The Acquisition of English Verb Transitivity and Intransitivity and the Effects of Explicit Grammar Instruction by Japanese Learners of English :Focusing on English Ergative Verb Structures

愛知教育大学・静岡大学　博士論文

The Acquisition of English Verb Transitivity and Intransitivity and the Effects of Explicit Grammar Instruction by Japanese Learners of English : Focusing on English Ergative Verb Structures

日本語母語話者による英語の動詞の自他動性の習得と指導の効果検証

－ 英語能格動詞に焦点をあてて －

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Abstract

This dissertation has three purposes. The first is to examine how university Japanese learners of English (JLEs) acquire both transitive and intransitive English verbs after receiving English language education for six years at junior and senior high schools. Based on the empirical acquisition data collected from university JLEs, the second purpose is to investigate the factors that cause difficulty in acquiring transitivity and intransitivity of English verbs. Based on the acquisition data findings, the third purpose of this study is to demonstrate the effectiveness of the explicit grammar instruction I administrated in promoting JLEs' degree of comprehension of transitivity and intransitivity of English verbs in L2 classrooms.

It has been reported that many JLEs tend to confuse verb intransitive usage with verb transitive (Kondo & Shirahata, 2015a, 2015b; Oshita, 2000; Shirahata, 2015). They often judge ungrammatical intransitive sentences such as **Tom happened the accident* as grammatical and produce errors such as **The pen was appeared*. Moreover, they consider *This can opened easily* as grammatically wrong, and revise it to *This can was opened easily.* In this dissertation, I specifically focus on English ergative verbs that have both transitive and intransitive usage (e.g., *open, close, roll*).

In order to achieve these purposes, I conducted two studies: Study 1 and Study 2 within the framework of "Subject Development." In Study 1, I presented an empirical experiment focusing on JLEs' acquisition of English ergative verb structures. In particular, two factors were examined and discussed: (a) the influence from L1 transfer and (b) the animacy of sentential subject nouns. The Grammatical Judgement Task (GJT) was administered to examine JLEs' degree of comprehension of English ergative verb structures. Based on the discussion in Study 1, in Study 2, I presented another empirical experiment that tested the effect of explicit grammar instruction on English ergative verb structure through a series of GJTs – before, immediately after, and 13 weeks after instruction. Based on the results in Study 2, I offer reasons for the impact of effective teaching method of English grammar instruction about ergative verb structures.

The results of Study 1 indicate that JLEs were not significantly influenced by L1 syntactic transfer and thus, they have more difficulty in correctly judging the grammaticality of intransitive usages than transitive usages. Rather, the results reveal that animacy of

sentential subject nouns is the influential factor. Thus, JLEs have difficulty in interpreting sentences with [-animate] subject nouns more than those with [+animate] nouns. Moreover, the results reveal that intransitive usages with [-animate] subject nouns (e.g., *The can opened easily*) was the most difficult sentence type among four ergative verb structures. Many JLEs tend to revise them into passive forms (e.g., *The can was opened easily*).

These results imply that JLEs may seek objects to cause the verb action from outside the sentences since the inanimate subject noun cannot cause verb action. Hence, the Agent First principle (Jackendoff, 2002) seems to affect the interpretation of ergative verb structures. Promoting learners' proficiency levels may lead L2 learners to accurately comprehend the thematic roles of subject nouns in transitive and intransitive usages in L2. Therefore, it can be said that JLEs tend to utilize animacy on subject nouns.

Based on the results and discussions in Study 1, in Study 2, the explicit grammar instruction was conducted from two main perspectives: (i) promoting the participants' "noticing" of syntactic structures of ergative verb usages and (ii) allowing participants to notice animacy of subject nouns. The results of Study 2 reveal that the explicit grammar instruction was effective, and the effect was maintained for 13 weeks after the instruction session. After receiving the instructions, JLEs possessed the metalinguistic knowledge that the thematic role of Agent cannot be assigned to subject nouns in intransitive usages so that both animate and inanimate nouns can be placed on subjects. Therefore, it can be concluded that the contents and procedures I employed in explicit grammar instruction effectively enhanced an interpretation of English ergative verb usages by JLEs. The explicit grammar instruction improved their "noticing" and "comprehension" of both transitive and intransitive usages with ergative verbs. Thus, the assumptions proposed by Shirahata (2015): (i) grammatical items on which explicit instruction is effective and (ii) L2 learners for whom explicit instruction is effective – are applicable to the development of ergative verb usages by JLEs. Based on the findings in Study 2, I propose that the effect of explicit grammar instruction should be reconsidered and proactively introduced in L2 classrooms at universities.

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List of Abbreviations

ACC	Accusative Case	n.s.	Not statistically Significant
ANOVA	Analysis of Variance	OQPT	Oxford Quick Placement Test
CAUS	Causative	OR	Object Relative
CLEs	Chinese Learners of English	PASS	Passive
CLJs	Chinese Learners of Japanese	RC	Relative Clause
DP	Determiner Phrase	SD	Standard Deviation
EI	Explicit Instruction	SLA	Second Language Acquisition
FFI	Form-Focused Instruction	SLEs	Spanish Learners of English
FT/FA model	The Full Transfer / Full Access model	SOV	Subject-Object-Verb
GJT	Grammatical Judgment Task	SR	Subject Relative
IF	Input Flooding	SSH	The Shallow Structure Hypothesis
JLEs	Japanese Learners of English	SV	Subject-Verb
L1	First language	SVO	Subject-Verb-Object
L2	Second language	UG	Universal Grammar
M	Mean score	Vi	Intransitive verb
MEXT	the Ministry of Education, Culture, Sports, Science and Technology	VP	Verb Phrase
NOM	Nominative Case	VSO	Verb-Subject-Object
NP	Noun Phrase	Vt	Transitive verb

Chapter 1
Introduction

The purposes of this study are threefold. The first is to examine how university Japanese learners of English (JLEs) acquire English verbs which are both transitive and intransitive after receiving English language education for six years at junior and senior high school. Based on the empirical acquisition data collected from university JLEs, the second purpose of this study is to investigate what factors caused these students difficulty in acquiring transitivity and intransitivity of English verbs. The third purpose of this study, based on the findings from the acquisition data, is to demonstrate that the explicit grammar instruction I administrated is effective for JLEs to promote the degree of comprehension for transitivity and intransitivity of English verbs in L2 classrooms. In this study, I specifically focus on the English ergative verbs, which have both transitive and intransitive usage.

I explain the motivation of this study. All human beings naturally acquire the linguistic knowledge of their mother tongue (L1) (Brown, 1970; C. Chomsky, 1969; Sugisaki, 2015). Within a few years after birth, children acquire L1 knowledge with just a limited amount of input. This phenomenon is called "the poverty of stimulus" (Chomsky, 1980). Thus, it can be concluded that human language is an innate endowment unique to the human species. The theory of "the language faculty" or "the capacity of language" that human beings innately possess has been called "Universal Grammar (UG)" and has been theoretically scrutinized for decades (Chomsky, 1981, 1995).

One example demonstrating that L1 acquisition relies on the framework of UG can be observed from the acquisition of anaphoric expressions such as those utilizing the personal pronouns *he* or *her* and the reflexive pronouns *himself* or *herself* in English. According to Binding Theory (Chomsky, 1981), which is based on UG, the reflexive pronoun *herself* in (1a) below can indicate *Mary*, but the pronoun *her* in (1b) cannot indicate *Mary* since the reference of the pronoun cannot be someone inside the same clause. Native English speakers have this knowledge (i.e., who refers to who) without receiving any instruction. Much L1 acquisition research has investigated this phenomenon (Chien & Wexler, 1990; Grimshaw & Rosen, 1990; Solan, 1987; Thornton & Wexler, 1999)

(1) a. Mary$_i$ didn't like herself$_i$. [1]

b. * Mary$_i$ didn't like her$_i$.

The mechanism of second language (L2) acquisition as well as L1 acquisition is also one of the cognitive activities human beings perform (Hawkins, 2001). To investigate the mechanism of L2 syntactic acquisition, a lot of research has been conducted (Hawkins, 2001; White, 2003). For example, Shirahata (2007) tested L2 acquisition of English reflexive and pronouns by senior high school JLEs. The results indicated that they showed 94.3% of correct responses for reflexives and 52.6% for pronouns. The important point here is that the difficulty in acquiring the English pronouns for JLEs is not derived from UG itself. The evidence provided by Shirahata (2007) indicates that L2 acquisition also follows the framework of UG.

This dissertation examines L2 acquisition by employing the framework of UG. If UG is an innate ability for human beings, they can use UG in L2 acquisition. If they cannot acquire L2, I examine why and what factors affect the L2 learners and prevent them from acquiring L2 proficiency. It is expected that the findings from this study of L2 grammar acquisition can contribute to effective English grammar instruction in L2 classrooms.

Since "grammar" encompasses a wide range of grammatical items, I focus on the "verb" as the target item in this study. The "verb" plays a crucial and fundamental role in building argument structures along with the subject and object, because it defines the relationship between "structure" (syntax) and "semantics" (Dixon, 2005; Kageyama, 2002). Because the acquisition of verb usage is one of the most important items in L2 learning and teaching, the verb is worth researching.

In studies of L2 acquisition, it has been reported that L2 learners often confuse intransitive usages with transitive ones (Kondo & Shirahata, 2015a & 2015b; Shirahata, 2015). As a result, several types of errors have been observed. One type occurs when L2 learners of English judge the grammaticality of and produce sentences with unaccusative verbs. They are erroneously used transitively. L2 learners often accept **Tom happened the accident* as grammatical (Kondo & Shirahata, 2015a, 2015b), and produce **A pen was appeared,* where the rule of passivization is extended to intransitive verbs (Zobl, 1989). The

[1] The words that indicate the index (i & j) should be interpreted as referring to the same person.

researchers, including myself, who teach English in L2 classrooms have observed that university JLEs tend to judge *The window opened* as ungrammatical, and they revise the sentence to *The window was opened* (*by Taro*). Verbs such as *open* which allow both transitive and intransitive usages are called ergative verbs (Kageyama, 1996). Although Japanese has intransitive usages such as *Mado-ga ai-ta* (= *The window opened*), it has been reported that many JLEs think that the active intransitive sentence in English (e.g., *The window opened*) is awkward (Kondo, 2009; Hirakawa, 2000; Matsunaga, 2005; Oshita, 1997). However, the L2 acquisition of ergative verbs by L2 learners, including JLEs, has not been scrutinized.

I have explicitly targeted English ergative verbs in my grammar instruction to discover whether a percentage of errors would decrease and JLEs would improve and maintain the degree of comprehension for a certain period after the instruction ceased. Thus, the contents and procedures of my instruction are useful.

This research conducts two experiments: Study 1 and Study 2. In Study 1, the GJT is administered to examine the degree of comprehension JLEs acquire English ergative verb structures. Study 2 deals with the explicit grammar instruction based on the results of Study 1.

This research is organized as follows. After the introduction presented in Chapter 1, in Chapter 2: *Grammar Instruction in L2 English Classroom in Japan*, I examine English grammar instruction in L2 classrooms in Japan. First, I describe the current situation by focusing on the English education curriculum, such as the Course of Study stipulated by the Ministry of Education, Culture, Sports, Science and Technology (MEXT). Next, I describe both pros and cons of grammar instruction, as well as the significance of grammar instruction in L2 classrooms at the university. Finally, the role of grammar instruction is viewed from the Studies of Subject Development.

In Chapter 3: *Theoretical Background*, I present the theoretical background on acquisition of English ergative verbs, including a comparison between English and Japanese ergative verbs from syntactic and semantic perspectives. Additionally, two factors which seem to affect the acquisition of English ergative verbs are theoretically described: the mechanisms of (a) L1 transfer (i.e., transfer from Japanese to English) and (b) animacy of subject nouns. Previous studies related to the acquisition of English ergative verbs are reviewed. Moreover, previous studies examining the influence of animacy in both L1 and

L2 acquisition are presented. Subsequently, in Chapter 4: *Explicit Instruction on L2 Acquisition*, I discuss the mechanisms and effect of explicit grammar instruction by introducing the theoretical framework of this type of instruction. Finally, I present previous studies related to explicit instruction and discuss the problems revealed in these studies.

In Chapter 5: *Study 1: L2 Acquisition of Ergative Verb Structures by JLEs,* I present an empirical experiment focused on the acquisition of English ergative verb structures by JLEs. In particular, the following factors are examined and discussed: (a) the influence from L1 transfer and (b) the animacy of sentential subject nouns. Subsequently, based on the discussion made in Chapter 5 (i.e., Study 1), in Chapter 6 *Study 2: Longitudinal Study of Explicit Instruction on Ergative Verb Structures*, I present another empirical experiment which tests the effect of explicit grammar instruction on English ergative verb structures. By following the discussion made in Chapter 6 (Study 2), I offer reasons for the impact of effective teaching method of English grammar instruction about ergative verb structures. Finally, Chapter 7: *Conclusion* summarizes both the findings and discussion obtained from Study 1 and Study 2.

Chapter 2
Grammar Instruction in L2 English Classrooms in Japan

2.1 Grammar Instruction in School Education

In this section, I introduce the current situation and problems related to English grammar instruction in school education from elementary school through the university level in Japan. The most up-to-date Japanese education policy and curriculum for English grammar instruction in the L2 classroom can be seen in the Course of Study stipulated by MEXT. The new versions of the Course of Study for elementary, junior high, and senior high schools were announced in March 2017 and March 2018. They will be taken effect from April 2020 for elementary school, from 2021 for junior high school, and from 2022 for senior high school. The crucial point of the new Course of Study (MEXT, 2017, 2018) is that, from 2020 onward, English education will be carried out in the third and fourth grade of elementary school with a lesson called "foreign language activity," while for the fifth and sixth grade students, foreign language education will be carried out as a "subject." The introduction of English education at elementary school will mean an increase in the number of English study hours and the amount of English input that JLEs receive. In other words, JLEs will be exposed to "English grammar," which differs from the grammar of their L1, from the age of nine, while university JLEs will continue to study English after 10 years of English learning at school (4 years in elementary school, 3 years in junior high school, and 3 years in senior high school). Since JLEs are exposed to L2 grammar in the L2 classroom for such a long period, and grammar comprises a fundamental part of language, it is vital to consider how English grammar education should be treated in the L2 classroom.

However, despite its obvious importance, it seems that English grammar education has been neglected in the Course of Study since 1989 when, due to the education policy stipulated by MEXT, the importance of communication ability first came to the fore (c.f., Inoue, 2014). According to the new Course of Study, throughout all school levels from elementary through senior high school, the "overall objective" of foreign language education is based on two common concepts: (a) the purpose of foreign language education is to promote communication ability, and (b) English is learned through the so-called four skills: listening, reading, speaking, and writing. Item (2) shows the section on the overall objective of English education for senior high school students.

(2) The purpose of English education at senior high school (MEXT, 2018, p.216) is "*to develop students' communication abilities such as accurately understanding and appropriately conveying information and ideas through language use activities such as listening, reading, speaking, and writing and the integrated language use activities.*"[2]

Regarding English grammar instruction, while the grammatical items to be treated in classrooms are presented in the Course of Study (MEXT, 2017, 2018), no clear statement is stipulated about how grammar instruction should be conducted and in what contexts teachers should teach grammar. Item (3) presents extracts of the new Course of Study for foreign language education at senior high school (MEXT, 2018) – the only parts related to grammar instruction in the overall document.

(3) The treatment of English grammar at senior high school (MEXT, 2018)
"*comprehension of foreign language phonetics, vocabulary, expression, grammar and language function should be deepened, and at the same time, this knowledge should be utilized appropriately, depending on the purpose, scene, and situation, for actual communication through listening, reading, speaking, and writing*" (p.216).

"(Grammatical items) *should be utilized repeatedly in meaningful communicative contexts*" (p.218).

As can be seen, there is no explicit statement regarding grammar instruction itself and the contexts and procedures of grammar instruction. The number of appearances of "grammar" in the Course of Study for senior high school (MEXT, 2018) is only three times, and the phrase "grammatical items" appears nine times. The new Course of Study further states that teachers should not pay too much attention to students' grammatical accuracy and grammatical terms and usages should be treated carefully (MEXT, 2017, 2018). Thus, from the researcher's perspective, there is a lack of emphasis on grammar instruction in the school curriculum at all levels. Rather, the new Course of Study states that, apart from grammar

[2] The English translations in (2) and (3) were conducted by the researcher.

instruction, teachers should emphasize the four skills (listening, reading, speaking, and writing) in order to promote students' communication ability. This begs the question: where did this education policy for foreign language originate? One of the reasons for its emergence is that the skill of "speaking" has been considered a necessary part of foreign language learning in school education in Japan and thus, proponents of the four-skills education policy have promoted the necessity of introducing the English-speaking test to university entrance exams (Abe, 2017). Therefore, what has been at the forefront of the foreign language education curriculum is how effectively the four skills can be taught.

2.2 Pros and Cons of Grammar Instruction in the L2 Classroom

Conducting grammar instruction in the L2 classroom has been subject to criticism due to the strongly held public opinion that JLEs have difficulty speaking English and only have the ability to read and write. However, in my own research, I found that this criticism has not been proven in research papers based on valid and reliable evidence; rather, it has been disseminated through the mass media as a general public opinion and via book authors without empirical evidence (e.g., Yasukochi, 2018). According to an editorial article in *The Asahi Shimbun* (May 21, 2017), the low-level speaking skills of senior high school students have been caused by the fact that English classrooms mainly focus on reading and grammar instruction. However, Torikai (2018) criticized this article, noting that criticisms of grammar instruction such as "*JLEs have difficulty speaking English despite having sufficient ability in reading and writing*" is merely a biased impression, rather than empirical fact. In fact, she warned that students' reading ability, as a foundation for the four skills, has deteriorated remarkably in recent years. Yasukochi (2018), meanwhile, noted that the focus on "grammar and sentence structures" and "reading" in university entrance exams tends to reduce the opportunity for learning and teaching speaking. He also proposes that up to the first year of senior high school, only basic English grammar is necessary and that it is more important to practice English through spoken communication. Thus, this kind of criticism of grammar instruction can be said to derive from the education policy that promotes the four skills, in particular, speaking (Abe, 2017).

However, many researchers have argued for the importance of grammar instruction in L2 classrooms in Japan (e.g., Abe, 2017; Inoue, 2014; Shirahata, 2017; Sugiyama, 2013; Torikai, Otsu, Erikawa & Saito, 2017). This study also suggests that grammar instruction is

necessary in the classroom environment despite of the lack of emphasis in school curricula. Due to the systemic neglect of grammatical comprehension by MEXT, Inoue (2014) claimed that JLEs' grammatical ability as a foundation for communication has been deteriorated. This phenomenon has been observed since the 1989 revision of the Course of Study, when the emphasis of English education shifted to the importance of training the communication ability. In addition to the claim by Inoue (2014), Abe (2017) emphasized the importance of grammar in language learning since grammar constitutes a fundamental part of language. Hence, rich grammatical knowledge enables L2 learners to learn English phrases and sentences effectively. Sugiyama (2013) also claimed that grammar instruction and the utilization of L1 knowledge are crucial for JLEs due to the time limitation of L2 classrooms. Thus, in order to facilitate the four skills and communication skills, the knowledge of grammar, vocabulary, and phonology should not be neglected by MEXT. Learning these basic components of the language helps JLEs to learn the four skills effectively.

In this study, I point out the problem inherent to the pro and the con arguments of grammar instruction in L2 classrooms in Japan. That is, arguments have been made on both sides without investigating what grammatical knowledge JLEs actually possess. Thus, the dispute on the pros and cons for grammar instruction has been repeated endlessly and inconclusively. To address this, this study is based on empirical evidence of JLEs' grammatical knowledge through a series of GJTs. I discuss the necessity of providing grammar instruction to JLEs by proposing the contexts in which grammar instruction is best provided and the most suitable procedures for its use.

2.3 The Necessity of Grammar Instruction in the University Classroom

This study targets university JLEs because I teach English at a university. Having discussed the background of grammar instruction in Japanese school education above, let us now examine the current situation of English education at universities. After JLEs' learning of English in the L2 classroom for six years (to be increased to 10 years under the new Course of Study) without receiving appropriate and independent grammar education, university JLEs need to continue their English learning. According to Articles 19- 21 of *The Standards for Establishment of Universities* (MEXT, 2007), university curricula can be organized at the university's discretion to achieve their educational purposes by dividing classes into compulsory, elective, and free elective subjects. See (4a) and (4b). Moreover,

the number of credits allotted to the compulsory, elective, and free elective subjects falls within the university's discretion. See (4c).

(4) Articles 19-21 of The Standards for Establishment of Universities[3]

a. Article 19

"*A university shall establish the class subjects necessary to achieve the educational purpose of the university, its respective faculties, departments, courses, etc., and shall organize the curricula systematically*."

b. Article 20

"*Curricula shall be organized by dividing all class subjects into categories of compulsory subjects, elective subjects, and free elective subjects, and appropriating these to each school year*."

c. Article 21

"*The number of credits for each class subject shall be determined by a university*."

At the university in which my experiments are conducted, it is compulsory for the first-year students to take two English classes (90 minutes per class) for the first semester. From the second year, English study is optional. Although undergraduate education in Japan lasts for four years, students spend only the first or a maximum of two years on general English education. Unlike foreign language classes in elementary, junior, and senior high schools, teachers can choose materials used depending on the individual instructor.

2.4 The Role of Subject Development in Grammar Instruction

In this study, by focusing on the acquisition of English ergative verbs, I examine what contents and procedures are appropriate for English grammar instruction in Japanese L2 classrooms from the perspective of Subject Development. In this section, I explain how the research based on Subject Development is related to this study.

According to Nishimiya et al. (2016), Subject Development comprises three academic areas: (a) specialized field, (b) how to teach subjects, and (c) general pedagogy. All of (a) to (c) are essential aspects required by university students who wish to qualify as school

[3] English translations in (4) are adopted from Japanese Law Translation (http://www.japaneselawtranslation.go.jp/law/detail/?id=1864&vm=04&re=01)

teachers. Moreover, by amalgamating (a) lectures on a specialized field and (b) lectures on how to teach subjects into a single course called "Subject Studies," the study of subject development falls into two subcategories: Subject Studies and Education Environmentology.

The framework of this study can be situated within the field of Subject Development as presented in Figure 1. The terminology used there was translated by Nishimiya et al. (2016). In the subcategory of Subject Studies, this study adopts as specialized fields the concepts of linguistic theory, largely based on Chomsky's Universal Grammar, as well as the theory of second language acquisition (SLA). In addition, in order to consider how content should be taught, this study employs the concepts of applied linguistics and English language teaching. In the subcategory of Education Environmentology, I refer to studies on school education, learning environment and cognitive development.

