbs by L2 learners with various cultural backgrounds. Montrul, Keiko Matsunaga, and Kondo paid more attention to negative L1 transfer from the morphological view in that Japanese and Spanish ergative verbs have different word forms for transitive usages and intransitive usages, whereas the English ones are just in the reverse. However, both Chinese and English relatively lack case markers on the surface form compared with other morphologically rich languages. Without the L1 negative transfer from case markers, the participants still failed to learn English ergative verbs perfectly due to the usages of ergative verbs and the animacy of subjects.

Finally, this research has some constructive suggestions to English teachers in China. First, when English teachers teach English ergative verbs to Chinese students, they are not supposed to just emphasize the semantic meanings. It is necessary for English teachers to focus on two usages of target English ergative verbs, especially intransitive ones. What is more, English teachers should demonstrate some examples with both animate and inanimate subjects, in particular inanimate subjects. Third, it is meaningful to pay most attention to Type D sentences whose marks were lowest among the four types. Eventually, although our English teachers do not have to tell their students the linguistic term “ergative verbs”, they can instruct students to consciously compare Chinese ergative verbs with their English counterparts, which may contribute to L1 positive transfer and facilitate learning English ergative verbs.

## 6. CONCLUSION

This paper suggests that the participants’ ambiguity of English ergative verbs is not only to be blamed to various usages of ergative verbs themselves, but also to the animacy of subjects to a large extent. To be more specific, sentences of intransitive usages are more problematic to judge correctly than those of transitive ones.. Also, sentences containing inanimate subjects were significantly tougher to judge right than those including animate ones. As a result, the participants significantly had the most trouble judging English ergative contractions with both inanimate subjects and intransitive usages. It is true that English ergative verbs were complicated for the Chinese university learners of English at intermediate English level to master properly.

The challenge of mastering English ergative verbs may be a quite common problem of L2 learners and we still need to further explore. With the framework of Principles and Parameters Theory proposed by Chomsky, in order to identify the universal regularities during acquisition of ergative verbs, researchers are expected to have linguistic typology perspective to investigate various L2 learners from other countries. Additionally, the participants of this research were at intermediate English level, so it is meaningful to study how advanced CLE will judge the tested sentences. What is more, it is necessary to explore the acquisition of ergative verbs by bilingual children and the directionality of cross-linguistic influence (CLI).

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