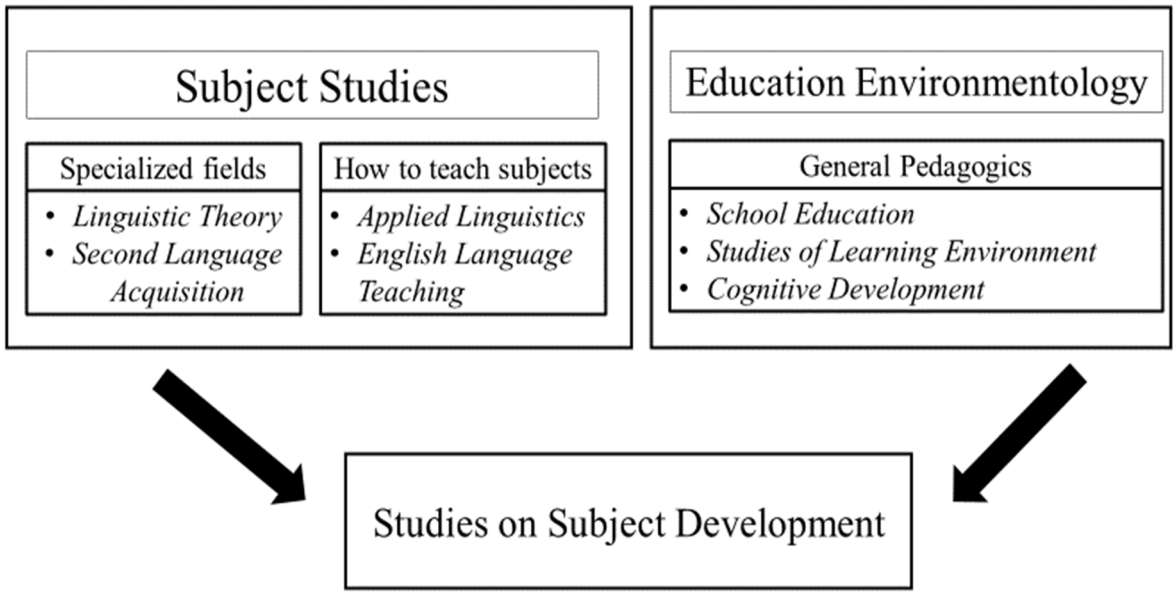


Figure 1 The framework of Subject Development in this study

Here, I describe how these three academic areas of Subject Development are related to this study. The knowledge gained from the specialized fields enables me to develop appropriate content for JLEs in the English grammar instruction of ergative verb structures. The specialized fields of knowledge used to develop the teaching content in this study comprised linguistic theory and SLA theory. The crucial point in this study is that linguistic theory, SLA (specialized field), applied linguistics, and English teaching methodology (how to teach subjects) are all connected, a point that has barely been observed in previous studies. By linking these fields, I create a new methodology for English grammar teaching for JLEs in the field of Subject Development. This new methodology allows me to propose to L2 language instructors a methodology for teaching the contents and procedures of English grammar instruction. That is, I demonstrate what kinds of English ergative verbs are difficult or easy for JLEs to interpret and why, as well as how and why L2 language instructors should provide explicit grammar instruction for English ergative verb structures, by presenting teaching materials for students.

Regarding the academic area of Education Environmentology, I consider school education, learning environment, and cognitive development. The important point is that, in this study, the effect of explicit grammar instruction based on L2 acquisition research is discussed within the framework of school education in Japan. Regarding research on the learning environment, the effectiveness of grammar instruction in the L2 classroom environment is considered, including, for example, the limited input to which L2 learners are exposed due to the limited number of English lessons per week and the resources available in L2 classrooms (e.g., the use of learners' L1, cooperative learning via pair work).

Regarding cognitive development, learner factors such as age and general cognitive ability are considered. For example, I examine whether the comprehensibility of metalinguistic explanations depends on learners' age. If so, metalinguistic explanations should be appropriate for the university students targeted in this study since they are more likely to understand such explanations than their counterparts in elementary or junior high school. I also examine studies on cognitive development in relation to children's recognition of "animacy" which suggest how humans define the distinction between animate and inanimate objects. The details are explained in Chapter 3.

Therefore, the viewpoint leading to studies on Subject Development in this study is to (a) ascertain what knowledge it is appropriate for teachers to have and effective contents and

procedures for English grammar instruction of ergative verb structures based on SLA studies for JLEs and (b) propose a teaching methodology for English grammar instruction based on the empirical evidence of foreign language learning.

Chapter 3
Theoretical Background

This chapter focuses on the theoretical approaches of the L2 acquisition of English ergative verb structures. I focus on two perspectives: English ergative verb structures and the animacy of subject nouns.

3.1 Comparison Between English and Japanese Verbs

3.1.1 English Transitive and Intransitive Verbs

Verb transitivity refers to "the valency of a verb—the number of arguments it takes" (Kageyama & Jacobsen, 2016). A transitive verb takes two arguments, the subject and the object, whereas an intransitive verb takes only one argument, the subject. In other words, verb transitivity can be distinguished by whether an accusative argument (i.e., the object) is required by the verb. This distinction between transitive and intransitive verbs seems to be observable cross-linguistically. Thus, as Hasegawa (2015) notes, it does not only pertain to the linguistic domain alone but also to the domain of universal human cognition. Hence, as presented in (5), a transitive verb requires the object after the verb, and thus it has a Determiner Phrase (DP) - Verb (V) - DP structure. An intransitive verb does not require the object, and thus it has a DP-V structure. The "Determiner Phrase" consists of a determiner (D) and a noun (N) (e.g., *a car, the woman*).

(5) Structures of transitive and intransitive usage
   a. transitive usages: DP-V-DP structure
   b. intransitive usages: DP-V structure

Based on the transitive/intransitive distinction, English verbs can be classified roughly into three types, as presented in (6). In addition to transitive verbs as in (6a), and intransitive verbs as in (6b), the verb type in (6c) called ergative verbs, also exists and can be used both transitively and intransitively (Burzio, 1986). Example sentences with transitive verbs (6a) are shown in (7), those with intransitive verbs (6b) are shown in (8), and those with ambitransitive verbs (6c) are shown in (9).

(6) Classification of English verbs

a. verbs functioning mainly transitively (e.g., *destroy* and *bring*)

b. verbs functioning mainly intransitively (e.g., *arrive* and *walk*)

c. verbs used both transitively and intransitively (e.g., *begin* and *close*)

(Adapted from Kagayema, 1996, with some modifications)

(7) Example sentences of transitive verbs

a. *destroy*: The army destroyed a rebel base.

b. *bring*: John brought my umbrella to my house.

(8) Example sentences of intransitive verbs

a. walk: Ann walked to the station.

b. *arrive*: The train arrived at the station.

(9) Example sentences of ergative verbs

a. *begin*

transitive usage: John begins his work at 9:00 a.m.

intransitive usage: The first class begins at 9:00 a.m.

b. *close*

transitive usage: Ann closed the windows.

intransitive usage: The museum closes at 9:00 p.m. on Sundays.

3.1.2 English Ergative Verbs

***3.1.2.1 Syntactic Perspective*.** Verbs such as *break, burn*, *close*, and *open* that can be used transitively in (10a) and intransitively in (10b) are called ergative verbs (Kageyama, 1996). The same form of these verbs may be used in either the transitive or the intransitive usage without morphological change as in (10). The thematic role of a subject noun in transitive usages is Agent[4], whereas that in intransitive usages is Theme or Patient. The alternation between transitive and intransitive usages changes the valency (the number of

[4] The thematic role of "Agent" can be defined as "the entities according to what they are doing" (Yamamoto, 1999, p. 149).

arguments) of the verb and the thematic roles of the subject nouns.

(10) a. Taro opened the window. (transitive usage)
b. The window opened. (intransitive usage)

3.1.2.2 Semantic Perspective. From a semantic perspective, English ergative verbs refer to "change of state" or "change of position" (Levin, 1993). Additionally, from the perspective of verb aspect based on Vendler (1967) and Dowty (1979), Montrul (2000) explains that transitive change of state verbs have the aspect of "accomplishment," whereas intransitive verbs have the aspect of "achievement."

Moreover, transitive usages have a causative meaning, whereas intransitive ones denote the final state (Montrul, 2000). For example, in *Taro opened the window*, *open* means that Taro caused the state of the window being open. Conversely, in *The window opened*, *open* simply expresses the event. In other words, the semantic difference between transitive and intransitive usages with English ergative verbs is that intransitive usages do not have the causative meaning of inducing the action of the verb.

Kageyama (1996) also proposes the conceptual structure in (11), and claims that intransitive usages with ergative verbs like *open* also have causative meanings that do not appear at an argument structure level. On the other hand, non-alternating unaccusative verbs (e.g., *happen*) do not. Based on (11), Kageyama posits the idea of anti-causativization as in (12). This means that the intransitive usage of an English ergative verb results from a causative conceptual structure whereby the causer (x) and the receiver of the verb action (y) become identical. Kageyama referred to as suppression: the causer (x) (i.e., the external argument) does not appear at the argument structure level but actually exists at the lexical structure level.

(11) Conceptual structure of argument structures
a. *happen*: [BECOME [x BE AT-z]]
b. *open*: [x CONTROL [y BECOME [y BE OPEN]]

(Adapted from Kageyama, 1996, pp. 143–144)

(12) Anti-causativization in the conceptual structure

[x CONTROL [y BECOME [y BE AT-z]] → [x=y CONTROL [y BECOME [y BE AT-z]]

(Adapted from Kageyama, 1996, p. 145)

Based on the idea of the lexical semantic features of English ergative verbs proposed by Kageyama (1996), it can be said that the fundamental conceptual structure of ergative verbs seems to be the transitive usage (the causative structure). Intransitive usages (DP-V structure) appear in the argument structure by suppressing the causative meaning. Thus, the Agent is involved at the lexical semantic level in not only the transitive but also the intransitive usage. However, it does not appear in the intransitive usage at the surface structure level. In order to acquire English ergative verbs in terms of semantics, it is inevitable that JLEs interpret the existence of the Agent at the lexical semantic level of both usages.

3.1.3 Japanese Intransitive and Transitive Verbs

As with English, Japanese has transitive and intransitive verbs, as in (13). Sentences with transitive verbs have SOV while those with intransitive verbs have SV. In the transitive sentence, the subject *Taro* is marked as nominative case with the particle *ga* and the direct object *okashi* is marked as accusative case with the particle *o*. As for the intransitive sentence, the subject *Taro* is marked as nominative case with the particle *ga*.

(13) Examples of Japanese sentences with transitive and intransitive verbs

a. transitive:	Taro-ga	okashi-o	tabeta
	Taro-NOM	Sweets-ACC	ate
	Taro ate sweets.		
b. intransitive:	Taro-ga	waratta	
	Taro-NOM	laughed	
	Taro laughed.		

Generally, Japanese verbs consist of variant and invariant parts; the invariant parts are also referred to as stems. For example, *wara-u* ‘laugh’ has the invariant part *wara* as the stem

and the variant part *u*. Japanese transitive and intransitive verbs are grouped in pairs with common stems and verb roots. However, variant parts, i.e., suffixes (morphology) attached to the stem distinguish transitive verbs from intransitive verbs (e.g., 'open': *ak-e-ru* (vt), *ak-u* (vi)).

3.1.4 Japanese Ergative Verbs

3.1.4.1 Syntactic perspective. Since transitivity in Japanese verbs is alternated through morphological marking, Japanese transitive forms of ergative verbs are slightly different from their intransitive forms: *war-u* (transitive)/*war-e-ru* (intransitive) for 'break', as examples in (14) and (14) show.

(14) a. Ann-ga mado-o wa-tta. (transitive usage)
Ann-Nom window-Acc broke
Ann broke the window.
b. Mado-ga war-e-ta (intransitive usage)
window-Nom broke
The window broke.

As with English, in transitive usages, the thematic role of the subject is Agent, whereas that of the object is Theme or Patient which is the same thematic role as the intransitive subject. Thus, Okutsu (1967) summarizes Japanese transitive and intransitive sentences with ergative verbs as in (15). Matsuzaki (2001) explains that the Japanese template in (15) is identical to the template of its English equivalent. Note also that the three conditions on the English ergative alternation proposed by Matsuzaki (2001) are also applicable to the Japanese ergative alternation: (a) the verb valency is changed, (b) the internal argument should appear as the transitive object and the intransitive subject, and (c) the thematic role of the transitive object is the same as that of the intransitive subject, i.e., Theme/Patient. Here, I also adopt these three conditions for Japanese ergative verb structures.

(15) DP_1-ga DP_2-o V_t (transitive)
DP_2-ga V_i (intransitive)

(Adapted from Okutsu, 1967, p. 49 with some modifications)

3.1.4.2 Semantic Perspective. Japanese ergative verbs can also be explained via the same conceptual structure as English. The conceptual structure in (16) indicates that in the intransitive usage, the causer (x) and participant entities (y) become identical, and thus the external argument (x) is suppressed, so that only the internal argument (y) appears in the syntactic structure. Hence, *Kabin-ga ware-ta* 'the vase broke' means that the vase broke spontaneously. However, obviously, someone or something in the external world caused the event.

(16) Anti-causativization in the conceptual structure

x=y CONTROL [(y) BECOME [y BE AT-z]]

(Adapted from Kageyama, 1996, p. 190)

However, the Japanese intransitive usage can be derived as in (17) from a transitive structure in another way referred to as de-causativization, which does not exist in English (Kageyama, 1996). Like anti-causativization, de-causativization does not express the Agent in the argument structure (shown as φ) but possesses it at the lexical semantic level. Hence, only the internal argument (x) appears at the syntactic level. For example, *uer-u* (vt)/*uwar-u* (vi) 'to be planted' is a verb pair showing de-causativization. The intransitive usage, *ki-ga uwar-u* 'the tree was planted', does not express the Agent but implies its existence in the fact of the tree being planted. The important point is that both Japanese intransitive usages, anti-causativization and de-causativization, are derived from the transitive structure, and thus they still imply an Agent at the lexical semantic level or require an Agent in the external world of the sentence. Thus, it can be said that the lexical semantic part of Japanese ergative verbs is similar to the English one.

(17) De-causativization at the conceptual structure proposed by Kageyama (1996, p. 188)

x= φ CONTROL [y BECOME [y BE AT-z]]

3.1.5 Model of L2 Development

3.1.5.1. L1 Syntactic Transfer of Ergative Verbs. Let us consider how L1 Japanese syntactic rules can influence the L2 acquisition of English ergative verbs. According to the Contrastive Analysis Hypothesis (CAH), linguistic items that are absent and dissimilar to the L2 learners' L1 are difficult to learn, whereas linguistic items that are present and similar are easy to learn (Lado, 1957). If this logic is applicable to JLEs' acquisition of English ergative verbs, it may be hypothesized that they would have little difficulty acquiring them because of L1 positive transfer from their Japanese ergative equivalents. As previously discussed, Japanese has the same type of ergative verb structure as English (e.g., transitive usage: *Ann-ga isu-o kowa-su* 'Ann breaks the chair'/Intransitive usage: *Isu-ga kowa-re-ta* 'The chair broke'). Both Japanese transitive and intransitive verb forms share the same verb root (e.g., *kowar-* in (vt) *kowa-su* / (vi) *kowa-re-ru* 'break'). The Japanese transitive/intransitive alternation satisfies the three conditions of English ergative verb alternation proposed by Matsuzaki (2001). I would emphasize that all English ergative verbs tested in this study have both Japanese transitive and intransitive counterparts. If JLEs notice that Japanese transitive and intransitive usages share the same base form, and then they transfer these Japanese linguistic properties onto the English ones, they are likely to demonstrate a clear and accurate interpretation of English verb usages. Thus, it would not be difficult for JLEs to acquire the syntactic structures of English ergative verbs.

3.1.5.2. L1 Semantic Transfer of Ergative Verbs. As mentioned in a previous section, Japanese lexical semantic representations of ergative verb structures (i.e., anti-causativization), as in (19), are identical to the English ones, as in (18). Moreover, Japanese intransitive verbs have another type of transformation from transitive to intransitive, referred to as de-causativization, which also has a similar lexical semantic representation as the intransitive usage of English ergative verbs, as in (19). It can be said that the lexical semantic representation of the transitive usage with English ergative verbs can serve as the fundamental representation of the lexical semantics cross-linguistically, but how each argument appears may be different in the syntactic structure. Thus, it is not difficult for JLEs to acquire the semantic representation of English ergative verb structures.

(18) English conceptual structure (anti-causativization)

Transitive usage Intransitive usage

[x CONTROL [y BECOME [y BE AT-z]]→[x=y CONTROL [y BECOME [y BE AT-z]]]

(Kageyama, 1996, p. 145, with some modifications)

(19) Japanese conceptual structures

a. anti-causativization by *-e-*

Transitive usage Intransitive usage

[x CONTROL [y BECOME [y BE AT-z]]→[x=y CONTROL [(y) BECOME [y BE AT-z]]]

b. de-causativization by *-ar-*

Transitive usage Intransitive usage

[x CONTROL [y BECOME [y BE AT-z]]→[x= φ CONTROL [y BECOME [y BE AT-z]]]

(Kageyama, 1996, pp. 188 & 190, with some modifications)

3.2 Animacy of Subject Nouns in L2 Acquisition

In this section, I explicate how animacy relates to language acquisition from a theoretical perspective. One of the key terms I explore in this study is "animacy," which is defined as whether an entity is alive or not alive (Becker, 2014). When an entity is alive, we refer to it as animate (e.g., *I, boy, Taro, dog, fish*). When an entity is not alive, we refer to it as inanimate (e.g., *chair, tree, sun, train, water consumption*). This concept of animacy seems to exist as part of the conceptual domain of the human cognitive system (Becker, 2014). In terms of language acquisition, animacy plays a universally important role in human language. According to Becker (2014), the concept of animacy is "*the most fundamental component for human language* (p. 11)". Thus, the concept of animacy can be said to be strongly related to the development of leareners' cognition and grammar.

3.2.1 Subject/Agent-Object/Theme

First, I explain the relationship between thematic roles and arguments (subject, object). It has claimed that one characteristic of primitive human languages is that the thematic role of the Agent was normally placed at the initial position of a sentence, which is normally a sentential subject position (e.g., Bever, 1970; De Villiers & De Villiers, 1973;

Ikeuchi, 2009; Jackendoff, 2002). For example, in a sentence like *Ann read the book*, the subject *Ann*, appearing as the first noun, causes the verb action *reading*. Thus, the subject *Ann* is the Agent. This seems to be language-universal. According to Dryer (2005) and Gell-Mann and Rahlen (2011), although there are six types of possible word orders, only three types are commonly found around the world (more than 80% of world languages): SOV (DP-DP-V structure; e.g., Japanese), SVO (DP-V-DP structure; e.g., English), and VSO (V-DP-DP structure; e.g., Arabic). Thus, from a typological perspective, it is difficult to observe a language in which objects precede subjects.

According to Jackendoff (2002), word order seems to be related to the evolution of human language. Citing *Language and Species* (1990) by Bickerton, Jackendoff notes that there have been two revolutions in human language. First, protolanguage had been spoken millions of years ago, and second, modern language appeared 50,000 years ago. As a trace of the former, i.e., "fossils" of protolanguages, Jackendoff (2002) proposes that modern human language displays "the Agent First principle," which is considered a very strong principle governing word order. Thus, it appears prior to the development of syntax. For example, when speakers hear *hit Mary Taro,* they would interpret this as *Mary hit Taro*, not *Taro hit Mary*. The second noun, *Taro*, cannot be interpreted as the Agent. Following this principle, L2 learners would interpret the intransitive sentence with an ergative verb, such as *the door opened*, as unnatural or unacceptable because the first noun, *door*, has to be the Agent of verb action, *open*. This strategy is a "fossil" from the protolanguage and seems to be robust as an essential part of human language. Therefore, since "the Agent First principle" (Jackendoff, 2002) is available in learners' L1, they can also make use of this principle in L2 acquisition.

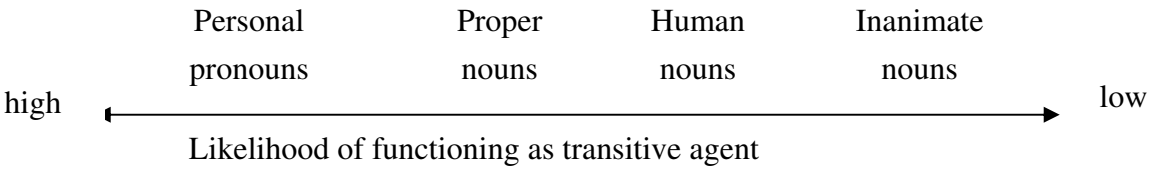
3.2.2 Animacy and Thematic Roles

When we consider the properties of the Agent, the subject must induce the verb action. Hence, as a human intuition, we believe that living things (i.e., animate nouns) should be placed in the sentential subject position. Conversely, non-living things (i.e., inanimate nouns) may be placed in the object position. An examination of the relationship between animacy and thematic role may be crucial because it may be related to the grammatical knowledge of language learners and may affect their grammatical judgment.

A noun hierarchy of agency has been proposed by several researchers, starting with Silverstein (1976) and modified by other researchers like Dixon (1979) and Tsunoda (2009).

Here, I adopt the diagram of the hierarchy of agency in nouns posited by Dixon (1979) as in (20).

(20) The potentiality of agency scale



(Adapted from Dixon, 1979, p. 85, with some modifications)

In (20), personal nouns (e.g., *I, we, you*, *she*) are placed in the highest position, which means that they are most likely to be the subject/Agent, and proper nouns (e.g., *Ann, Taro*) are placed second highest. Conversely, inanimate nouns (e.g., *book, table*) are placed in the lowest position, which means that they are least likely to be the subject/Agent (see also Becker, 2014; Tsunoda, 2009). In other words, this hierarchy may be summarized as stating that animate nouns are more likely to be the subject/Agent, whereas inanimate nouns are less likely to be the Agent.

Backer (2014) claims that this is a cross-linguistic phenomenon. Although English does not mark any morphology in the distinction between animate and inanimate, some languages, such as Spanish, use morphology in order to distinguish animate from inanimate nouns (e.g., object marking in Spanish). Thus, it can be said that marking animacy in the argument structure is an innate endowment of human languages. However, one problem is that the definitions of animate and inanimate in (21) may be ambiguous. Some people may regard *tree* and *flower* as inanimate, but others may regard them as animate. Hence, further scrutiny is necessary to determine what kind of nouns are recognized as animate or inanimate.

(21) Links between degree of animacy and subject/object proposed by Becker (2014)

more animate		less animate
more likely subject	⇔	less likely subject
less likely object		more likely object

(Adapted from Becker, 2014, p. 68)

As far as transitive sentences are concerned, we know that quite a few languages, including Japanese, prefer animate nouns to inanimate nouns as sentential subjects (Tsunoda, 2009). For example, in Japanese, transitive sentences such as [*Kootsuu juutai*]-*ga watashi-o okura-seta* 'the traffic jam made me delayed', sound awkward to many native Japanese speakers because the subject *kootsuu juutai* 'the traffic jam' is an inanimate noun while the object *watashi* 'me' is animate.

Let us examine the case of intransitive sentences in Japanese. Intransitive sentences, such as *Ishi-ga korogatta* 'a rock rolled', sound natural to native Japanese speakers. Thus, it may be said that interpreting or producing intransitive sentences with inanimate subject nouns is natural and familiar to native Japanese speakers. Therefore, if L1 transfer occurs from the beginning of L2 English acquisition, JLEs would judge the grammaticality of English intransitive sentences with inanimate subject nouns correctly.

Another possibility is that if JLEs apply "the Agent First principle", as discussed above, they might believe that intransitive sentences with ergative verbs, such as *A rock rolled*, are ungrammatical because the first noun (i.e., the subject) is inanimate and does not cause the verb action. Thus, I examine how animacy interacts with L2 acquisition.

3.3 Previous Studies on L2 Acquisition of Ergative Verbs

In this section, I review previous studies on L2 acquisition of ergative verbs to examine (a) what types of errors L2 learners present to interpret ergative verbs in English and (b) what factors have been considered as the causes of these difficulties; I do this by dividing them into syntactic and sematic factors.

3.3.1 Syntactic factor

3.3.1.1 Zobl (1989). Zobl (1989) investigated sentences written in English produced by L2 learners of various L1 backgrounds: Japanese, Arabic, Spanish, Chinese, Turkish, Thai, and Indonesian learners of English. He discovered that L2 learners tend to write passive sentences instead of active sentences. Examples are presented in (22). About one third of ergative verbs are passivized. For example, two of the four tokens with the ergative verb *break* are passivized, and one of the two tokens with the ergative verb *separate* is passivized.

(22)

a. *The most memorable experience of my life was happened 15 years ago.
(L1: Arabic; proficiency: advanced)

b. *Most of people are fallen in love and marry with somebody.
(L1: Japanese; proficiency: high-intermediate)

c. *My mother was died when I was just a baby.
(L1: Thai; proficiency: high-intermediate)

(Adapted from Zobl, 1989, p. 204)

Thus, Zobl (1989) discovered the phenomenon of the overgeneralization of passivzed rules for ergative verbs and assumes that both ergative verb and passive structures commonly have the same syntactic representation, [*e* [V NP $_{\text{theme}}$]]. As for the passive structure, the object NP moves to the subject's syntactic position to receive the nominative case (i.e., the move-NP rule). Similarly, regarding the structure of the ergative verb, as Burzio (1981) proposes, since the subject position is empty (*e*), the movement from the theme NP to the subject position occurs. Therefore, Zobl (1989) claims that L2 learners may inappropriately extend the passive rule to intransitive usages of ergative verbs since both intransitive usages of ergative verbs and passive forms represent the similar DP movement from the VP internal position to the sentential subject position.

3.3.1.2 Balcom (1997). Balcom (1997) empirically confirmed the validity of the claim made by Zobl (1989) by conducting both GJT and the production task with 38 Chinese learners of English (CLEs). The GJT comprised both grammatical and ungrammatical sentences, including ungrammatical passive sentences with various types of unaccusative verbs, i.e., experiential verbs, psych verbs, unaccusative verbs, paired ergative verbs, middle constructions, and so on. The test sentence example is shown in (23). As for the production task, a passage with 39 blank spaces was given to the participants. They were asked to fill in the blank spaces with the correct verbal forms they thought.

(23) An example of test sentence used in the GJT by Balcom (1997, p. 3):

*The door was closed smoothly because Mary had remembered to oil the hinges.

Results of the GJT indicated that the participants accepted 37% of the passive sentences and rejected 60% of them. Regarding the production task, 86.5% of the answers with ergative verbs (intransitive usages) were not written as passive sentences, while 13.5% of these answers were passive, showing the second-highest percentage among the subclasses of unaccusative verbs.

Thus, Balcom confirms Zobl's (1989) idea. That is, both passivization and the detransitivization of unaccusative verbs with transitive counterparts (i.e., ergative verbs) undergo suppression of the external argument and have only the internal one. Balcom also claims that L2 learners have the lexical representation of unaccusative verbs ([V NP $_{\text{theme}}$]). However, the overgeneralization of unaccusative verbs with transitive counterparts occurs because it has the similar derivation process with the passivization. Therefore, for L2 learners to master the correct DP-V structure and avoid overgeneralization of passives, Balcom proposes that they learn the semantic rules—that is, that verb action of intransitive usages can occur without both the agent and the object position.

However, if her claim is valid, the following question is raised: why does the percentage of answers that select the passive sentences vary depending on subclasses of unaccusative verbs? Moreover, an important shortcoming of the studies by both Zobl (1989) and Balcom (1997) is that neither considers the role of learners' L1, and they only consider the argument structures in L2 English.

3.3.1.3 Yip (1995). Yip (1995) has further investigated the causes of overpassivization errors by referring to learnability problems. Twenty intermediate and advanced CLEs participated in the GJT. The test stimuli used in Yip (1995) are shown in (24). In addition to answering the GJT, the participants were asked to correct the test stimuli if they thought they were ungrammatical. Her results show that, for both groups, the scores of passive sentences were higher than for ergative structures (the correct % for the intermediate group is 78% passive and 25% ergative; the correct % for the advanced group is 96% passive and 37.5% ergative). Those who judged the grammatical ergatives to be ungrammatical corrected the grammatical ergative sentences in passive ones, as shown in (25).

(24) Test stimuli used in Yip (1995, p. 219-220):

[Grammatical passives]

a. All the books should be returned in two weeks.

b. It should be repaired soon.

c. They were grown by my grandmother.

c. The window was broken by the kids next door.

[Grammatical ergatives]

b. The mirror shattered during the last earthquake.

c. My car has broken down.

d. It has melted.

e. What cooks most quickly?

(25) Correction of grammatical ergatives by the participants

[Grammatical Ergatives]		[Corrections]
The mirror shattered in the last earthquake.	→	The mirror was shattered.
My car has broken down.	→	My car has been broken; was broken down.

(Adopted from Yip, 1995, p. 142)

Yip (1995) claims that the overgeneralization of passives to ergative verb constructions can be caused by two factors: the factor related to the grammar and the cognitive factors. From the perspective of the grammatical principle, Yip (1995) states that L2 learners seem to overpassivize ergative verbs since they consider the underlying structure of ergative verbs as transitive. The D-structure of the unpaired ergative verb (i.e., unaccusative verb) is similar to the transitive uses (DP-V-DP structure), and thus, the rule of the passivation (NP (=DP) -movement) can be applied as shown in (26).

(26) a. *e* fall down many leaves.

b. [Many leaves]$_i$ were fallen down t_i.

NP-movement

(Adapted from Yip, 1995, p. 136)

It should be emphasized that Yip (1995) found the influence of L1 transfer on ergative verb constructions, which had not been acknowledged in previous literatures (e.g., (Balcom, 1997; Zobl, 1989;). Yip (1995) points out the possibility of an L1 (Chinese) influence. In Chinese, the passive sentence can possess the direct object (e.g., *ta bei qiang le qian* (= *he was robbed* (*of*) *money*)) (Yip, 1995, p. 138). Hence, she claims that if CLEs do not have the knowledge of verb subcategorization, i.e., transitive, intransitive, and ergative, these L2 learners must consider some ergative verbs as "*inherently passive*" (Yip, 1995, p. 138).

As for the cognitive factor, Yip (1995) claims that L2 learners may think that the agent was missing in the sentence and, thus, the sentences should be passivized, although the intransitive use of ergative verbs only describes a change of state with a theme subject. For example, she explains that the CLEs tended to interpret the intransitive sentence *The ship sank* as "someone or something sank the ship" rather than "the ship sank by itself."

Therefore, for L2 learners to acquire the ergative structures, Yip (1995) proposes that they need to differentiate ergative structures (intransitive usages) from passive constructions as they are similar. Since both structures commonly have a theme role in the subject position, they can be understood as unusual and marked phenomenon by L2 learners. Thus, to show the markedness, the passives are marked with overt morphology (*be*-V*en*). Nevertheless, ergative verbs are not marked with overt morphology, which seems to be exceptional. Therefore, Yip (1995) suggests that this learnability problem can be solved when L2 learners have learned that ergative verb structures should not be marked with any overt morphology.

Yip (1995) reveals the causes of the overpassivization phenomenon of ergative verb structures by referring to the grammatical factors (i.e., NP-movement and the influence of L1 transfer) and the cognitive factor (i.e., the missing agent in intransitive usages of ergative verbs). Although she points out the cognitive factor, she does not discuss the solution. However, to solve the learnability problem, this cognitive factor, i.e., L2 learners tend to passivize the intransitive usages of ergative verbs due to the lack of an Agent in the sentence, should be considered. Furthermore, by focusing on the test stimuli that L2 learners overpassivized, she found that the subject nouns are inanimate, such as *the mirror* and *my car*. The influence of subject animacy can also be considered as the cognitive factor for overpassivization.

3.3.1.4 Oshita (1997). Oshita (1997) focuses on L2 acquisition of English unaccusative and ergative verbs (he calls them inchoative verbs) by JLEs and Italian learners of English. In previous literature, he finds that the interlanguage of L2 learners presents

several types of incorrect syntactic structures, such as avoidance of NP-V structure, transitivization, and passivization. Then, from the influence of the UG principles (i.e., the unaccusativity hierarchy) and learners' L1 input, Oshita (1997) examines why and how these types of errors are made by L2 learners.

In this research, I focus on the results of Oshita's GJT data. The ergative verbs tested in the GJT were *melt, decrease, shatter,* and *increase,* used in both intransitive (NP-V word order) and transitive (NP_1-V-NP_2 word order) forms, as well as in contextually unacceptable passive sentences. The examples of test sentences are presented in (27).

(27) Examples of the test sentences in Oshita (1997):

a. [Intransitive usage] The average family size will decrease in these nations.
b. [Transitive] The lower birth rate will decrease the average family size in these nations.
c. [A passive sentence] *The average family size will be decreased in these nations. (contextually unacceptable)

(Adapted from Oshita, 1997, p. 339-344)

Regarding the results of the intransitive usages, the acceptance rate by JLEs was 2.55 out of 4, which seems relatively low. No statistically significant difference was observed in the results of English native speakers. In addition, JLEs tended to reject the intransitive usages with ergative verbs more often than those with unergative verbs. On the other hand, the results of transitive usages showed that all the language groups including English native speakers, could accept the sentences correctly. Regarding the results of the passive sentences, JLEs correctly rejected sentences with ergative verbs more than sentences with nonalternating unaccusative verbs.

Based on the results of the GJT, Oshita (1997) claims that the erroneous analysis of the two subclasses of intransitive verbs (i.e., unaccusative-ergative or unergative verbs) can be affected by the principles of UG rather than the learners' L1 (he calls it as "input-based"). According to the unaccusative hierarchy (Sorace, 1993, 1995), one of the principles related to UG, ergative verbs are semantically peripheral unaccusative verbs that compare to verbs of change of location (e.g., *andare/aller, go*) or change of condition (e.g., *sparire/disparaitre, disappear*). Thus, core unaccusative verbs tend to be passivized more often than peripheral ergative verbs. Moreover, like Zobl (1989) and Yip (1995), Oshita (1997) proposes that passive sentences with unaccusative and ergative verbs can be accepted to mark the DP-

movement from the object to the subject position. Furthermore, since intransitive usages with ergative verbs are avoided, he concludes that the sensitivity to the innate principles of UG (he calls these as "*hidden properties of natural languages*") by the interlanguage of L2 learners is seen more often than the L1 influence.

Thus, by comparing the influences of the UG and L1 effects, Oshita (1997) emphasizes the importance of the UG principles for the construction of the interlanguage. His claim might be partially valid because all learners, regardless of their L1, can correctly answer transitive usages; thus, transitive usages (DP-V-DP structure) can be the universally basic structures for human languages. However, regarding intransitive usages, his claim in terms of the unaccusative hypothesis still cannot explain why core unaccusatives would be passivized more often than peripheral ergative verbs, and this needs to be further analyzed.

3.3.1.5 Hirakawa (2000). I focused on the two experiments (Study I and Study II) related to this study. Hirakawa (2000) targets JLEs (Study I:18 JLEs; Study II:22 JLEs) for the investigation of L2 acquisition of English unaccusative verbs, including alternating unaccusative verbs (i.e., intransitive usages of ergative verbs). Study I examines whether JLEs have the knowledge of English unaccusative verbs whose subjects originally come from the direct object position. Study II seeks the cause of overpassivization for unaccusative verbs by considering the role of the L1 effect. The knowledge of L2 English unaccusative verbs was tested through an elicited production task and the GJT in both Studies.

As for Study I, Hirakawa's results of an elicited production task indicated that the sentences were produced correctly in all types of verbs. However, it should be noted that the correct percentage of alternating unaccusative verbs (i.e., intransitive usages of ergative verbs) was relatively low (76.7%) compared to other types of verbs (transitive, 82.2%; unergative, 98.9%; unaccusative with nonalternating, 95.6%). Furthermore, it was found that alternating unaccusative verbs tend to be more passivized than others (*break*: 8 errors; *freeze*: 7 errors; *burn*: 5 errors; *grow*: 1 error). Thus, Hirakawa (2000) points out that learners have the problem in differentiating between transitive usages and intransitive usages with alternating unaccusative verbs. She also assumes that L2 learners may think of "the potential agent" of the verbal action and thus passivize intransitive usages with alternating verbs. As she presents the example of test sentences with the verb *break* in (28), L2 learners may assume that the strong wind causes the action of *breaking the window*; thus, some may passivize as *the window was broken by the strong wind*.

(28)

John was looking out of the window. Because of a typhoon, it was raining heavily, and the wind was blowing hard. All of a sudden, the window _____ with a crash.

(break)

(Adapted from Hirakawa, 2000, p. 142)

The test stimuli used in the GJT are presented in (29). The results of the GJT of a resultative phrase indicate that both L2 learners and native speakers (control) can correctly accept the transitive (29) and intransitive usages with alternating unaccusative verbs (29) and reject the intransitive usages with unergative verbs. Although Hirakawa concludes that no difference in the acceptability rate was observed in the results of L2 or native groups, the acceptance rate of alternating unaccusative verbs (e.g., *Her hair grew long*) by L2 learners was lower than by the native controls. It can be concluded that L2 learners tend to have difficulty considering the active form (DP-V structure) with alternating unaccusative verbs as acceptable.

(29) Test stimuli used in Hirakawa (2000)

a. Transitive (acceptable)
   (Context) The rope was too long.
   (Test sentence) So I cut the rope in two.
b. Unergative (unacceptable)
   (Context) Mary went to a disco and stayed there all night.
   (Test sentence) *She danced tired.
c. Unaccusative 1 (alternating unaccusative) (acceptable)
   (Context) Susan didn't have her haircut for 6 months.
   (Test sentence) Her hair grew long.

(Adapted from Hirakawa, 2000, p. 132):

Based on the results of Study I, Hirakawa (2000) claims that L2 learners can differentiate between unergative and unaccusative verbs like native speakers and thus unconsciously know that the subject of unaccusative verbs derives from the object position,

which is the same as the object of transitive verbs. Since such knowledge cannot be obtained through language instruction, she concludes that they originate innately, as with UG.

In Study II, Hirakawa (2000) examines the influence of L1 Japanese in the acquisition of English unaccusative verbs. It is crucial to note that Hirakawa (2000) considers the role of L1 in L2 unaccusative verbs, contrary to previous studies. She claims that no NP-movement occurs for unaccusative verbs in Japanese ([-NP movement]), although it occurs in English ([+NP movement]). On the other hand, Japanese verbs are marked with overt morphology ([+morphology]), whereas in English they are not ([-morphology]). Therefore, Hirakawa (2000) assumes that these grammatical differences between learners' L1 ([-NP movement] and [+morphology]) and L2 ([+NP movement] and [-morphology]) may cause difficulty in the L2 acquisition of English unaccusative verbs.

As in Study I, two types of tasks, a production task and the GJT, were conducted targeting 22 JLEs. The verbs tested in the study were categorized into transitive, unergative, alternating unaccusative (i.e., intransitive usages of ergative verbs), and nonalternating unaccusative. The alternating unaccusative verbs tested in Study II included *break, melt, continue, dry, increase,* and *spill.* Unlike the GJT in Study I, four types of sentences were judged: intransitive, short passive, full passive, and transitive sentences, as presented in (30).

(30) Examples of the test sentences with alternating unaccusative verbs used in Study II:

a. Intransitive The other one melted.
b. Short passive The other one was melted.
c. Full passive The other one was melted by the sun.
d. Transitive The sun melted the other one.

(Adapted from Hirakawa, 2000, p. 148)

The results of the elicited production task showed a similar tendency in Study I, that alternating unaccusative verbs tend to be passivized (*break*: 5 errors; *spill*: 3 errors; *dry*: 5 errors) and the percentage of correct responses for these verbs is relatively low compared to other types of verbs. Regarding the results of GJT, Hirakawa (2000) reports that JLEs can accept all grammatical sentences like those in (30) as grammatical. However, the mean score of the test sentences as shown in (30) (e.g., *The other one melted)* was 0.77 (maximum score: 2.0), whereas that of the control group was 1.64—a statistically significant difference. Additionally, other intransitive sentences with unergative verbs (e.g., *Bill cried*) and nonalternating unaccusative verbs (e.g., *Jane fell down*) had the mean scores of 1.67 and

1.82, respectively. Hence, it can be said that JLEs seem to have certain levels of difficulty in accepting the intransitive usages with alternating unaccusative verbs as grammatical. As for the results of passive sentences, JLEs tend to accept both short passive (30) and full passive sentences (30). As for the results of transitive sentences, JLEs tend to accept them as grammatical in the same way as the natives.

Based on the results of Study II, Hirakawa (2000) concludes that the learners have correct knowledge of both unaccusative and unergative verbs. However, they may use passive morphology to represent the NP-movement from the object position to the subject position, as Zobl claims (1989). In terms of the influence from L1, Hirakawa (2000) also claims that the effect is partially observed for the particular nonalternating unaccusative verbs. In cases where the translation of English nonalternating unaccusative verbs into Japanese have both transitive and intransitive verbs (e.g., *fall*: *taosu* (vt) and *taoreru* (vi) in Japanese), JLEs tend to accept incorrect passive sentences (e.g., **Jane was fallen down*). However, the effect of L1 Japanese properties, [+morphology] and [-NP movement], was not mentioned in Zobl's comments.

Based on the results of both Study I and Study II, several points need to be considered. First, although Hirakawa (2000) consistently claims that L2 learners tend to have knowledge of the unaccusative and unergative distinction, the results of both studies show that JLEs tend to have difficulty interpreting alternating unaccusative verbs. Thus, the cause for this difficulty should be further analyzed. Moreover, L1 influences, such as [+morphology] and [-NP movement], should be analyzed in more detail.

3.3.1.6 Montrul (2000). To examine how UG and L1 interact in the L2 acquisition of argument structures, Montrul (2000) focuses on the acquisition of ergative verbs (she calls them "causative and inchoative alternations") in English, Spanish, and Turkish as L2. Montrul (2000) supports the full transfer/full access model (henceforth FT/FA model) (B. Schwarts & Sprouce, 1996). The FT/FA model claims that the initial state of L1 acquisition is different from that of L2; thus, the initial state of L2 acquisition is the learners' L1. Montrul (2000) states that examining the acquisition of ergative verbs is a good example to test the validity of the model because the same semantic composition (i.e., the template of argument structure) is seen cross-linguistically. However, the L1 alternation morphology in the verb used in transitive usages is different from that of intransitive usages (i.e., zero or overt morphemes).

In English, no overt morphology is attached with either transitive and intransitive verbs. However, in many languages, including Spanish and Turkish, overt morphemes *are*

attached when expressing transitive and intransitive forms. In Spanish, as shown in (31), the transitive form does not comprise overt morphemes, whereas the intransitive form requires overt morphemes (i.e., the reflexive clitic *se*):

(31) Transitive and intransitive forms in Spanish:

a. Transitive form: El enemingo hundió el barco.
"The enemy sank the ship"

b. Intransitive form: El barco *se* hundió.
"The ship sank."

(Adapted from Montrul, 2000, p. 234)

In Turkish, two types of suffixes (transitive: *-Dlr* or *–t*; intransitive: *-il*) appear in causative/inchoative alternations. Montrul points out that most Turkish change-of-state verbs follow the causative pattern, and thus, the transitive form is marked with *-dil* and the intransitive form is not marked with any overt suffix, as shown in (32). Moreover, another type of change-of-state verbs (e.g., *aç-mak*, "open"; *kapa-mak,* "close"; and *kir-mak,* "break") exhibits that the transitive form has no overt suffix and the intransitive form is marked with the overt suffix, *-il*, as shown in (33). It should be noted that the suffix in the intransitive form *-il* is the same as in the passive morphemes and also can be observed in middle construction.

(32) Transitive and intransitive forms in Turkish (pattern 1):

a. Transitive form: Düşman gemi-yi bat-*lr*-miş
Enemy ship-ACC sink-CAUS-PAST
"The enemy sank the ship"

b. Intransitive form: Gemi bat-miş
Ship sink-PAST
"The ship sank"

(33) Transitive and intransitive forms in Turkish (pattern 2):

a. Transitive form: Hirsiz pencere-yi kir-dt
Thief window-ACC break-PAST
"The thief broke the window"

b. Intransitive form: Pencere kir-*il*-dt

Window broke-PASS-PAST

"The ship sank"

Montrul points out that semantic restriction in causative/inchoative alternation is a universal phenomenon, while these transitive and intransitive forms are different in those three languages. Semantic templates for both transitive and intransitive usages can be hypothesized as shown in (34): two types of information consist of verb meanings, event type (i.e., *cause*, *be*, and *become*), and participants in the event (i.e., arguments expressed as x and y). "The base form" is the transitive usage in (34) and the intransitive usage in (34) is a derived form via detransitivization.

(34) Semantic templates of transitive and intransitive usages:

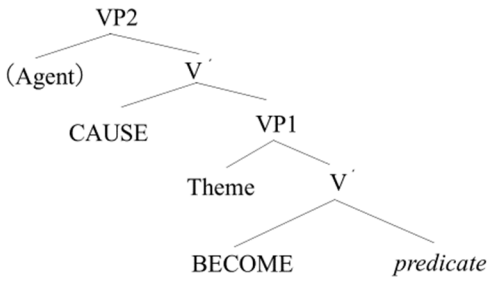
a. Transitive usage: [x CAUSE [y BECOME predicate]]

b. Intransitive usage: [y BECOME predicate]

(Montrul, 2000, p. 239)

Based on this approach, Montrul (2000) proposes a template for all argument structures, as shown in (35), claiming that "templates are part of knowledge of UG" (p. 244). The VP2 has the agent in the specifier and is headed with *cause*, while the VP1 has the theme in the specifier and is headed with *become*. In the case of argument structures with double-used verbs, first, after the insertion below the VP1, the verbal roots (e.g., *sink*) move to the head of the VP1 to conflate with *become*. Second, they move to the head of the VP1 to conflate with *cause*; thus, they have the causative interpretation of transitive usages. Then, the *cause* predicate overtly contains the transitive suffix *-Dir* in Turkish, and the *become* predicate overtly contains the intransitive suffix *-il* in Turkish and the morpheme *se* in Spanish.

(35)



(Adopted from Montrul, 2000, p. 244)

If this semantic template of argument structure is truly a universal language, learners with three different L2s should show the same type of errors or lack of errors. However, if the FT/FA model is correct, the L1 influence needs to be considered because their respective L1s have different overt morphemes that mark transitive and intransitive alternations. Therefore, Montrul conducts three studies by targeting L2 learners who speak three different languages.

Despite the other two studies (Turkish and Spanish), this research focuses on the English study for its relevance. The participants of the English study were 29 Spanish learners (12 high-intermediate, 17 intermediate), along with 19 native English speakers as controls. The test instrument adopted in the main experiment was the picture judgement task. Two types of sentence pairs were presented: transitive sentence pairs and intransitive sentence pairs. As for the transitive sentence pairs, one was a transitive usage (DP-V-DP structure) (e.g., *The thief broke the window*) and the other had the English verb *make* (e.g., *The thief made the window broken*), the Spanish verb *hacer*, and the Turkish suffix *-Dir*. As for the intransitive sentence pairs, one was a simple intransitive usage (DP-V structure) (e.g., *The window broke*) and the other had the English verb *get* (e.g., *The window got broken*), the Spanish reflexive clitic *se,* and the Turkish morpheme *-il*.

The results of transitive and intransitive sentences with double-used verbs supported the validity of the FT/FA model. Regarding the results of transitive sentences, all the groups accepted English transitive sentences (e.g., *The thief broke the window*) and rejected the double-used verbs with the English verb *make* (e.g., *The thief made the window broken*). Thus, the results did not support Montrul's (2000) prediction that Turkish learners would reject simple transitive sentences (DP-V-DP structure) since some Turkish transitive sentences are marked with the suffix.

As for the results of intransitive sentences in the English study, the L1 influence was observed. This was because only the Spanish learners rejected the English intransitive usages (e.g., *The window broke*), while others accepted them. Moreover, the Spanish learners accepted the verbs with *get* (e.g., *The window got broken*). This indicates that they seem to require the reflexive clitic *se* in English intransitive sentences in the same way as in their L1. Regarding the results of Turkish learners, since they accepted both types of sentences, Montrul's explanation of L1 transfer—"one pattern matches the target language; this is what they transfer" (p. 260)—makes sense. Note that Turkish intransitive usages have or do not have overt morphemes. However, Kondo (2009) criticizes Montrul's (2000) explanation, arguing that it cannot account for results in which the mean response rate of transitive usages by Turkish learners is higher than that of intransitive ones. Thus, it can be considered that while the factor of L1 morphological transfer is persuasive for the results of the Spanish learners, it does not fully explain the results of the Spanish and Turkish learners, which indicated that transitive variants were preferred over intransitive variants.

The overall results of Montrul's (2000) study revealed that L2 learners tend to accept or reject the test sentences by relying on their L1 morphologies. She claims that, by supporting the FT/FA model, the initial state of morphology in L2 is the learners' L1, while the initial state of the argument structure level is the UG. Therefore, she concludes that L1 transfer conforms to "modularity," as well as the L1 transfer of morphology. If her claim is valid and L1 verb inflection affects the L2 acquisition of English ergative verbs, it may also be difficult for JLEs to acquire the usages of English ergative verbs since Japanese ergative verbs are intransitively and transitively inflected differently, while English ergative verbs have the no overt morphology in both transitive and intransitive forms. However, as mentioned above, the influence of L1 morphology cannot account for some results of her experiment, since the participants tended to accept transitive over intransitive sentences, regardless of their L1. In addition, if the influence of L1 morphology is the only factor that causes different rates of accepting transitive and intransitive verbs, it would be necessary to prove that the results do not indicate differences depending on individual test sentences (verbs). These points need to be further considered here.

3.3.1.7 Matsunaga (2005). In the following sections, I introduce previous studies that focus on L1 transfer targeting JLEs, namely Matsunaga (2005) and Kondo (2009). Matsunaga (2005) focuses on the influence of L1 transfer from a lexical argument structure. As previous L2 studies have investigated the sources of overpassivized errors (e.g., unaccusative: **The sun was appeared*, unergative: **The baby was cried*), Matsunaga (2005)

also examines the cause of overgeneralization errors by targeting verbs including ergative verbs (in her words, "alternating unaccusative verbs") by L2 English learners whose L1s were Japanese and Spanish.

In her theoretical framework, based on Hale and Keyser (2002), both Japanese intransitive and transitive usages have a morphology that appears in the head of the lower and upper V, respectively. Adopting the idea of Kageyama (1996), Matsunaga claims that there are two types of derivational patterns in Japanese intransitive structures: de-causativization and anti-causativization. Both derivational patterns have different morphologies (e.g., de-causativization: *-ar-*, anti-causativization: *-e-*). Unlike the derivational process of anti-causativization, the process of de-causativization exhibits the external argument and then becomes unspecified (Kageyama, 1996). Moreover, since Japanese has overt morphology (e.g., *-as-*, *-os-*, and *-e-*) in transitive usages, there is another derivation called "causativization" in transitive usages. Therefore, Matsunaga assumes that Japanese has three types of derivations—anti-causativization, de-causativization, and causativization—whereas English and Spanish only have anti-causativization. This can explain why Japanese verbs such as *happen (ok-os-u/oki-ru)* have both usages, while the corresponding English or Spanish verbs (i.e., *happen*) have only an intransitive usage. Based on the theoretical framework mentioned above, Matsunaga tests the validity of her hypothesis that the whole argument derivation with L1 morphology can be transferred to that in L2.

The participants in this study were 29 Spanish learners of English (SLEs) and 28 JLEs. These two groups were further divided into two groups by proficiency (low proficiency and upper proficiency). There were native English speakers included as controls. The test materials used in the study were an acceptability judgement task and a translation-based production task. In the acceptability judgement task, participants were asked to rate the acceptability of test sentences (both transitive and intransitive usages) based on a 3-point scale that ranged among *impossible, possible but natural*, and *natural*. Examples of test sentences used in the acceptability judgement test are presented in (36) for intransitive usages and in (37) for transitive usages. As for the intransitive usages shown in (36), in addition to an intransitive usage (DP-V structure), either a passive or a get-passive sentence was attached to each test sentence. Furthermore, two types of discourse contexts (i.e., passive and nonpassive contexts) were presented.

(36) Examples of test sentences in Matsunaga (2005):

a. intransitive and passive sentences (non-passive contexts)

Context: That vase had been cracked since I dropped it last Christmas. Yesterday finally

Test sentence: a. The vase broke.

b. The vase was broken.

b. intransitive and *get*-passive sentences (non-passive contexts)

Context: The glass had been weakened through being washed so often in the dish-washer. Today, for no reason,

Test sentence: a. The glass broke.

b. The glass got broken.

c. intransitive and passive sentences (passive contexts)

Context: While washing dishes after the dinner, Tom dropped one of the plates.

Test sentence: a. The plate broke.

b. The plate was broken.

(Adopted from Matsunaga, 2005, p. 89)

As for the transitive usages shown in (37), transitive usages (DP-V-DP structure) and *make* causative sentences are presented within two types of contexts (i.e., direct and indirect causative contexts).

(37) Examples of test sentences:

a. for transitive and make causative sentences (direct causative contexts)

Context: Bill got this glass at a low price. When he squeezed it too hard, however,

Test sentence: a. Bill broke the glass.

b. Bill made the glass break.

b. transitive and make causative sentences (indirect causative contexts)

Context: Bill found a new glass left in the kitchen. When he poured boiling water into it,

Test sentence: a. The heat broke the glass.

b. The heat made the glass break.

The results showed that JLEs with low proficiency levels incorrectly tended to reject correct uses of intransitives with ergative verbs (e.g., *The chair broke*). These JLEs tended to prefer passive sentences (e.g., *The chair was broken*) to intransitive usages (e.g., *The chair broke*) in both contexts. Those with higher proficiency showed no statistically significant differences between intransitive usages and passive sentences in both contexts. In contrast, SLEs did not show such a tendency; that is, those with upper proficiency level tended to prefer intransitive usages to passive sentences, which does not match the results of Montrul (2000).

Matsunaga proposes that the difference in results between Spanish and Japanese L1s, as well as between proficiencies, was observed because of the different cross-linguistically derivational processes. As explained above, in English and Spanish, the derivational process in intransitive usages with ergative verbs is called "anti-causativization," whereas, in Japanese, "de-causativization" is also observed, in addition to "anti-causativization." Hence, Matsunaga suggests that JLEs, in particular those with low proficiency levels, may hypothesize the availability of de-causativization in English. Since the initial derivational process of de-causativization projects an agent in the transitive structure, she explains that those JLEs might cause overpassivization due to the availability of an agent during the process of derivation. However, as Kondo (2009) has pointed out, Matsunaga did not explain why only de-causativization rather than anti-causativization affected the results for JLEs.

The results of transitive usages showed that all learners regardless of their L1 selected the transitive usages (e.g., *Bill broke the glass*) more than the transitive usages with *make* (e.g., *Bill made the glass break*). Since Japanese transitive usage is marked with the overt morphology and Spanish is not, Matsunaga predicted that JLEs would prefer transitive usages such as *Bill made the glass break* to *Bill broke the glass*, whereas SLEs would not show such a preference. Thus, the results were contrary to her predictions. Additionally, Matsunaga proposes that L2 learners regardless of their L1 transfer syntactic or lexical structures to L2. However, her explanation is not persuasive because she only refers to L1 transfer and does not clarify how the L1 transfer of these two causations affect L2 learners' judgement of acceptability.

To sum up, in addition to the influence of L1 transfer from morphology as proposed by Montrul (2000), this study refers to the possibility of L1 transfer from the derivation patterns in the argument structure and causative contexts at a syntactic level. Matsunaga claims that two types of derivation in Japanese intransitive usages—anti-causativization and de-causativization—affect JLEs' acceptance of intransitive usages. In particular, one of the

derivational patterns of Japanese intransitive usages, i.e., de-causativization (e.g., *-ar-* for *uw-ar-u,* (= be planted)) that does not exist in English or Spanish seem to cause the overuse of passive forms in English ergative equivalents. However, the problem is that Matsunaga does not explain why JLEs only transferred de-causativization, and not anti-causativization. If L1 transfer occurs in derivational processes, the influence of both causativizations should be considered. Furthermore, if the influence of both types of derivational patterns can be the only factor causing overuse of intransitive usages, it is necessary to prove that there should be no statistically significant difference between individual verbs. If the degree of acceptability regarding passive intransitive sentences shows statistically significant differences among the individual verbs used in intransitive forms, there must be another factor causing overpassivization.

***3.3.1.8 Kondo (2009*).** Based on the discussions of Montrul (2000) and Matsunaga (2005) regarding the influence of L1 morphology, Kondo (2009) raises the following questions: (a) what causes L1 transfer in L2 acquisition; and (b) what degree of L1 morphology influences learners' L2? Kondo also examines how L1 morphology plays a role in learners' interlanguage in L2 acquisition of unaccusative verbs, including ergative verbs. She predicts that it would be difficult for JLEs to apprehend some change-of-state verbs in English (with no overt morphology) because their equivalents in L1 Japanese are marked with morphologies in both transitive and intransitive forms.

Here, I would like to focus on her experiment that targeted JLEs with different proficiency levels (although she conducted two types of experiments in her dissertation). The experiment in question focused on L2 acquisition of unaccusative verbs in English by JLEs from two perspectives: the influence of L1 morphology and the availability of UG. The hypotheses tested by Kondo (2009) were found valid: (a) JLEs will prefer the passive form (e.g., *the vase was broken*) to the intransitive form (e.g., *the vase broke*) because the intransitive usages of equivalent verbs in Japanese (e.g., *break*: *war-e-ru*) are morphologically marked; and (b) since the transitive form of equivalent verbs (e.g., *break*: *waru*) are not morphologically marked, JLEs will prefer the simple transitive usage (e.g., *Ann broke the vase.*) to one with a causative morpheme, *make* (e.g., *Ann made the vase broke*). If the intransitive form of the equivalent verb in L1 is not morphologically marked, such as in *aku* (*open*) or *kawaku* (*dry*), Kondo assumes that JLEs will prefer the simple intransitive usages (e.g., *the door opens*) rather than the passive form (e.g., *the door is opened*).

Kondo's (2009) study participants were 62 university JLEs and 18 native English speakers as controls. The JLEs were further divided into five proficiency groups: elementary, lower intermediate, upper intermediate, advanced, and very advanced. She tested verbs belonging to the following four types: 12 ergative verbs (alternating unaccusative verbs), 6 unaccusative verbs (nonalternating), 6 enervative verbs, and 6 transitive verbs. The 12 ergative verbs (alternating unaccusative verbs) in Japanese were further classified into 6 patterns, as presented in Table 1, based on the categorization of unaccusative verbs from the morphological perspective proposed by Jacobsen (1992). As shown in Table 1, Type 1 verbs (e.g., *break, burn*) are morphologically marked (-(*r*)*e*-) in the Japanese intransitive form (*war-e-ru, yak-e-ru*), whereas no overt morphology is marked in a transitive form (*war-u, yak-u*). Type 2 verbs (e.g., *open, sink, close, change*) are morphologically marked (-*e*-) in the Japanese transitive form (e.g., *ak-u, shizum-u, shim-ar-u, kaw-ar-u*), whereas intransitive forms have two types of verb morphologies: zero morphology (e.g., *ak-u, shizum-u*) and -*ar*- (e.g., *shim-ar-u, kaw-ar-u*). In Type 3 verbs (e.g., *dry, freeze*), the Japanese intransitive form is marked with zero overt morphology (e.g., *kawak-u, koor-u*), while a transitive form is marked with the morphology -*as*- (e.g., *kawak-as-u, koor-ase-ru)*. Finally, Type 4 verbs (e.g., *melt*) are morphologically marked in both the Japanese intransitive (-*e*-: *tok-e-ru*) and transitive forms (-*as*-: *tok-as-u*).

An acceptability judgement test using a seven-point scale (-3 to 3) was administered to the participants. Unlike Montrul (2000), Kondo (2009) provides a written context instead of pictures. The examples of the test sentences used in the first experiment performed by Kondo are shown in (38) for both transitive and an intransitive contexts. In a transitive context, both a standard transitive form (DP-V-DP structure) and a transitive form with *make* (Kondo calls it "a periphrastic causative sentence with *make*") were presented. In an intransitive context, both a simple intransitive form (DP-V structure) and a be-passive form were presented. It should be noted that some of test sentences used in Kondo's experiment were adapted from Ju (2000).

Table 1 *Ergative Verbs Used in Kondo (2009, p161) by Japanese Morphological Patterns*

	Japanese morphological pattern			Intransitive	Transitive
Unaccusative [+transitive] (ergative verbs) In English	Type 1: - (r)e -/- Ø -		“break” “burn” “sell” “collapse”	*war-e-ru* *yak-e-ru* *ur-e-ru* *kuzu-re-ru*	*war-u* *yak-u* *ur-u* *kuzu-su*
	Type 2:	- Ø- / -e-	“open” “sink”	*ak-u* *shizum-u*	*ak-e-ru* *shizum-e-ru*
		-ar- /-e-	“close” “change”	*shim-ar-u* *kaw-ar-u*	*shim-e-ru* *ka-e-ru*
	Type 3: -Ø-/-as-		“dry” “freeze” “boil”	*kawak-u* *koor-u* *wak-u*	*kawak-as-u* *koor-ase-ru* *wak-as-u*
	Type 4: -e-/-as-		“melt”	*tok-e-ru*	*tok-as-u*

(38) Examples of test sentences used in Kondo (2009):

a. transitive usages

Context: I found a lot of photos of my ex-girlfriend.

Test sentence: a. I burned them to forget about her.

b. I made them burn to forget about her.

b. intransitive usages

Context: During the hot, dry weather last year, the hay in the farmer’s barn caught fire.

Test sentence: a. The hay burned.

b. The hay was burned.

(Adapted from Kondo, 2009, p157)

From the results of Type 1 verbs (morphology: (vi) - (*r*)*e*- and (vt) - Ø -), Kondo pointed out that, as learners' proficiency increases to the very-advanced level, they improve their tendency toward overpassivization. The results show that the elementary and upper-intermediate groups accepted both the simple intransitive (e.g., *The pot broke*) and the passive forms (e.g., *The pot was broken*). The lower-intermediate group rejected the simple intransitive form but accepted the passive form, whereas the very-advanced and native control groups apparently accepted the simple transitive form but rejected the passive form.

As for Type 2 verbs (morphology: (vi) - Ø- or -*ar*- and (vt) -*e*-), Kondo points out that the results of both the transitive and intransitive usages were contrary to her prediction from the perspective of the full transfer of L1 morphology. The results of the intransitive usages show that all the proficiency groups accepted the simple intransitive form (e.g., *The door closed by itself*) and all the proficiency groups except the elementary group rejected the passive form (e.g., *The door was closed by itself*). In addition, the results of verbs with zero morphology and those with marked morphology (-*ar*-) did not show a statistical difference. Thus, Kondo states that the influence of overt morphology was not observed in the results of Type 2 verbs. Regarding transitive usages in Type 2 verbs (morphology: -*e*-), all the proficiency groups accepted the simple transitive form (e.g., *He closed the window*) and rejected the transitive form with *make* (e.g., *He made the window close*).

Regarding Type 3 verbs (morphology: (vi) - Ø- and (vt) -*as*-), the results of transitive usages did not show the influence of overt morphology in their L1 equivalent verbs, but those of intransitive usages can be explained by the L1 influence of overt morphology. However, the influence of learners' proficiency level should be considered. Kondo (2009) predicts that JLEs should not have any difficulties in comprehending intransitive usages but should have difficulties with transitive usages, since the L1 morphology of Type 3 verbs have no overt morphology for intransitive usages and do have overt morphology for the transitive ones (-*as*-). The results of intransitive usages indicate that all the proficiency groups expected the elementary group to accept the simple intransitive form (e.g., *The water boiled quickly*) and rejected the passive form (e.g., *The water was boiled quickly*). However, the elementary group accepted both the simple intransitive and the passive forms. In the results of transitive usages, all the proficiency groups except the elementary group accepted the simple transitive form (e.g., *I boiled the water*) and rejected the transitive form with *make* (e.g., *I made the water boil*). In contrast, the elementary group accepted both forms.

Regarding Type 4 verbs (morphology: (vi) -*e*- and (vt) -*as*-), the results of the intransitive usages showed that all the proficiency groups except the elementary group

accepted the simple intransitive form (e.g., *The snow melted*) and rejected the passive form (e.g., *The snow was melted*). The elementary group accepted both forms. This is contrary to the expectation of Kondo, who predicted that JLEs would reject the simple intransitive form and accept the passive form since L1 equivalent verbs in Type 4 are marked with an over morphology *-e-*. In the results of transitive usages, all the proficiency groups except the elementary group accepted the simple transitive form (e.g., *He melted some chocolate*). In addition, all the proficiency groups except the upper-intermediate group accepted the transitive form with *make* (e.g., *He made some chocolate melt*). However, since Kondo investigates only the verb *melt* as a Type 4 verb and the test sentences of transitive usages sound semantically ambiguous in comparison to other test sentences, she emphasizes the necessity of further investigation of this verb type.

From the results presented by Kondo (2009), it is hard to generalize that L1 a morphology will fully transfer onto its L2 counterparts in both transitive and intransitive usages. As for the intransitive usages, only the L1 morphology *-e-* in Type 1 verb seems to transfer to its L2 equivalents so that JLEs tend to accept the passive form. However, L1 morphologies in other types do not seem to transfer. Kondo states that these results are observed in all the proficiency groups, from the elementary to the upper-intermediate levels, based on individual results.

Kondo (2009) also discusses why one particular L1 morphology transfers and when others do not. According to Wakabayashi (2002), L2 learners transfer L1 properties only when they think that the properties are similar to their L1 (the so-called *selective transfer*). Based on this point of view, Kondo claims that the morphological similarities between the Japanese passive and intransitive forms seem to cause a preference for accepting passive forms. In Japanese, the morphological form *-e-* is generally used in a passive form (e.g., *Atarashii hashi-ga taterar-e-ta* (= *A new bridge was built*). Thus, JLEs may regard *Mado-ga kowar-e-ta* (= *The window broke*) as passive. If this claim is valid, JLEs would have trouble interpreting verbs with an *-e-* morpheme. In other words, they would not have any difficulty interpreting English sentences with other intransitive usages with ergative verbs that do not have the morpheme *-e-*. Additionally, the L1 morphologies in transitive usages do not seem to transfer onto their L2 equivalent verbs in the transitive form with *make*. Therefore, Kondo's H1 is not fully supported.

Kondo (2009) also explains the phenomenon of selective L1 morphological transfer by referring to the difference of the depth in the derivational structure between *-e-* (i.e., the anti-causative morpheme) and *-ar-* (i.e., de-causative morpheme). The morpheme *-e-* is

located in the lowest V in the derivational structure, while the morpheme *-ar-* is located in the upper V. She claims that only the morpheme that occupies the deepest level of the derivational structure can be transferred onto the learners' L2. However, it is still necessary to explain why a morpheme in the deepest level of the derivational structure can be transferred while one in the shallow level cannot.

Kondo (2009) also notes that the relationship between learners' proficiency levels and their performances can be explained through the FT/FA model. Since JLEs in elementary level groups tend to accept the passive form while others in higher proficiency levels tend to reject it, in the early stage of L2 acquisition L2, learners seem to transfer their L1 property onto the L2; then, as their proficiency increases (i.e., the amount of L2 input increases), their L2 competence can reach the native speaker levels. However, if this claim is valid, it is necessary to replicate the experiment by increasing the number of participants at the elementary level; Kondo had only 4 such participants for Type 4 verbs. Moreover, all the participants should answer all the test sentences of all the types since the number of participants differed depending on the types.

Another important issue found in Kondo (2009) is that JLEs at the elementary level seem to accept the passive forms, regardless of whether overt morphologies in L1 equivalent verbs are available or not. Therefore, there seems to be another factor affecting the results that cannot be explained by the influence of L1 transfer.

3.3.2 Semantic and cognitive factor

Apart from the syntactic factors influencing the L2 acquisition of English ergative verbs, I would like to review the previous studies, which consider it from the perspective of semantic factors—in other words, the L2 learners' cognitive factor.

3.3.2.1 Ju (2000). Ju (2000) claims that the overpassivization phenomenon of unaccusative verbs, including ergative verbs, is not caused by the lack of L2 syntactic knowledge; this is contrary to the syntactic factors affecting the interpretation of ergative verbs, such as the NP-movement hypothesis (Zobl, 1989; Oshita, 1997) or the transitivization hypothesis (Yip, 1995). Ju (2000) also denies the influence of learners' L1 and their proficiency levels. Moreover, she criticizes that the theories (e.g., NP-movement hypothesis and transitivization hypothesis) proposed in previous literature cannot explain why the acceptability rate of DP-V structure with unaccusative verbs is different depending on individual verbs. For example, she reports that about 80% of the L2 learners who participated in the experiment by Ju (1997) tended to incorrectly reject intransitive sentences

like *The car disappeared*, while about 20% of them tended to incorrectly reject intransitive sentences like *The accident happened.*

Ju (2000) proposes that "the availability of a conceptualized agent" in the discourse context might be the factor causing difficulty in the acquisition of unaccusative verbs. As shown in (39), although both (a) and (b) have the same sentence *The ship sank slowly*, the first sentences are different: (a) represents the agents who sink the ship (i.e., *A fighter jet*), and L2 learners tend to reject *The ship sank slowly* and accept the passive sentence, *The ship was sank slowly* (*by a fighter jet*), so the conceptualized agents in the discourse cause the verb event. On the other hand, (b) does not represent the agents of the verb event due to the internal causation. Thus, Ju (2000) tests whether the availability of conceptualized agents in the discourse context can cause the phenomenon of overpassivization in unaccusative verbs including ergative verbs:

(39)

a. A fighter jet shot at the ship. The ship sank slowly.

b. The rusty old ship started breaking up. The ship sank slowly.

Ju (2000) conducts the forced-choice task for Chinese Learners of English (CLEs). Exampled from her experiment are shown in (40). Test sentence (a) implies that an agent in the discourse context (i.e., *I*) causes the verb action; thus, the event was caused externally. In contrast, test sentence (b) does not imply the existence of an agent in the discourse to cause the verb action, suggesting that the event was caused internally. Ju asks the CLEs to select either an active or a passive form from these two types of test sentences for each verb. It should be emphasized that Ju intentionally controls the animacy of the subject nouns in the test sentences by only including the inanimate ones because previous studies such as Croft (1995) have noted that animacy affects the selection of the voice form.

(40) Examples of test sentences used in Ju (2000):

a. externally caused

a. discourse context: I pushed the rock slightly.

b. test sentence: It (rolled / was rolled) quickly down the hill.

b. internally caused

a. discourse context: The rock came loose.

b. test sentence: It (rolled / was rolled) quickly down the hill.

(Adapted from Ju, 2000, p. 109-110)

Ju found that CLEs tend to choose passive forms for sentences describing externally caused events more so than for internally caused events. She also confirms the variation of results between individual verbs. As shown in Figure 2, CLEs tend to select passive forms with *close* and *break* and select active forms with *grow* and *decrease*. Ju (2000) explains that closing and breaking events are typically induced by external objects, while growing and decreasing events are typically induced within the process of growing or decreasing. Hence, the degree to which agents in discourse contexts influence the cause of verb action seems to play a key role in L2 learners judging the grammaticality of intransitive usages with ergative verbs.

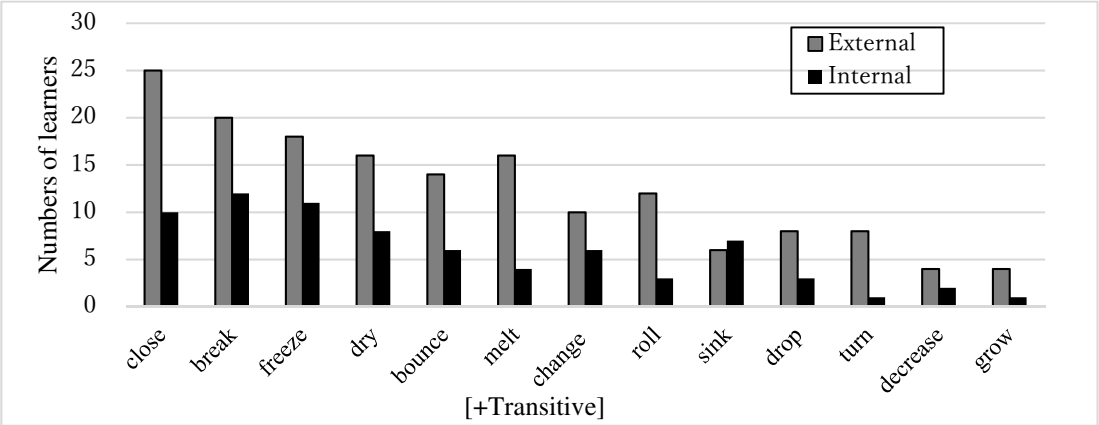


Figure 2 Number of learners who made overpassivization errors

(Adapted from Ju, 2000, p. 99)

However, several points proposed by Ju (2000) should be considered. Her idea on the availability of "the conceptualized agent" in the discourse context can also be interpreted as that L2 learners seek the thematic role of the agent in the subject nouns regardless of transitive or intransitive sentences. Thus, although the correct thematic role of the subject nouns with unaccusative verbs is theme/patient, if they think the subject nouns in intransitive usages cannot behave like agents, they may accept the passive sentences since those subject nouns cannot function as agents that initiate the verb action by themselves. Therefore, two crucial factors for their interpretation are whether the subject nouns can initiate the verb action or not (in other words, whether they are agents or not) and whether they are animate

or inanimate nouns. Thus, the influence of animacy in subject nouns can be a factor that causes difficulty in apprehending intransitive usages with ergative verbs. From the perspective of animacy, in her comments in the discussion section, Ju (2000) highlights the possibility of the animacy effect by referring to the animacy hierarchy proposed by Croft (1995, p. 104): human > animate > inanimate> abstract entities. Human subjects are likely to be natural, whereas abstract entities as subjects are less likely to be natural. Since the subject nouns of unaccusative verbs, including intransitive usages of ergative verbs, tend to have inanimate and abstract entities as subjects due to the thematic roles of theme/patients, Ju (2000) claims that L2 learners may be confused by this uncanonical mapping of animacy onto its arguments and hence may accept the passive sentences to represent them as unnatural. Therefore, the idea of animacy effects in subject nouns needs to be further investigated in this study.

The results of the replication study conducted by Kondo (2009) contradicted those of Ju (2000). By targeting both JLEs and SLEs, Ju's (2000) replication experiment shows different results between both groups. Since both L1 languages have different morphological systems, Kondo claims that the results may come not only from the different degree of the conceptualized agentivity in the discourse context, as Ju (2000) proposes, but also from the influence of the morphological properties in learners' L1, as Montrul (2000) proposes. However, Kondo's (2009) replication study has some limitations. First, although Kondo (2009) conducts her replication of Ju's (2000) study, she tested only a limited numbers of verbs in her study: only 7 out of 13 types of ergative verbs used by Ju (2000) were included in Kondo's study. Second, although there were 35 CLEs, the numbers of JLE and SLE participants in Kondo's study were very small—13 JLEs and 7 SLEs compared to 35 SLEs in Ju's study (2000). Thus, it would be a mistake to generalize the results of Kondo (2009) by claiming that both L1 groups' performances differ from those of the results of Ju (2000). Thus, by considering both L1 influence and the cognitive factors, further experiment is necessary to reveal the factor causing the difficulty in interpretation of intransitive usages with ergative verbs.

3.3.2.2 Luk and Shirai (2016). As Ju (2000) claims, if the availability of a conceptualized agent in the discourse contest affects CLEs' overpassivization of intransitive usages with English ergative verbs, and if this is a universal phenomenon, this claim can also be applied to Chinese-speaking learners who learn Japanese as an L2. Luk and Shirai (2016) show the validity of Ju's (2000) claim by testing the L2 acquisition of both Japanese transitive and intransitive verbs by targeting 40 Chinese learners of Japanese (CLJs).

Adopting the procedure used by Ju (2000)—i.e., a forced-choice questionnaire, as shown in (41)—Luk and Shirai asked CLJs to select the correct answer from the following choices: intransitive (e.g., *tooru* "go through"), transitive (e.g., *toosu* "cause something to go through"), potential form of the intransitive (e.g., *tooreru* "someone can go through"), potential form of the transitive (e.g., *tooseru* "can cause something to go through"), and passive form of the transitive (e.g., *toosaseru* "be let through"). The test sentences had two conditions, internal and external causation, and each condition was subcategorized into affirmative and negative sentences.

(41) Examples of test sentences used in Luk & Shirai (2016):

[internal causation]

Aki ni naru to, ha na iro (*ga kawaru* (intr.) / *o kaeru* (tr.) / *ga kawareru* (intr.potential) / *ga kakerareru* (tr. potential) / *ga kaerareru* (passive)).

"When autumn comes, the color of the leaves (changes)"

[external causation]

Kokkai de atarasii hooritsuan (*ga tootta* (intr,) / *o toosita* (tr.) / *ga tooreta* (intr. potential) / *ga tooseta* (tr. potential) / *ga toosareta* (tr. passive)).

"At the congressional assembly, a new law (passed)."

(Adapted from Luk & Shirai, 2016, p. 368)

The results of the internal causation condition show that, regardless of affirmative or negative sentences, both CLJs and native speakers of Japanese prefer the intransitive form, which is consistent with the results observed in Ju (2000). On the other hand, the results of external causation indicate that CLJs prefer the passives in affirmative sentences and the potential forms for negative sentences, even though native Japanese speakers prefer the intransitive forms in both conditions, which was not seen in Ju (2000). Therefore, as Ju (2000) claims, it can be said that CLJs are influenced by the conceptualized agents in discourse context; thus, they tend to select the passive sentences. However, in the case of negative sentences under external causation conditions, CLJs prefer to select the potential form of transitive sentences rather than passives. Luk and Shirai (2016) explain that CLJs might interpret that the potential transitive form in negative sentences expresses the intention

of the agent. For example, a negative sentence with the modal verb *can* (e.g., English: *Mary could not cut her own steak*) implies the intention of the agent, whereas the negative sentence itself (e.g., English: *Mary did not cut her own steak*) does not imply any intention of the agent. Luk and Shirai (2016) point out that the different results between negative and affirmative sentences in the external causation condition cannot be explained by the NP-movement hypothesis proposed by Zobl (1989) and Balcom (1997) since both underlying syntactic structures with unaccusative verbs are the same.

Therefore, Luk and Shirai (2016) conclude that these results come from semantic factors. They suggest two possible reasons. First, in terms of L1 semantic transfer, native Chinese speakers may seek the agent in sentences because the scope of meaning in Chinese includes the agent and linguistically presents it. In contrast, the scope of meaning in Japanese focuses on the result of the verb event. Second, as Ju (2000) claims, in terms of human cognition and regardless of L1 backgrounds, L2 learners have a preference for recognizing agents as sentential subjects. However, Luk and Shirai (2016) also note that this cognitive preference is limited only in L2 acquisition. If so, Luk and Shirai (2016) should further explain *why* it only functions in L2 acquisition. They mention that these CLJs might not feel confident about their L2 proficiency. However, since this preference for seeing agents as sentential subjects has been recognized in L1 acquisition among children (e.g., Scott & Fisher 2009; Becker & Schaeffer, 2014), this should be a fundamental cognitive strategy that human beings innately possess. Thus, it is necessary to further investigate why L2 learners tend to use this universal cognitive strategy only in L2 acquisition.

As Ju (2000) and Luk and Shirai (2016) propose, if L2 learners are affected by the agents in the discourse contexts and select passive sentences for these agents to induce the verb action, they might recognize that the sentential subject nouns in intransitive usages cannot cause the verb action by themselves and cannot work as agents. One possibility is that these subject nouns are inanimate; thus, the L2 learners use the universal cognitive strategy to seek the agents outside of the test sentences, which leads to overpassivization.

3.3.3 Analysis of test stimuli used in previous literature

I reanalyzed the test sentences used in previous studies to see if there is a tendency linked to the property of sentential subject nouns such as animacy. First, in the test sentences in Oshita (1997), as shown in (42), intransitive usages (a–d) have inanimate nouns as subjects (e.g., *most of the snow, the average family size, some windows*, and *the water level*); the results show that L2 learners tend to avoid the sentences (DP-V word order). Hence, one

possibility is that they think that inanimate subject nouns cannot cause the verb action by themselves and regard the test sentences as unacceptable.

(42) Test sentences used in Oshita (1997):

[Intransitives]

a. Most of the snow melted.
b. The average family size will decrease in these nations.
c. Some windows shattered.
d. The water level may increase rapidly.

[Transitives]

e. The sun melted most of the snow.
f. The lower birth rate will decrease the average family size in these nations.
g. The violent shakes shattered some windows.
h. The heavy rain may increase the water level rapidly.

(Adapted from Oshita, 1997, p.339-344)

Second, the results of Hirakawa (2000) also reveal that L2 learners have an acquisitional problem with alternating unaccusative verbs. However, she hardly refers to the reason why they tend to overpassivize the sentence or marks the low acceptability rate for the active form, other than referring to the use of "the potential agent." Hence, I reanalyzed the test sentences used in two studies and found that all subject nouns except those in one sentence of those with alternating unaccusative verbs (*e* in a production task at Study I) are inanimate, as shown in (43) for Study I and in (44) for Study II. They are *the snow, the window, the juice, it* (*the candle*), *her hair, the base, the cake, the butter,* and so on. Since those inanimate nouns cannot cause the verb action by themselves, L2 learners might have sought the so-called "potential Agent" in the test sentence or the discourse.

(43) Test sentences used in Study I (Hirakawa, 2000) for alternating unaccusative verbs:

[Production task]

a. The snow _____(melt) quickly.
b. The window _____(break) with a crash.

c. The juice _____ (freeze) quickly.

d. John lit the candle and it ____ (burn) brightly.

e. The dog _____ (grow) very fast.

[GJT]

a. Her hair grew long.

b. The base broke into pieces.

c. The cake burned black.

d. The butter melted to liquid.

(Adapted from Hirakawa, 2000, p. 247-251)

(44) Test sentences used in Study II (Hirakawa, 2000) for alternating unaccusative verbs

[Production task]

a. The snow _____(melt) quickly.

b. The clothes _____(dry) in the sun.

c. The trees _____ (break) quickly.

d. The party started at 8 p.m. and it ____ (continue) all night.

e. Its population _____ (increase) greatly in 10 years.

f. Half of the water _____(spill) from the bucklet.

[GJT]

a. The other one melted.

b. Her hair dried.

c. The vase broke.

d. The war continued for another year.

e. Their pay increased.

f. Beer spilled on the carpet.

(Adapted from Hirakawa, 2000, p.255-259)

I have also analyzed the property of the subject nouns in the intransitive usages (DP-V structure) used in Kondo (2009), as shown in (45). The results of Kondo (2009) show that faced with Type 1 verbs (such as those in a–d), the JLEs tend to reject the structures and accept the passive sentences, whereas with Type 2 to Type 4 verbs, they tend to accept the

structures. All the subject nouns shown in (45) are inanimate nouns. However, the degree of inanimacy is also different. For example, *the ship* with the Type 2 verb (f) can initiate movement by itself (as it is used in the sentence, at least), and people can visualize *the water* with the Type 3 verbs (j), (k) and *the snow* in Type 4 verbs (l) engaged in some natural movement. On the other hand, *the pot* in (a)*, the hay* in (b), *it* (= *a new weekly magazine*) in (c) and *it* (= *the bridge*) in (d) with their Type 1 verbs are things that do not represent any movement. Thus, although Kondo (2009) concludes that the different acceptability rates of these structures are due to influence from the corresponding L1 morphology, it can also be said that the degree of inanimacy in the subject nouns could be a factor causing overpassivization (i.e., rejecting DP-V structure and accepting the passive sentence).

(45) Test sentences of intransitive usages (DP-V structure) used in Kondo (2009):

[Type 1 verbs]

a. The pot broke as he was carrying it from his workshop to the house.
b. The hay burned.
c. I think it (= a new weekly magazine) will sell better in Europe than America.
d. It (= the bridge) collapsed under the weight.

[Type 2 verbs]

e. The door opened by itself.
f. The ship sank gradually.
g. The door closed by itself.
h. Over two days the taste of the soup changed slowly.

[Type 3 verbs]

i. They (= his wet clothes) dried on their own.
j. The water froze quickly.
k. The water boiled quickly.

[Type 4 verbs]

l. The snow on my shoes melted quickly.

(Adapted from Kondo, 2009, p.241-244)

Moreover, I further analyzed the test sentences used in Ju (2000). As shown in (46), the test sentences used in Ju (2000) were ordered according to the individual verb results.

The results indicate that CLEs are most likely to select the passive sentence in (a) *the door (closed/was closed) by itself,* and they are less likely to select the passive sentence in (m) *The tree (grew/was grown) tall quickly*. Note that all sentential subject nouns are inanimate (e.g., *the door, the water, the snow on my shoes, the taste of the soup, the apples, the leaves, the water level* and *the tree*). *The fish* in (d) seem to be recognized as inanimate since they are dead. However, keep in mind that Ju (2000) does not show any statistically significant difference between the results of each test sentence. There may be no statistically significant difference between the results of some test sentences. In addition, some "*it*" subject nouns are not appropriate in some test sentences since CLEs may inaccurately recognize what "*it"* indicates. Therefore, it is hard to analyze whether the degree of inanimacy in subject nouns might affect the overpassivizations in Ju (2000).

(46) Test sentences used in Ju (2000, pp.109-111):

a. The door (closed/ was closed) by itself.
b. It (= the bridge) (broke/was broken) gradually.
c. The water (froze/ was frozen) quickly.
d. The fish (dried/ were dried) by themselves.
e. It (= a ball) (bounced/was bounced) up and down a few times.
f. The snow on my shoes (melted/ was melted) quickly.
g. The taste of the soup (changed/ was changed) slowly.
h. It (= the rock) (rolled/was rolled) quickly down the hill.
i. It (= the piece of wood) (sank/was sunk) slowly.
j. The apples (dropped/were dropped) heavily to the ground.
k. The leaves (turned/were turned) yellow gradually.
l. The water level (decreased/was decreased) gradually.
m. The tree (grew/was grown) tall quickly.

Select passive form

Select active form

In this section, I analyzed the property of sentential subject nouns (i.e., animacy) used in previous literatures. It was found that the sentential subject nouns in the intransitive usages used in Oshita (1997), Hirakawa (2000), Kondo (2009), and Ju (2000) are all inanimate. If the claims of Ju (2000) and Luk and Shirai (2016) are valid, the following cognitive strategy can be assumed: L2 learners tend to think that the thematic role of subject nouns should be the agent; thus, they look for the agents in intransitive sentences by looking at the animacy

of subject nouns. Since inanimate subject nouns cannot cause verb actions by themselves, L2 learners might recognize that no agents are available in the sentences and accept the passive sentences to induce the verb action by someone or something outside of the sentences.

Among inanimate subject nouns in intransitive sentences, from the analysis of subject nouns in Kondo (2009), the degree of inanimacy may be the crucial causative factor of overpassivization; that is, L2 learners do not seem to overpassivize the intransitive sentences with inanimate subject nouns that are likely to behave animatedly, while they do seem to overpassivize those that are completely inanimate. This assumption must be further tested.

3.3.4 Summary

To summarize, previous literature has mainly focused on L2 acquisition of unaccusative verbs, including intransitive usages of ergative verbs rather than transitive usages. This focus is based on the understanding that there are two types of errors that L2 learners accept or produce, irrespective of their L1 backgrounds. First, studies have confirmed the actuality of an overgeneralization phenomenon for passive constructions in sentences with unaccusative verbs (e.g., Balcom, 1997; Hirakawa, 2000; Ju, 2000; Kondo, 2009; Luk & Shirai, 2008; Matsunaga, 2005; Oshita, 1997; Yip, 1995; Zobl, 1989). Second, studies have also confirmed the actuality of L2s' habitual rejection of the active form with an unaccusative verb (e.g., Hirakawa, 2000; Ju, 2000; Kondo, 2009; Matsunaga, 2005; Oshita, 1997).

Previous literature has expanded on these findings, examining the causes of such errors. Early studies, such as those of Zobl (1989), Yip (1995), and Balcom (1997), claim that the extension of passive rules onto intransitive sentences with unaccusative verbs can cause overpassivization because the unaccusative verb structure and the passive structure are similar—that is, the internal argument (i.e., the object) must move to the external position (i.e., the subject). However, the idea of influences from L2 syntactic structures has limitations because L1 influences or individual verb variations have not been adequately considered in L2 acquisition. Yip (1995) considers the influence of learners' L1 background. Oshita (1997) and Hirakawa (2000) have also grown concerned with the role of the L1 influence, although they are more likely to conclude that the errors observed in L2 acquisition of unaccusative verbs were due to universal principles of UG, such as the influence from unaccusativity hierarchy. Montrul (2000) proposes that L1 transfer by

modules (e.g., L1 verb morphology) induces the errors in unaccusative verbs, including ergative verbs. Matsunaga (2005) and Kondo (2009), prompted by the claims of Montrul (2000), have examined the influence of L1 verb morphology in L2 acquisition of unaccusative verbs. Matsunaga (2005) claims that the derivational structure of verb morphology induces overpassivization errors by L1 Japanese learning other languages. However, her claim cannot explain the different results of individual verb variations. Thus far, Kondo (2009) has done the only study that examines individual verb variations in L1 Japanese by referring to individual L1 morphology. She claims that the L1 Japanese verb morphology *-e-* (e.g., *war-e-ru* / *war-u*) seems to cause overpassivization in unaccusative verbs. From the perspective of the syntactic factor, L1 transfer seems to play a key role in overpassivization.

Apart from the syntactic factors mentioned above, previous literature has also covered another approach: the cognitive factor. Ju (2000) claims that the availability of a "conceptualizable agent" in the discourse context under the external causation condition prompts L2 learners to select passive sentences rather than active sentences. In contrast, when there is no "conceptualizable agent" under the internal causation condition, they tend not to select passive sentences. Her claim is supported by Luk and Shirai (2016), whose study tested a different L2 (Japanese). They suggest two possible reasons for overpassivization: the L1 semantic transfer (i.e., the scope of meaning) and the cognitive factor (i.e., the preference of seeking agents).

Thus, from the domains of both syntactic and cognitive factors, previous literature scrutinizes the causes of overpassivization errors in L2 acquisition of unaccusative verbs, including ergative verbs. The following three problems arise from a review of this previous literature. First, the studies mainly focus on L2 acquisition of unaccusative verbs, including both nonalternating unaccusative verbs and alternating unaccusative verbs (i.e., intransitive usages of ergative verbs). In other words, they do not focus on L2 acquisition of ergative verbs themselves, which have both transitive and intransitive usages, and thus fail to recognize the tendency of L2 learners toward overpassivization errors with unaccusative verbs. However, to discover what kind of acquisitional difficulties L2 learners have with ergative verbs, it is crucial to examine systematically both transitive and intransitive usages of ergative verbs.

Second, regarding the influence of L1 transfer, no previous studies of JLEs have claimed that positive L1 transfer facilitates JLEs' acquisition of ergative verbs. Rather, these studies emphasize the influence of negative L1 transfer in terms of verb morphology.

However, as mentioned in section 3.2, if the Contrastive Analysis Hypothesis (Lado, 1957) is valid, JLEs are likely to have little difficulty in understanding English ergative verbs due to the positive L1 transfer from the Japanese ergative equivalents. Since Japanese also has both transitive and intransitive forms sharing the same base forms (e.g., *kowa-su* (transitive) and *kowa-reru* (intransitive) for *break*), if JLEs realize that Japanese and English ergative verbs share the same base form and then simply transfer linguistic characteristics of Japanese ergative verbs to English verbs, they will demonstrate a clear understanding of English ergative verb usages. Therefore, it is necessary to examine whether this logic of L1 transfer is applicable to L2 acquisition of English ergative verbs.

Finally, if L2 learners use the cognitive strategy of seeking the agent inside or outside of the sentences, as Ju (2000) and Luk and Shirai (2016) infer, and if that can cause overpassivization errors with intransitive verb forms, L2 learners will look into the animacy of subject nouns to judge whether they are eligible as agents or not. However, it is noted that no previous study on L2 acquisition of ergative verbs has done an investigation from the perspective of the role of animacy in sentential subject nouns. Hence, in the next section, I review previous literature related to animacy effects in language acquisition.

3.4 Previous Studies on the Use of Animacy on Subject Nouns

In this section, I focus on the animacy effects of sentential subject nouns by reviewing previous studies

3.4.1 Development of the concepts of animacy

Children innately have the ability to distinguish between animate and inanimate entities (Becker, 2014). What kinds of cognitive concepts about animacy do children possess innately that allow them to do so? To address this question, Becker (2014) categorizes the concepts of animacy. They are (a) featural properties of animates, (b) behavioral properties of animates, (c) intentional properties of animates, and (d) agency. Previous research targeting infants and early-age children (Johnson et al., 1991; Meltzoff, 1995; Rakison & Poulin-Dubois, 2001) reveal that human beings are innately equipped with the concepts of animacy. It can be said that they are some of the fundamental components of human cognition.

3.4.2 Use of animacy in L1 acquisition

In this section, I explain how animacy in subject nouns affects language acquisition. First, I review the literature on L1 acquisition related to children's use of animacy. Several studies of L1 acquisition have investigated the use of animacy information for transitive and intransitive verbs (Becker, 2007; Becker & Schaeffer, 2013; De Villiers & De Villiers, 1973; Kuperberg et al., 2006; R. Schwartz, 1980; Scott & Fisher, 2009).

3.4.2.1 De Villiers and De Villiers (1973). Let us look at the influence of animacy of transitive verbs in L1 acquisition. De Villiers and De Villiers (1973) investigated children's spontaneous speech through their experiments. Their findings imply that children prefer to use the "Agent-action-object" word order. Their study targeted 33 children (19–38 months) who were asked to act according to the instructions that consisted of six reversible active sentences (e.g., *make the dog bite the cat*, *make the truck push the car*) and six reversible passive sentences (e.g., *make the dog be bitten by the cat, make the car be pushed by the truck*). They examined the results by categorizing the children into five stages based on their age.

The results showed that children from all stages respond correctly under the condition of the active sentences, whereas they reverse passive sentences. The percentage rate of children reversing passive sentences into active sentence (about 90%) increased along with an increase of the children's age (3:0-3:5). Another interesting finding was that the majority of the responses in early Stage I (the youngest children) showed that the children imagined themselves to be the Agent of sentences. For example, after the children listened to the instruction *make the cow kiss the horse*, they tended to interpret it in a way where *they* kissed the cow or the horse or both. Under the passive condition, one-third of the responses in late Stage I also showed that the children placed themselves as the Agent. One possible explanation for this is that children use the psycholinguistic strategy of applying "logical subject–logical object" in a semantic word order. Note that the word order of the passive sentence is "logical object–verb–logical subject." Thus, children put the person and object that can cause the action (i.e., the Agent) in the subject position. In order to do so, the animate nouns seem to be placed as subject nouns. As De Villiers and De Villiers used both animate and inanimate nouns as both subjects and objects in this study, it is unclear whether there are any differences in results between sentences with animate nouns and those with inanimate nouns.

3.4.2.2 R. Schwartz (1980). In this study examining the relationship between children's beliefs regarding live and inanimate objects, R. Schwartz finds that children use

cognitive concepts related to animacy in sentence interpretation. He conducted a sentence judgement task targeting 40 English-speaking children (aged 4–8 years). Prior to the task, the children were asked to answer a questionnaire regarding their beliefs about the "aliveness" of objects. Based on their answers, they were categorized into four groups: Group 0 (all inanimate objects are alive), Group 1 (inanimate objects that move autonomously or by external force are alive), Group 2 (inanimate objects that move autonomously are alive), and Group 3 (no inanimate object is alive). In the sentence judgement task, the structure of the test sentences is "article + adjective + noun + verb + preposition + article + noun" (i.e., intransitive usages), with both well-formed and anomalous sentences. Well-formed sentences included both animate (e.g., *The big fish swims in the water)* and inanimate subject nouns. In anomalous sentences, three types of inanimate subject nouns, categorized as Type A to C, were presented: Type A had inanimate subjects that are autonomous (e.g., *The hot sun runs across the sky*), Type B had inanimate subjects that are static (e.g., *The pretty lamp sleeps in the corner*), and Type C had inanimate subjects that are nonautonomous (e.g., *The new car looks at the car light*). The children judged the sentences by responding with either "silly" or "OK."

The results of the study showed that for Type A sentences, the children in Group 3 could correctly judge the sentences as "silly" more easily than those in the other groups; for Type B sentences, the children in Groups 1–4 could correctly judge the sentences as "silly" more easily than those in Group 0; and for Type C sentences, the children in Group 2 and Group 3 could correctly judge the sentences as "silly" more easily than those in Group 0. These findings suggest that children who tend to think that inanimate objects are alive incorrectly judge anomalous sentences with inanimate subject nouns as "OK."

However, Becker (2014) questions R. Schwartz's results and raises several issues with the study. For example, she points out that 30% of the children in Group 3 still accepted anomalous sentences. Furthermore, she says that they might comprehend anomalous sentences with "metaphoric interpretation." In terms of the study's methodology, another problem she points out is that it is difficult to determine which part of the sentences (e.g., noun, verb, or adjective) the children paid attention to in order to judge the sentences as "OK" or "silly." The serious problem in R. Schwartz (1980) is that the definition of "anomalous" sentences is ambiguous; the anomalous sentence used in the study (*The hot sun runs across the sky)* is grammatically correct as the unergative verb *run* can only take one argument, the subject (*the hot sun*).

3.4.2.3 Becker (2007). Although R. Schwartz (1980) seems to indicate that children's knowledge of animacy is not adultlike, Becker (Experiment 1, 2007) questions this. She examined whether children aged 3–4 years can distinguish the animate from inanimate entities of sentences as the same way as adults can. The test sentences used in Becker (2007), along with the results in percentages, are shown in Table 2. Table 2 presents four types of test sentences controlling the animate and inanimate nouns of both subjects and predicates. The results indicate no statistically significant difference between age groups and types of sentences. Thus, Becker claims that children who are 3–4 years old *can* correctly distinguish animate nouns from inanimate nouns, and that their knowledge or recognition of animacy is adultlike.

Table 2 *Becker's (2007) Test Sentences and the Results*

Example Sentences	Subject	Predicate	Target Response	Results (for 3-year-olds)	Results (for 4-year-olds)
Bert is friendly	Animate	Animate	OK	83.3%	100%
Bert is purple	Animate	Inanimate	Silly	87.0%	87.0%
The door is friendly	Inanimate	Animate	Silly	87.5%	91.7%
The door is purple	Inanimate	Inanimate	OK	87.5%	83.3%

(Adapted from Becker, 2007, p. 16 with some modifications)

3.4.2.4 Scott and Fisher (2009). In this study, Scott and Fisher (2009) claim that the inference mechanism of children is related to the relationship between thematic role and animacy. They investigated the mechanism with which 24-month-old children (L1 English) interpreted the meaning of novel verbs. By using the novel verb *duck*, which alternates into transitive and intransitive structures, they showed dialogues by two people that have both transitive (e.g., *Matt ducked the pillow*) and intransitive (e.g., *The pillow ducked* or *He ducked*) usages. Subsequently, they showed two events: a causal-test event and a contact-activity-test event, along with the transitive sentence "*The girl is ducking* (*or pimming*) *the boy. Find ducking* (or *pimming*)." Then, Scott and Fisher examined what the children look at after watching events—that is, the tendency of children to look at scenes related to the sentences they have just heard, which is known as the looking-preference comprehension task. The results showed that when children listen to the verb-transitive and verb-intransitive

dialogues and the transitive sentence that follows, they look at the causal-test event significantly longer than the contact-activity-test event. On the other hand, when they listen the verb-transitive and verb-intransitive dialogues and the intransitive sentence that follows, they look at the contact-activity-test event significantly longer than the causal-test event.

Scott and Fisher claim that children correctly interpret the novel verb using the information from the dialogues. They point out that the children seemed to assign the thematic role of theme/patient to *the pillow*. One possibility is that they might have directly used the animacy cues to infer the thematic role of the noun rather than considering the verb's syntactic and semantic subcategorization, which is known as direct-inference. They propose that children possess innate linguistic abilities that can assign thematic roles by assessing their animacy. Thus, animate nouns tend to be seen as the Agent, whereas inanimate nouns tend to be seen as the Theme/Patient (Dowty, 1991). They suggest that the origins of this innate knowledge of the relationship of animacy-agency can be traced to a "Universal Grammar" or conceptual knowledge of the interpretation of language.

3.4.2.5 Becker and Schaeffer (2013). Let us look more precisely at the children's use of animacy. In this study, Becker and Schaeffer (2013) examine whether children can distinguish between unaccusative and unergative verbs by focusing on the animacy information of the subject. It should be noted that the thematic role of the subject is different for unaccusative and unergative verbs: the thematic role of the subject in an unaccusative verb is theme/patient, and thus both animate and inanimate nouns can become the subjects, while the thematic role in an unergative verb is Agent, and thus animate nouns tend to become the subjects. From an analysis of the spontaneous speeches of three children (ages: 1:1 to 5:2) via the CHILDES database (MacWhinney, 2000), Becker and Schaeffer (2013) created categories based on unaccusative verbs (i.e., *open, close, fall, come*, and *go*) or unergative verbs (i.e., *sleep, laugh, dance*, and *cry*), and animate or inanimate (null) subject nouns. The results showed that 93.1% of the children's speeches with unergative verbs used animate subjects, whereas 6.9% used inanimate subjects. As for the results of unaccusative verbs, 51.5% of the children's speeches used animate subjects, whereas 48.5% used inanimate subjects. Becker and Schaeffer (2013) observed this tendency in children both under and over the age of three.

Becker and Schaeffer (2013) claim that children seem to regard inanimate nouns as static (nonvolitional) and nonagentive. Moreover, they say that these determinations of inanimate nouns originate in an internal argument (i.e., the object); that is, when children hear an inanimate subject noun with an intransitive verb, they can recognize it as an

unaccusative verb. Becker and Schaeffer thus conclude that children use animacy cues in subject nouns to anticipate verb subcategorizations. Therefore, the findings suggest that in L1 acquisition, children use innate concepts of animacy to interpret language structures.

The previous research reveals that children innately possess the ability to use the information of animacy in subject nouns. That is, they regard the Agent as the first noun of the sentence. If these findings are valid, it is predicted that the animacy of the subjects should also affect L2 acquisition.

3.4.3 Use of animacy in L2 acquisition

In this section, I examine whether adult L2 learners also use animacy cues in L2 acquisition. Although the number of L2 studies in the field of animacy is limited, it covers a wide range of grammatical items: relative clauses (Jackson & Roberts, 2008; Okugiri, 2014; Omaki & Ariji, 2005, Suda, 2014), *wh*-questions (Shirahata et al., 2017) and intransitive verbs (Kondo, Otaki, Suda, & Shirahata, 2015). However, despite my extensive scrutiny, I found no study that examines the relationship between animacy and the L2 acquisition of ergative verbs. Hence, I review some L2 studies that examine the effect of animacy in other areas of L2 acquisition.

3.4.3.1 Omaki and Ariji (2005). In the context of L2 sentence-processing studies, it has been claimed that L2 learners make use of lexical and semantic information rather than syntactic information; this is known as the Shallow Structure Hypothesis (SSH) (Clahsen & Felser, 2006). Subsequent L2 studies have examined the validity of SSH. For example, Omaki and Ariji (2005) examined the L2 sentence processing of relative clauses, both subject relative (SR) and object relative (OR), by JLEs. As seen in (47), the first and second nouns of the test sentences are manipulated by animacy information.

(47) Test sentences used in Omaki and Ariji (2005):

a. Animate-Inanimate SR

The musician that witnessed the accident angered the policeman a lot.

b. Animate-Inanimate OR

The musician that the accident terrified angered the policeman a lot.

c. Inanimate-Animate SR

The accident that terrified the musician angered the policeman a lot.

d. Inanimate-Animate OR

The accident that the musician witnessed angered the policeman a lot.

(Adapted from Omaki & Ariji, 2005, p. 208)

Omaki and Ariji (2005) administered a sentence complexity rating task. They asked the JLEs to read four types of test sentences as in (47), and to rate their complexity ranging from "easy to understand" to "hard to understand." The results showed that the animate-inanimate OR clause shown in (47b) was judged to be more complex than any other type. Additionally, the JLEs' responses to the SR clauses did not show statistically significant differences between (47a) and (47c). Moreover, no statistically significant difference was observed between responses to the inanimate-animate SR clause and the inanimate-animate OR clause. These results illustrate the same tendency as native speakers. Thus, Omaki and Ariji claim that JLEs might think that the first noun can be the subject of relative clauses; the animate-inanimate OR is re-analyzed using animacy information, as JLEs might think it difficult to consider the inanimate noun "*the accident"* as the Agent. Hence, Omaki and Ariji claim that L2 learners use both syntactic and lexical information (i.e., animacy in subject nouns) the same way as native speakers do, which seems to contradict the SSH.

3.4.3.2 Jackson and Roberts (2010). As in Omaki and Ariji (2005), Jackson and Roberts (2010) also examined L2 acquisition of relative clauses and mirrored its findings in a study of Dutch as an L2 acquisition. Jackson and Roberts (2010) examined the relationship between animacy effects and the L2 processing of relative clauses. They conducted a self-paced reading task by asking German learners of Dutch to read relative clause (RC) sentences subcategorized into four types: subject RC with animate subject, object RC with animate subject, subject RC with inanimate subject, and object RC with inanimate subject. Additionally, they observed the reading time of the critical region (i.e., the auxiliary *have*) and the parts close to it. Jackson and Roberts also asked the German learners of Dutch to judge the acceptability of these RC sentences off-line.

The results of the acceptability judgement test showed that participants found both the subject and object RC with animate subject sentences to be acceptable, whereas they found the object RC with inanimate subject sentences to be less acceptable. The results of the self-paced reading task indicated that object RC with inanimate subject sentences required greater processing than did sentences with subject RC with inanimate subjects. In contrast, the two types of RCs with animate subjects did not show any processing costs. Based on these results, Jackson and Roberts claim that both animacy information and the topicality of the head noun in RC play a crucial role.

3.4.3.3 Okugiri (2014). Okugiri (2014) used language production data to observe that the degree of animacy at the head noun phrase of relative clauses influences the language production of JLEs. She categorizes the head noun of RCs in language production data into animate (human beings and animals, such as *a man*), concrete inanimate (concrete objects, such as *a room*, *a store*, etc.), or abstract inanimate (abstract concepts and anything that is not concrete, such as *kindness*, *information*, etc.). The results showed that animate head nouns are more frequently used than concrete and abstract inanimate head nouns; these results are different than those for native speakers. Moreover, animate nouns, such as *human beings*, are more frequently observed in written data than in spoken data. Okugiri, however, discusses this tendency in terms of the different degrees of necessity of human referents in the discourse, but not in terms of the relationship between animacy and the syntactic properties of RCs.

3.4.3.4 Suda (2014). Suda's (2014) study also pertained to L2 acquisition and relative clauses, conducting an experiment similar to the one by Jackson and Roberts (2010) and also targeting JLEs. Suda claims that JLEs with low proficiency use animacy information when processing relative clauses in English; thus, they do not have difficulty in processing object RC with animate subject sentences (in other words, inanimate antecedents) because the inanimate antecedent moves from the object position. Hence, it can be said that L2 learners can apply the lexical and semantic information of animacy in structure-based sentence processing.

The studies by Omaki and Ariji (2005), Jackson and Roberts (2010), Okugiri (2014), and Suda (2014), suggest that the animacy effects observed in the acquisition or processing of RCs are a cross-linguistic phenomenon that can be observed in at least JLEs and German learners of Dutch. When both animate and inanimate nouns are available in one RC, L2 learners seem to utilize the semantic information of animacy to interpret or produce sentences.

3.4.3.5 Shirahata et al. (2017). This study pertained to L2 acquisition and wh-questions. The interaction between animacy information and grammatical structure has been detected in JLEs' L2 acquisition of *wh*-questions. Shirahata et al. (2017) examined how JLEs' acceptability of *wh*-questions is influenced by the animacy and grammatical structures of these questions. Therefore, as in (48), they conducted a grammatical acceptability test by categorizing test sentences into Type 1 (*what*/inanimate subject), Type 2 (*what*/inanimate object), Type 3 (*who*/animate subject), and Type 4 (*who*/animate object). After Japanese

context sentences were given to the JLEs, they were asked to select the most preferable English *wh*-question sentence from five choices, which included ungrammatical sentences.

(48) Examples of test sentences used in Shirahata et al. (2017)

Type 1: what/inanimate subject

a. What made you so sad?

Type 2: what/inanimate object

b. What did you see in the box?

Type 3: who/animate subject

c. Who eats this big cake?

Type 4: who/animate object

d. Who did you meet in this weekend?

(Adapted from Shirahata et al., 2017, p. 183)

The results showed that the Type 1 and Type 3 constructions tended to be difficult for JLEs to select correctly, whereas the Type 2 and Type 4 constructions tended not to be difficult. In cases where the *wh*-element moves from the subject position, JLEs could correctly select Type 3 (animate) more often than Type 1 (inanimate). In cases where the *wh*-element moves from the object position, they could correctly select Type 2 (inanimate) more often than Type 4 (animate). Based on these findings, Shirahata et al. propose a difficulty order of four types: (easy) Type 2 (*what*/inanimate object) → Type 4 (*who*/animate object) → Type 3 (*who*/animate subject) → Type 1 (*what*/inanimate subject) (difficult). They suggest that the animacy effect is observed under the interaction of the grammatical role (the extraction of the *wh*-element from either the subject or object position)—that is, when the *wh*-element is extracted from the subject position, JLEs prefer animate nouns. On the other hand, when the *wh*-element is extracted from the object position, JLEs prefer inanimate nouns. As the L2 learners' preference for subject-animate and object-inanimate is also seen in the L2 acquisition of RCs (Omaki & Ariji, 2005; Jackson & Roberts, 2010; Suda, 2014), it can be said that this preference is observable in other grammatical areas of L2 acquisition.

3.4.3.6 Kondo, Otaki, Suda, and Shirahata (2015). This study pertained to L2 acquisition and intransitive verbs. Let us look at the existing literature on the L2 acquisition of intransitive verbs, which directly relates to this study. Kondo et al. (2015) examined the

animacy effects in the overgeneralization errors of passive sentences in nonalternating unaccusative verbs through a grammatical judgment test administered to JLEs. Three types of unaccusative verbs were tested by considering the degree of dynamicity and telicity: Type 1, change of location verbs (e.g., *arrive, come*); Type 2, change of state verbs (e.g., *appear, disappear*); and Type 3, existence of state verbs (e.g., *exist, belong*). In this experiment, the test sentences were divided into active form (DP-V structure: e.g., *Half of the forest disappeared*) and passive form (*DP-*be*+en structure: e.g., **Most of the rainforest was disappeared*), including both animate and inanimate subjects.

The results showed that, irrespective of both dynamicity and telicity, JLEs have more difficulty in judging sentences with inanimate subjects than those with animate subjects. Moreover, when it comes to inanimate subject nouns, the JLEs with low English proficiency tended to reject a correct active form (e.g., *Half of the forest disappeared*) and accept an incorrect passive form (e.g., **Most of the rainforest was disappeared)*. In contrast, when the subject of a sentence was an animate noun, they accepted a correct active form. Therefore, Kondo et al. (2015) propose that animacy can be a crucial factor in the overgeneralization of incorrect passive forms with non-alternating unaccusative verbs.

3.4.4 Summary

In Section 3.4, I have reviewed existing studies related to the use of animacy. First, I described the concepts of animacy children innately possess, reviewing studies based on the subcategorization of animacy concepts (Becker, 2014). These animacy concepts are used when children interpret or develop their understanding of grammar in L1 acquisition. Children seem to use the "Agent -action-object" word order strategy when interpreting sentences. As the "Agent" needs to be something alive, they seem to be influenced by the concept of "aliveness"—that is, whether the subject nouns are animate or inanimate and the degree of inanimacy. Becker (2007) also claims that the concepts of animacy that children use to interpret language structures seem to be adultlike, and that they can relate them with thematic roles and subcategorize the verbs. In other words, such cognitive ability seems to be an innate endowment used from birth to develop cognitive ability, including the use of language.

The small number of previous studies of L2 acquisition that have investigated JLEs' use of animacy information in various grammatical areas suggest that the use of animacy in L2 acquisition is observed cross-linguistically. L2 learners' common recognition of animacy is that animate nouns tend to be regarded as subjects, whereas inanimate nouns tend to be

regarded as objects. This pattern of preference is commonly seen in many grammatical areas of L2 acquisition (e.g., RCs, *wh*-questions, and intransitive verbs). These findings from previous L2 studies related to animacy suggest that L2 learners are likely to make use of lexical and semantic information such as animacy information, as well as their grammatical knowledge.

Therefore, it can be said that both native speakers in L1 acquisition and L2 learners use animacy information; this strategy seems to be a fundamental cognitive ability innate in human beings. Why do humans tend to use animacy information? The answer is that they know that the thematic role of the Agent is usually placed in the sentential subject position and the Agent must do something to induce the verb action, which means that they need to be animate objects. Therefore, it can be claimed that the so-called "the Agent First principle" (Jackendoff, 2002) can be the strong principle for human beings to interpret sentences regardless of L1 and L2 acquisition.

If these findings are valid, I predict that the animacy information of subject nouns should also influence JLEs' correct interpretation of grammaticality in English ergative verb sentences. In ergative verb structures, as the thematic role of subject nouns in transitive usages is the Agent and that in intransitive usages is the Theme/Patient, if JLEs encounter intransitive usages such as *the door opened easily,* some JLEs who do not correctly acquire the ergative verb structures may regard them as ungrammatical, as the subject (*door*) is an inanimate noun. On the other hand, they may not have difficulty in interpreting transitive usages because the thematic role of the subject is the Agent and is thus usually animate nouns. However, despite thorough research of previous L2 studies, I found that none of them focus on the role of animacy factors in the L2 acquisition of ergative verbs. Therefore, it is worth conducting the experiment using grammatical judgment tasks with JLEs to measure the animacy effect in interpreting English ergative verb structures. This is carried out in Chapter 5.

Chapter 4
Explicit Grammar Instruction on L2 Acquisition

L2 acquisition research can largely be divided into two categories: uninstructed L2 acquisition and instructed L2 acquisition (Housen & Pierrard, 2005). Uninstructed L2 acquisition may occur through authentic communication (e.g., learning L2 English in the United States), while instructed L2 acquisition usually occurs in a pedagogical environment (e.g., learning L2 English in a classroom in Japan). As English education in Japan comprises instructed L2 acquisition, it is necessary to consider the nature of the language instruction provided to JLEs.

The effectiveness of language instruction can be influenced by three factors: (a) the type of instruction provided, (b) the type of language features targeted for instruction, and (c) the type of learner at whom the instruction is targeted (Housen & Pierrard, 2005). Of these factors, (a) the type of language instruction provided is strongly related to the role of language teachers, which is crucial in facilitating L2 learners' knowledge. Thus, in this chapter, I focus on the theoretical background of explicit grammar instruction.

4.1 Theoretical Background of Explicit Instruction

4.1.1 Definitions of explicit and implicit instruction.

Language instruction can be divided into two types from the perspective of how it affects L2 learners' interlanguage: indirect and direct intervention (Ellis, 2009). According to Ellis (2009), indirect intervention means that L2 learners learn the target language via the communicative experience, which may comprise, for example, a task-based syllabus. Direct intervention, on the other hand, means that L2 learners learn specified and planned items, perhaps as a structural syllabus. Direct intervention can be further subcategorized into two types of instruction depending on the degree of explicitness: implicit instruction (e.g., input flooding) and explicit instruction (e.g., error correction, the explanation of meta-linguistic rules).

As shown in Table 3, Ellis (2009) adopted the characteristics of explicit and implicit instruction from Housen and Pierrard (2005). The degree of explicitness used in teaching is related to how the teacher treats L2 learners' "awareness" of the target grammar rules and how the teacher presents the target grammar rules to the learners. Thus, whether instruction

is explicit or implicit is depends on the availability of the meta-linguistic explanation of grammatical rules[5]. In explicit instruction, the teacher promotes L2 learners' metalinguistic awareness by presenting the target rules and forms, while in implicit instruction, the teacher does not intentionally promote learners' metalinguistic awareness and present the target rules. In this study, I support the position that explicit instruction is effective in promoting JLEs to understand grammatical rules.

Table 3 *Implicit and Explicit Forms of Form-Focused Instruction (FFI) by Housen & Pierrard (2005)*

Implicit FFI	Explicit FFI
• attracts attention to target form	• directs attention to target form
• is delivered spontaneously (e.g., in an otherwise communication oriented activity)	• is predetermined and planned (e.g., as the main focus and goal of a teaching activity)
• is unobtrusive (minimal interruption of communication of meaning)	• is obtrusive (interruption of communication of meaning)
• presents target forms in context	• presents target forms in isolation
• makes no use of metalanguage	• uses metalinguistic terminology (e.g., rule explanation)
• encourages free use of target form	• involves controlled practice of target form

(Adapted from Housen & Pierrard, 2005, p. 10)

4.2.2 The role of explicit instruction.

Shirahata (2017) has proposed a model of the role of explicit instruction. Figure 3 below is a modified version of this. According to Shirahata (2017), the role of explicit instruction is to facilitate L2 learners' "noticing" and "comprehension" of L2 learners with

[5] The classification of grammar instruction into explicit or implicit, and the classification of the state of learners' grammatical knowledge into explicit or implicit, should be treated as separate topics. This study examines the state of learners' explicit grammatical knowledge after receiving explicit grammar instruction.

regard to target grammar items. These stages of "noticing" and "comprehension" comprise two initial stages of L2 acquisition, which are crucial stages leading to "acquisition." Moreover, by repeating "instruction," "noticing," and "comprehension," L2 learners gradually "internalize" the target rules. Next, L2 learners progress to the stage of "automatization." In this study, I have modified Shirahata's (2017) model so that the stage of "noticing" includes "noticing" of both L1 and L2 metalinguistic knowledge. In other words, explicit instruction facilitates not only an awareness of L2 metalinguistic knowledge but also an awareness of L1 metalinguistic knowledge. Based on this model, this study focuses on the explicit instruction, "noticing" and "comprehension" of the second language acquisition and, it is predicted that explicit instruction can be an effective means for JLEs to understand ergative verb structures.

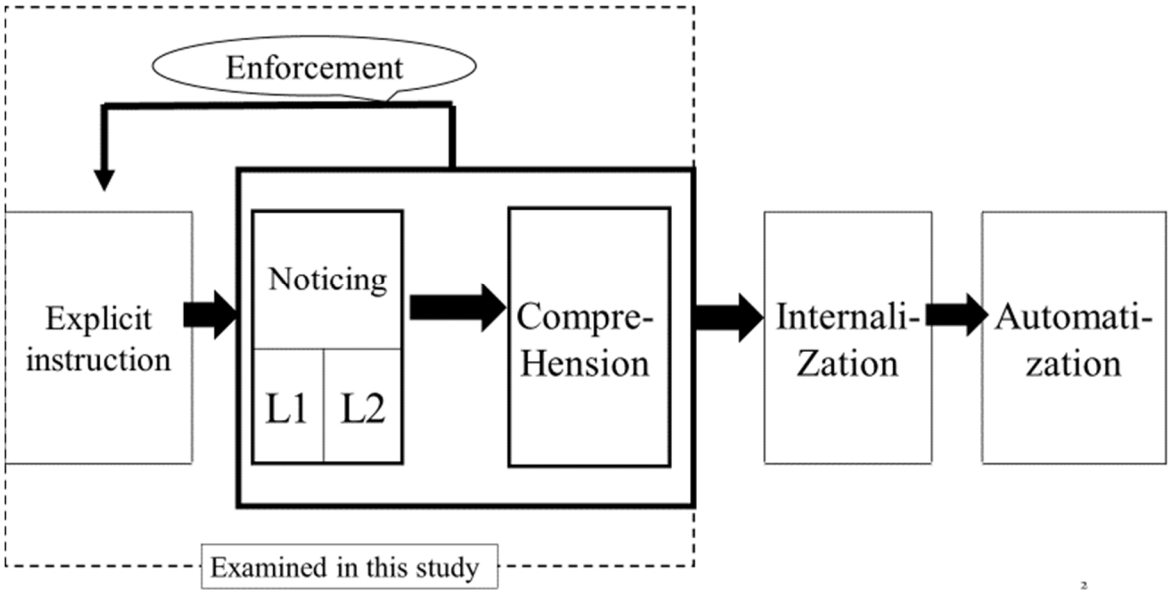


Figure 3 A revised model of the role of explicit instruction by Shirahata (2017) **(**Adapted from Shirahata, 2017, p. 5 with some modifications).

4.2.3. Types of explicit instruction.

As presented in Table 4, explicit instruction can induce awareness of metalinguistic rules from two perspectives: (a) deductive or inductive, and (b) proactive or reactive (Ellis, 2010). Ellis (2008) notes that it is not yet conclusive whether deductive or inductive explicit instruction is more effective. However, in order to facilitate L2 learners' awareness of grammar, it is necessary to combine both inductive and deductive modes of explicit

instruction. Deductive explicit instruction (e.g., comprising proactive production- and comprehension-based practice exercises and active corrective recasts) enables L2 learners to spontaneously notice the target rules without receiving metalinguistic explanations from the teacher. As shown in Figure 3, such consciousness-raising tasks are important for reinforcing the stage of "noticing" of L2 learners. However, as yet, it is uncertain whether all L2 learners can fully notice the target grammar rules from deductive explicit instruction. On the other hand, inductive explicit instruction (e.g., comprising proactive metalinguistic explanations and active metalinguistic feedback) can ensure that learners clearly observe the target grammar rules. Hence, deductive and inductive explicit instruction can be used in tandem to supplement each other. That being the case, in this study, both inductive and deductive explicit instruction are adopted as types of explicit instruction.

Table 4 *Types of Explicit Instruction* (Ellis, 2010, p. 6)

	Inductive	Deductive
Proactive	Metalinguistic explanation	Consciousness-raising tasks; Production-based and comprehension-based practice exercises
Reactive	Explicit correction; Metalinguistic feedback	Repetition; Corrective recasts

4.2 Previous Studies on the Effects of Explicit Instruction

To date, numerous studies have discussed the effectiveness of explicit instruction. Some claim that explicit instruction is effective in promoting L2 learners` grammatical accuracy, irrespective of what the target grammatical items are (Andringa & de Glopper, 2011; Housen et al., 2005; Norris & Ortega, 2000; Spada & Tomita, 2010). Some claim that explicit instruction is not effective but can rather be an obstacle to learning (Truscott, 1996, 2004, 2007). Still others claim that it is not necessary to provide explicit instruction (Hernandez, 2011), and finally, others claim that there are some grammatical items for which explicit instruction is effective and others for which it is not (Shirahata, 2015).

4.2.1 Explicit instruction is effective irrespective of the grammatical items.

Many previous studies have claimed that explicit instruction is effective irrespective

of the grammatical item being targeted (e.g., Andringa, de Glopper, & Hacquebord, 2011; Housen et al., 2005; Norris & Ortega, 2000; Spada & Tomita, 2010). However, debate has arisen as to whether or not the necessity for explicit instruction is based on the complexity of the target grammatical rules (e.g., Dekeyser, 1995; Housen et al., 2005). For example, in their study, Housen et al. (2005) investigated the interaction between grammatical complexity and the efficacy of explicit instruction by assuming that the effect of instruction depends on the complexity of the target grammatical structure. To this end, they divided 69 Dutch learners of French into two experimental groups: one group received instruction on complex rules (i.e., the French passive tense) while the other group received instruction on a simple rule (i.e., French negation). The effect of explicit instruction was then measured using a grammatical judgment test, a written production test, and an oral production test. The results demonstrated that the explicit instruction was beneficial for both groups by facilitating both their grammatical knowledge and their oral accuracy and productivity. Importantly, no clear difference was found between the two groups, in particular in terms of the accuracy of their oral production. Thus, Housen et al. concluded that the difference of complexity in the target grammatical structures did not influence the efficacy of explicit instruction more than they expected. However, their study did not explain why no significant difference was found between the two groups, who had learned different grammatical structures, in terms of the effectiveness of explicit instruction.

Furthermore, meta-analyses of previous research have claimed that explicit instruction is effective in facilitating L2 learners' grammatical accuracy (Norris & Ortega, 2000; Spada & Tomita, 2010). For example, Spada and Tomita (2010) investigated 41 previous studies that had examined the effect of grammatical instruction on L2 learners. They focused on the relationship between grammatical complexity (i.e., complex or simple rules) and the type of grammatical instruction provided (i.e., explicit or implicit). They defined complex grammatical features as those that have two or three transformations (e.g., *question formation*), and simple grammatical features as those that have only one transformation (e.g., *articles, plurals*). Their meta-analysis revealed that explicit instruction is more effective than implicit instruction irrespective of the complexity of the target grammatical rule. However, several problems need to be highlighted. First, in combining previous L2 research, the meta-analysis must have limitations since the individual studies were conducted under different experimental conditions, in terms of, for example, the L1

and L2 structures used, the background of the L2 learners, and so on. Another problem is that their definition of complex and simple grammatical rules is open to debate. For example, although articles may be categorized as simple grammatical features under Spada and Tomita's definition, they can, in fact, prove to be relatively complex from both a syntactic and semantic perspective. Some studies on Japanese learners, whose L1 does not contain articles, have shown that this group fail to acquire articles, despite explicit instruction and even at relatively high proficiency levels. Snape and Yusa (2013) revealed that explicit instruction on English articles is not effective for JLEs due to their complexity from both syntactic and semantic perspectives. Furthermore, Umeda, Snape, Yusa, and Wiltshier (2017) found that instruction in English articles was not effective longitudinally (i.e., 15 months after the instruction). Therefore, it seems problematic to claim that explicit instruction is effective irrespective of the grammatical item. That being the case, it is necessary to consider in detail what factors affect the effectiveness of explicit instruction, including how the complexity of the target grammatical features is defined in both L1 and L2.

4.2.2 Explicit instruction is not effective.

The second position commonly held by researchers is that explicit instruction is not effective and can, rather, be an obstacle to learning (e.g., Truscott, 1996, 2004, 2007). Truscott (1996, 2004, 2007) focused on the effect of corrective feedback on L2 writing, and argued that not only is correction not beneficial but it can even have a detrimental effect on the accuracy of L2 learners' writing. For example, in his small-scale meta-analysis of 24 L2 writing studies, Truscott (2007) examined how L2 learners are affected by error correction in their use of an L2. Comparing correction and non-correction groups, the results indicated that correction groups demonstrated no effectiveness in terms of accuracy, leading Truscott to conclude that correction is "harmful" to learners' writing accuracy. Truscott also noted that testing L2 knowledge through, for example, grammatical judgment tests cannot measure L2 learners' real usage as such tests are "artificial" (p. 270). However, several problems should be highlighted in relation to his research. One is that none of the studies included in his meta-analysis scrutinized how L2 learners' writing accuracy changes through individual grammar structures. If no effect is observed from the error corrections of individual grammar structures, then his claim can be deemed valid.

4.2.3 Explicit instruction is unnecessary.

Recent research has also claimed that, in comparison to the structured input practice during processing instruction (c.f., van Patten, 2002), explicit instruction does not promote grammatical accuracy in the target structures. Hence, researchers believe that explicit instruction is not necessary, and that input practice (i.e., only providing positive evidence) is sufficient for L2 learners to acquire grammatical items (e.g., Hernandez, 2011; Sanz & Morgan-Short, 2004; van Patten & Oikkenan, 1996). This claim was also confirmed by Shintani's (2014) meta-analysis of previous studies on processing instruction. For example, Hernandez (2011) investigated the effect of explicit instruction by dividing 91 adult English learners of Spanish into an explicit instruction and input flooding (EI + IF) group and an input flooding (IF) only group. The target item was Spanish discourse markers such as *entonces* 'then' and *por lo tanto* 'therefore', which were tested through oral proficiency interviews. The results demonstrated that both the EI + IF and IF groups had positive outcomes in terms of the frequency and variations of usage. Moreover, no significant difference was observed between the two groups, implying that explicit instruction had no effect. While Hernandez (2011) made a claim for the effect on L2 acquisition of rich input flooding without instruction, one limitation is that this study only focused on learners' production data and did not test their comprehension. Moreover, the study did not theoretically explain why input flooding was effective for learning discourse markers while explicit instruction was not. One possibility is that discourse markers are not subject to metalinguistic rules because their use is strongly related to context. Thus, there are no explicit rules that can usefully be taught.

On the other hand, in a study on the effect of processing instruction on high school JLEs, Oyama (2017) claimed that explicit instruction was more effective for promoting JLEs' comprehension of the present English hypothetical conditional than input activity alone. Thus, it can be seen that the results of previous studies are contradictory. One of the problems with previous studies on processing instruction seems to be that they have not taken the different characteristics of target items into consideration. For example, the variation in results on processing instruction may stem from the difference in properties between Spanish discourse markers, as used in Hernandez (2011), and English hypothetical conditions, as used in Oyama (2017).

4.2.4 The effect of explicit instruction depends on grammatical structures.

The final position is that there are some grammatical items for which explicit instruction is effective and some for which it is not effective (e.g., Shirahata, 2015). Shirahata (2015) examined the effect of explicit instruction on university JLEs in particular. He studied whether explicit instruction was effective for sentential subjects, grammatical morphemes, distinguishing between transitive and intransitive verbs, noun plurality, comparative expressions, prepositions, conjunctions, and lexical words. The JLEs followed teachers' explicit instruction and the effect was measured using grammatical judgment tests and writing production tests. Shirahata (2015) then summarized all the results accumulated from these experimental studies and concluded that explicit instruction including corrective feedback is effective for some grammar items (e.g., conjunctions, the selection of sentential subjects), but not for others (e.g., plural markers of uncountable nouns, prepositions).

Unlike the previous studies presented in 4.2.1, 4.2.2, and 4.2.3 above, Shirahata (2015) explained why a different effect was observed among the target items. That is, there were some features for which explicit instruction with corrective feedback is effective, as in (49) below, and others for which it is not, as in (50). Whether or not explicit instruction works depends on (a) whether or not the target grammatical structures have complexity in their internal rules, (b) what kind of information the structures convey, i.e., semantic lexical meanings or grammatical functions, (c) whether or not they have L1 counterparts, and (d) whether or not teachers have previously provided instruction in these features.

(49) Explicit instruction with corrective feedback is effective for grammatical items:

a. whose internal rules are simple.

b. which mainly convey simple lexical meanings.

c. which have similar concepts and/or grammatical structures in the learner's L1.

d. which have not been taught sufficiently up to high school.

(50) Explicit instruction with corrective feedback is not effective for those grammatical items:

a. whose internal rules are complicated.

b. which mainly convey grammatical functions.

c. which do not have similar concepts and/or grammatical structures in the

learner's L1.

d. which have been taught sufficiently up to high school.

(Adapted from Shirahata, 2015, p. 182)

Based on Shirahata (2015), this study follows the idea that explicit instruction is effective for some items but not for others. Shirahata (2015) also noted that his proposals in (49) and (50) require additional empirical evidence to strengthen his opinions. Thus, they need to be examined through further research.

4.3 Previous Studies on the Effects of Explicit Instruction on Verb Transitivity and Intransitivity

As seen in 4.2, many previous studies have examined the effect of explicit instruction by targeting a variety of grammar items. However, when it comes to verb transitivity and intransitivity, such as ergative verbs, few investigations have been conducted. Here, I introduce Hirakawa (2013), and Kondo and Shirahata (2015a, 2015b). They conducted experiments to ascertain the effect of explicit instruction on verb unaccusativity.

4.3.1 Hirakawa (2013).

Hirakawa (2013) examined the effect of explicit instruction on verb unaccusativity by dividing JLEs into two groups: an instruction group and a control group. The instruction group received instruction sessions for 30 minutes per week for four weeks in which they learned that passive sentences with unaccusative verbs (e.g., *A big accident was happened last night*) (p. 127) are ungrammatical. Six types of verb were selected based on their telicity and the Auxiliary Selection Hierarchy proposed by Sorace (2000), and participants were tested on both grammatical and ungrammatical sentences through an acceptability judgment task both before and after the instruction. The target constructions, or ergative verbs, comprised six types: type 1 (+telic unaccusative, e.g., *arrive*), type 2 (-telic unaccusative, e.g., *survive*), type 3 (-control unergative, e.g., *cough*), type 4 (+control unergative, e.g., *run*), type 5 (alternating verb, e.g., *melt*), and type 6 (transitive, e.g., *read*).

The results demonstrated that, in the post-test, the instruction group tended to correctly reject Type 1 and Type 3 ungrammatical sentences (e.g., *Trains are arrived on time*), but their recognition of Type 2 ungrammatical sentences did not improve after the instruction.

Regarding Type 5, active sentences (DP-V structure) were correctly accepted in both tests. Inappropriate passive sentences were accepted in the pre-test but tended to be rejected after instruction. Hirakawa (2013) noted that such inappropriate passive sentences with alternating verbs (i.e., ergative verbs) cannot be fully rejected. By comparing the two groups, the control group demonstrated a statistically significant difference between the two tests, whereas the instruction group did not.

Hirakawa (2013) thus concluded that the effect of instruction had been observed since the instruction group found negative evidence (i.e., ungrammatical passive sentences). However, the effect was not observed in all verb types and thus, it can be said that the effect was only partially observed. Moreover, since the control group improved their accuracy on the post-test as in Type 5, Hirakawa also considered the possibility that participants' English proficiency had developed over the study period or that there were repeated effects of the same tests.

Several points need to be highlighted here. First, as also noted by Hirakawa (2013) as well, it is necessary to research the long-term effect of her study treatment. Otherwise, it is difficult to claim the efficacy of explicit instruction. Second, in her paper, she did not fully describe the procedures of explicit instruction, when the key to providing successful instruction may lie in how and what the negative evidences were that were provided through the four-week instruction. Finally, there must be some other reason why the control group improved their accuracy in judging sentences with alternating verbs (inappropriate passive sentences). One possibility is that the animacy of the subject nouns was changed between the two tests. If more animate nouns were used in the post-test, the participants may have correctly rejected inappropriate passive sentences. However, as Hirakawa has not made the test sentences available, this question remains unresolved.

4.3.2 Kondo & Shirahata (2015a, 2015b).

Kondo and Shirahata (2015a, 2015b) conducted experiments targeting unaccusative verbs to ascertain the effect of explicit instruction. Their focus was on whether JLEs can improve their degree of comprehension of unaccusative verbs after explicit instruction (i.e., meta-linguistic explanation). The detailed contexts and procedures of explicit instruction are described in their 2015a study. Unlike Hirakawa (2013), Kondo and Shirahata (2015a, 2015b) used a delayed post-test to examine whether university JLEs' grammatical

knowledge would be retained for several weeks after the final instruction session. The grammatical judgment task was conducted three times: a pre-test, an immediate post-test, and a delayed post-test. The tests were administered twice to the control group who received no instruction: a pre-test and a delayed post-test. Instruction sessions were provided three times (25 minutes per session) over three consecutive weeks.

Through the grammatical judgment task, they tested grammatical (DP-V structure) and ungrammatical intransitive sentences (*DP-V-DP structure) using unaccusative verbs (i.e., *appear, arrive, disappear*, and *fall*). Two points were emphasized in the series of explicit instructions: (a) using Japanese case-particles such as *-ga* or *-o* to distinguish between transitive and intransitive verb sentences in their L1 Japanese, and (b) using inanimate sentential subjects for intransitive verbs (e.g., *the accident* in *the accident happens*).

The results demonstrated that the mean scores of both intransitive structures improved for the experimental group in the immediate post-test with a statistically significant difference compared to the pre-test. Moreover, the results were maintained (transitive) or further improved (intransitive) in the post-test. For the control group, on the other hand, no improvement was observed in the immediate post-test. Based on these results, Kondo and Shirahata (2015a, 2015b) surmised that university JLEs might not know the metalinguistic rules of verb subcategorizations. Explicit instruction was an effective means for them to learn those metalinguistic rules that they were unsure of or had forgotten. Another finding was that the two teaching points they had emphasized (i.e., (a) using case Japanese counterparts, (b) explaining inanimate sentential subjects) can be useful in allowing JLEs to clearly understand the rules of English transitive and intransitive verbs.

However, three points of limitation are observed. First, as Kondo and Shirahata (2015a) discussed, their explanation of inanimate subjects was not sufficient for the JLEs to understand. The researchers only mentioned that inanimate nouns can be placed as sentential subjects even in the case of intransitive verb structures. However, they did not refer to the difference in thematic roles between transitive and intransitive verb structures. A second limitation is that the timing of the delayed post-test, which was five weeks after the final instruction, seems too soon after the immediate post-test. Third, a limited number of types of intransitive verb were investigated, with a mere five unaccusative verbs included. Therefore, future research is undoubtedly necessary to consider the following points: (a) the

contents of explicit instruction, in particular, the inanimate sentential subjects, (b) the timing of the delayed post-test, and (c) the target of other verb types such as transitive or ergative verbs. The solutions to these points ((a) to (c)) are applied in Chapter 6: Study 2.

4.4 Summary

In this chapter, I have discussed the theoretical framework underpinning the effectiveness of explicit grammar instruction, and how it has been discussed in previous L2 acquisition research, including the acquisition of intransitive verb structures (Hirakawa, 2013; Kondo & Shirahata, 2015a, 2015b). Since JLEs largely learn English in the L2 classroom, a crucial theme for both L2 acquisition and English language education in Japan is how language instruction affects L2 acquisition. In order to explain the definition and characteristics of explicit instruction by distinguishing it from implicit instruction, I adopt the definition along with the characteristics defined by Housen and Pierrard (2005) in Table 3 above. According to the model proposed by Shirahata (2017) (see Figure 3 above), explicit instruction plays a role in the process of L2 acquisition by leading to the stages of "noticing" and "comprehension." To the stage of "noticing," I have newly added the point that L2 learners notice not only the linguistic characteristics of their L2 but also those of their L1 and that noticing the linguistic characteristics of one's L1 is a crucial step in promoting the necessary degree of comprehension of the target L2 items based on the full transfer model from L1 in L2 acquisition.

Many previous L2 acquisition studies have tested and discussed the effect of instruction. In sub-section 4.2, I categorized these studies into four positions, and noted that in this study I adopt position proposed by Shirahata (2015): there are some grammatical items for which explicit instruction is effective and others for which it is not. If the target L2 items comply with the conditions for which explicit instruction is effective, as in (49), the degree of L2 learners' comprehension will be facilitated for those items via explicit instruction. In this study, I will test the effect of explicit instruction on the target items of this study, i.e., English ergative verb structures, because they meet these conditions.

Despite the fact that several previous studies have examined the effect of explicit instruction on English intransitive verb structures (e.g., Hirakawa, 2013; Kondo & Shirahata, 2015a, 2015b), they have focused solely on unaccusative verbs and none have focused on both-used verbs (i.e., ergative verbs). Although Hirakawa (2013) included ergative verbs as

one category of the target items, she did not observe the effect of explicit instruction, and the control group in her study were found to improve their degree of comprehension in the immediate post-test. Moreover, several points in relation to her study need to be clarified: no delayed post-test was administered; it was not clear how the explicit instruction was delivered; and the transitive variant of ergative verbs was not tested. Kondo and Shirahata (2015a, 2015b) examined the effect of explicit instruction on non-alternating unaccusative verbs (i.e., excluding ergative verbs), and tested the effect through immediate and delayed post-tests (i.e., five weeks after the final instruction). Their results demonstrated that the JLEs improved their degree of comprehension of unaccusative verbs. One possibility is that they referred to the animacy of sentential subjects and their Japanese counterparts during the instruction sessions, which may have led to the stage of "noticing" for JLEs. However, the effect of explicit instruction in English ergative verbs has not been investigated by emphasizing these instruction points.

Based on the discussions above, it is worth exploring the effect of explicit grammar instruction on English ergative verb structures. To conduct this experiment, in the next chapter, I will first examine how JLEs acquire these structures, while in chapter 6, I will test the effect of explicit instruction. It is hoped that by doing so, this study will add to the body of research on explicit grammar instruction and clarify that explicit instruction for English ergative structures is effective for JLEs.

Chapter 5
Study 1: L2 Acquisition of Ergative Verb Structures by JLEs

5.1 Introduction

Based on the theoretical backgrounds for the L2 acquisition of English ergative verb structures discussed in Chapter 3, this chapter discusses the L2 acquisition of ergative verb structures by JLEs. This is called Study 1. The purposes of Study 1 are presented in (51).

(51) Purposes of Study 1:

a. To examine the acquisition of ergative verb usages by university JLEs

b. To investigate what factors caused university JLEs difficulty in acquiring transitivity and intransitivity of English verbs

In order to achieve these purposes, research predictions are established and JLEs' knowledge of ergative verb usages is tested through the GJT. This chapter is organized as follows: after the introduction, research predictions are presented in 5.2. The JLE participants of this study are introduced in 5.3, and the materials and procedures of the experiment are discussed in 5.4. In 5.5, the results and discussions of the experiment are presented. Based on the discussions, the pedagogical implications are explained in 5.6. Finally, 5.7 provides the summary of Study 1.

5.2 Research Predictions

Considering the theoretical background along with the discussions made in Chapter 3, and assuming that the L1 transfer for ergative verb structures and the use of animacy information on subject nouns are available for L2 acquisition, two predictions are established: Prediction 1 and Prediction 2, as shown in (52).

(52) Research Predictions:

a. Prediction 1: Influence from L1

If the properties of Japanese (L1) ergative verbs successfully map their English (L2) equivalents, JLEs will have little difficulty in understanding English ergative verb usages. Thus, both transitive and intransitive usages of these verbs will be equally

attainable for JLEs.

b. Prediction 2: Influence from animacy on subject nouns

If animacy of the subject influences JLEs' acceptability of the grammaticality in English ergative verb sentences, they will judge that a sentence with an animate subject is grammatical, which results in a correct judgement. On the other hand, they will judge that a sentence with an inanimate subject is ungrammatical, which results in a wrong judgement. Thus, sentences with [+animate] subject nouns are easier for JLEs to correctly judge grammaticality than those with [-animate] subject nouns.

5.3 Participants

The participants in Study 1 were 65 university JLEs (48 freshmen & 17 sophomores) in Japan who had studied English at school for a minimum of six years. Their majors comprise a wide range of academic fields: education, agriculture, sciences, and social science. Through Oxford Quick Placement Test (OQPT), their English proficiency levels were tested and found to be between elementary and lower intermediate (*M*: 26.22 out of 40; *SD*: 3.43). The results of the OQPT are presented in Table 5.

In order to compare the results between JLEs with high English proficiency and those with low English proficiency, the participants were divided into two groups: Elementary and Intermediate. The Elementary group had the 25 JLEs whose OQPT scores ranged from 15 to 25 (*M*: 22.84; *SD*: 2.43). The Intermediate group had the 22 JLEs whose OQPT scores ranged from 28 to 33 (*M:* 29.77; *SD*: 1.41). See also Table 6. The researchers excluded 18 JLEs whose OQPT scores were 26 and 27. Since the average OQPT scores of the Elementary and Intermediate groups are statistically different (t (45) =-11.75, p <.001, d=-3.44), they can be regarded as different groups regarding English proficiency and, thus, the results of their GJT can be compared each other.

Table 5 *Results of OQPT*

	Mean	*SD*	Maximum	Minimum
Score	26.22	3.43	33	15

Table 6 *Background of the Two Participant Groups*

Group	OQPT score	*N*	*M*	*SD*	Max	Min
Elementary	15 - 25	25	22.84	2.43	25	15
Intermediate	28 - 33	22	29.77	1.41	33	28

5.4 Materials and Procedures

5.4.1 Ergative verbs tested.

For this study, 15 ergative verbs were selected as target verbs. They all commonly feature in junior high school English textbooks. *The English Vocabulary Lists Learned at Junior High School* (Kairyudo, 2012) was used as a reference for the selection of the ergative verbs, which are presented in (53). Moreover, distractor sentences were created. There were nine transitive verbs, eight unaccusative verbs, and nine unergative verbs in total, which are shown in (53).

(53) Verbs tested in this experiment:

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

b. Transitive verbs (distractors): *destroy, bring, introduce, hate, respect, use, know, select, damage.*

c. Unaccusative verbs (distractors): *appear, arrive, come, die, fall, occur, stand, bloom.*

d. Unergative verbs (distractors): *cough, cooperate, despair, dive, depend, laugh, listen, wrestle, tremble.*

e. Ergative Verbs (distractors): *break, match, spread.*

5.4.2 Preliminary Test: A vocabulary translation test

Prior to carrying out the main experiment, a vocabulary translation test was conducted. The purpose of this test was to eliminate participants who did not know the meanings of the ergative verbs tested. The researcher asked participants to translate the meanings of the 15 English ergative verbs into Japanese. The results showed that all 65 JLEs answered the vocabulary translation task correctly. Thus, they all qualified as participants. See also Appendicies A.

5.4.3 Main test: A grammaticality judgement Task.

A set of grammaticality judgement tasks (GJT) was completed[6]. The researcher adapted the test design from Kondo and Shirahata (2014) with some modifications. In

[6] In order to measure participants' explicit grammatical knowledge of ergative verb structures, a set of GJTs are employed. Thus, it should be noted that implicit grammatical knowledge is not measured in this study. In order to measure implicit grammatical knowledge, other measures that do not test whether learners are aware of grammaticality should be employed; for example, a method of real-time comprehension by measuring reading-time and eye-movement (c.f., Suzuki & Dekeyser, 2015, 2017).

addition to the test design used in Kondo and Shirahata (2014), a section with brackets was added so that the participants could revise the test sentence when they answered that the sentence was ungrammatical. Moreover, the response alternative "not sure" was excluded since the researcher considered it difficult to define the grammatical knowledge of the participants who choose it. There were four different types of test questions, as shown in Table 7 along with a few example sentences. They were: Type A ([+transitive] and [+animate subject]); Type B ([+transitive] and [-animate subject]); Type C ([+intransitive] and [+animate subject]); and Type D ([+intransitive] and [-animate subject]). See also Appendicies B.

Table 7 *Four Types of Test Sentences*

Type	Sentence Type	Examples
A	[+transitive] & [+animate subject]	*Ann closed the windows in the early evening.*
B	[+transitive] & [-animate subject]	*The company opened the new office.*
C	[+intransitive] & [+animate subject]	*Mary and Tom separated 10 years ago.*
D	[+intransitive] & [-animate subject]	*The big rock rolled slowly.*

The four different types of questions were tested for 15 ergative verbs. Thus, there were 60 test questions (4 types of each of the 15 ergative verbs), which were all grammatically correct sentences. Additionally, 100 distractors (33 grammatical sentences and 67 ungrammatical sentences) were included in the GJT. Since there were 160 sentences in total, the GJT was conducted twice: the researcher gave 80 test sentences for the first week and then the remainder of the task for the second week.

Two example sentences of the GJT are presented in (54) for intransitive usage and in (55) for transitive usage. The test consisted of a context sentence written in Japanese (e.g.,

(54a) & (54b)) and a test sentence written in English (e.g., (54b) & (55b)). Participants judged whether the underlined part of each test sentence was grammatically correct or incorrect. If they chose "Incorrect," they were asked to revise the original test sentence according to what they believed to be correct.

Although no time limitation was imposed, participants completed each test session of the GJT within 40 minutes. Moreover, in order to keep the participants from using their metalinguistic knowledge in ergative usages, the researcher asked that they not go back to the test sentences they had already answered.

(54) Example of intransitive test sentence:

a. Context sentence: I bought a can opener because I wanted to open the can.
As a result,
(written in Japanese: Kanzume-o aketai node kankiri-o katte kimashita. Sono kekka,)

b. Test sentence: The can <u>opened</u> easily.

(55) Example of transitive test sentence:

a. Context sentence: Mary felt hot because she had closed the window for a long time. So,
(written in Japanese: Mary-wa choojikan heya-o shimekitte ite atsukatta desu. Nanode,)

b. Test sentence: Mary <u>opened the window</u>.

5.4.4 Scoring and Data Analysis.

The participants' answers were tabulated by giving one point for each correct answer and zero for incorrect answers. Since all 60 test sentences were grammatically correct, answering correctly involves choosing "Correct" and answering incorrectly entails choosing "Incorrect." Thus, the maximum score of the test sentences with 15 ergative verbs was 60. For the statistical analysis, an alpha level of .05 was used in this study. IBM SPSS version 21 for Windows (2012) and the online statistical software Langtest (Mizumoto, 2015) were used for all statistical analysis.

Data analysis for overall results and four types of test sentences. In order to examine the two predictions, paired *t* tests were administrated for the overall mean score. Then, a

two-way repeated measure of variance analysis (ANOVA) was conducted for the mean score in order to check if the four types of test sentences were statistically different: syntax ([+Transitive] and [+Intransitive]) × animacy ([+Animate] and [-Animate]) as within-participant variables. In addition, a two-way-mixed ANOVA was conducted for the mean scores between the Elementary and Intermediate groups to check if the four types of test sentences were statistically different between these proficiency levels: groups (Elementary and Intermediate) × four types of test sentences (Type A to D).

Data analysis for individual verb results. In order to examine what causes difficulty among individual verbs, a two-way mixed ANOVA was conducted for the mean score of individual verbs by type: groups (Elementary and Intermediate) × 15 individual verbs by four types of test sentences (Type A, B, C, and D), respectively.

Data analysis for individual learners. Analysis of the results of individual learners was conducted for those who were regarded as being able to correctly determine the types of sentences. That is, those who answered more than 80% of each type of sentences correctly (12 out of 15 answers in total) were considered capable of correctly interpreting the structure. These results were compared between Types A, B, C, and D. In particular, the results of Type D sentences were further compared between the Elementary and Intermediate groups via the chi-square test. Furthermore, a cluster analysis was conducted. I employed the Ward method with the squared Euclidian distance technique for a cluster analysis.

5.4.5 Reliability of a Grammaticality Judgement Task

The reliability of the test sentences was analyzed using Cronbach's alpha (α). The reliability estimate was $\alpha = 0.7$. According to Takeuchi and Mizumoto (2014), in general, reliability estimates should be above 0.8 for language testing and above 0.7 for psychological scale. If the estimate is below 0.5, the measurement items are not suitable for testing. Thus, the reliability estimate of 0.69 in this study was not an ideal score compared with the estimate of 0.8, although it should still be acceptable. Hence, the test items used in Study 1 were considered reliable as testing measurements.

5.5 Results and Discussions

5.5.1 Overall Results.

First, the results from the perspective of Prediction 1 will be considered, as shown in (56).

(56) Prediction 1: Influence of L1:

If the properties of Japanese (L1) ergative verbs successfully map their English (L2) equivalents, JLEs will have little difficulty in understanding English ergative verb usages. Thus, both transitive and intransitive usages of these verbs will be equally attainable for JLEs.

Table 8 shows the test results of transitive and intransitive usages and Figure 4 graphically presents these results. They show that the score of transitive usages is 26.71 (*SD* = 2.95), while that of intransitive usages is 21.09 (*SD* = 4.00), revealing over 5 points of difference between them. The result of a paired *t* test has also revealed a statistically significant difference between these two usages (t (64) = 9.12, $p < .001$, d = 1.60), which means that JLEs had more difficulty interpreting intransitive usages than transitive usages. Thus, Prediction 1 is rejected. This result indicates that JLEs do not necessarily use the properties of Japanese ergative equivalents. Hence, it is necessary to look for a different reason why JLEs have difficulty correctly interpreting the grammaticality of ergative verb structures.

Table 8 *Mean and SD of Transitive and Intransitive Usages*

	M	*SD*
Transitive Usages	26.71	2.95
Intransitive Usages	21.09	4.00

Note: The maximum score per transitive/intransitive usage is 30.

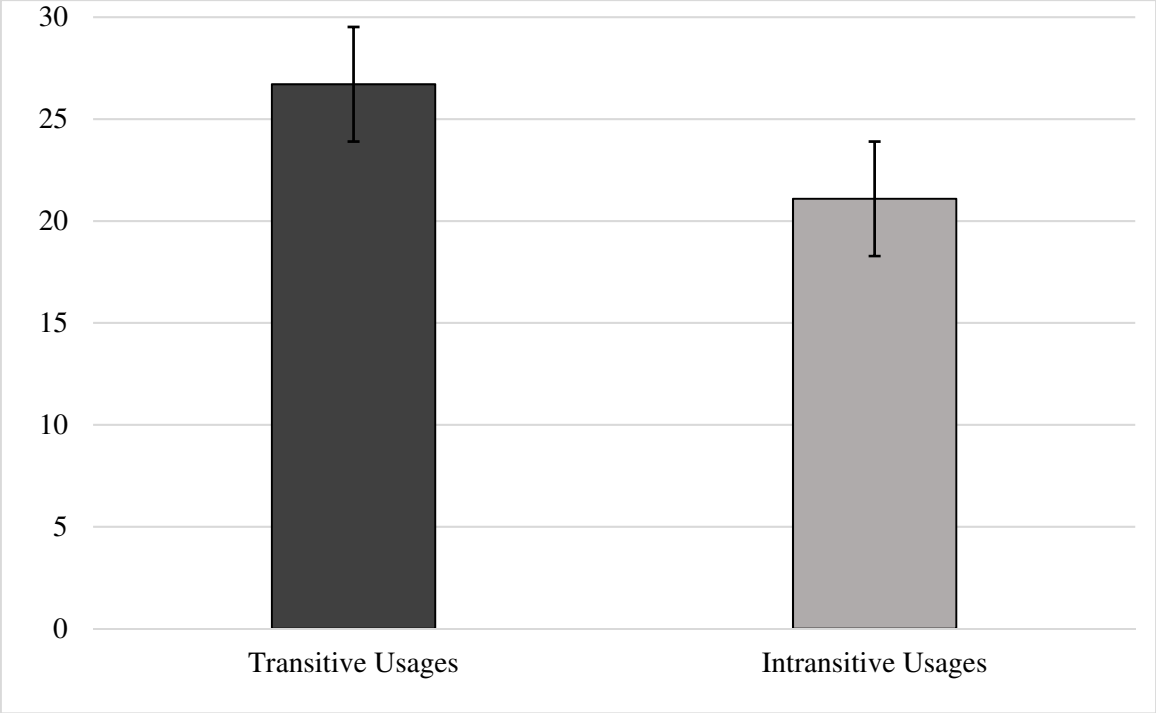


Figure 4 Mean score of transitive and intransitive usages

Next, let us consider Prediction 2, as shown in (57).

(57) Prediction 2: Influence from animacy on subject nouns

If animacy of the subject influences JLEs' acceptability of the grammaticality in English ergative verb sentences, they will judge that a sentence with an animate subject is grammatical, which results in a correct judgement. On the other hand, they will judge that a sentence with an inanimate subject is ungrammatical, which results in a wrong judgement. Thus, sentences with [+animate] subject nouns are easier for JLEs to correctly judge grammaticality than those with [-animate] subject nouns.

Table 9 shows the means and *SD* of the correct answers from the [±animate] perspective of the subject nouns, and Figure 5 graphically shows these results. The mean score of sentences with [+animate] subject nouns is 25.37 (*SD* = 2.61), whereas the mean score of sentences with [-animate] subject nouns is 22.43 (*SD* = 3.80). The results of the paired *t* test have revealed a statistically significant difference between sentences with [+animate] subject nouns and those with [-animate] subject nouns (t (64) = 5.64, $p < .001$, d = 0.89). Thus, English ergative sentences with a [-animate] subject noun are more difficult to interpret than those with a [+animate] subject noun.

These results confirm an influence from the animacy of the subject nouns when JLEs interpret grammaticality of ergative verb usages in English. Therefore, it can be said that JLEs had more difficulty interpreting sentences with [-animate] subject nouns than those with [+animate] subject nouns. It can also be said that the Agent First principle affects their interpretation and, thus, Prediction 2 is supported. Based on the results regarding Predictions 1 and 2, it has been found that the application of the Agent First principle, rather than the L1 syntactic transfer, is effective for the L2 acquisition of English ergative verbs by JLEs.

Table 9 *Means and SD of [±Animate] of the Subject Nouns*

	M	*SD*
[+animate] subject nouns	25.37	2.61
[-animate] subject nouns	22.43	3.80

Note: The maximum score per [+animate] / [-animate] subject noun is 30.

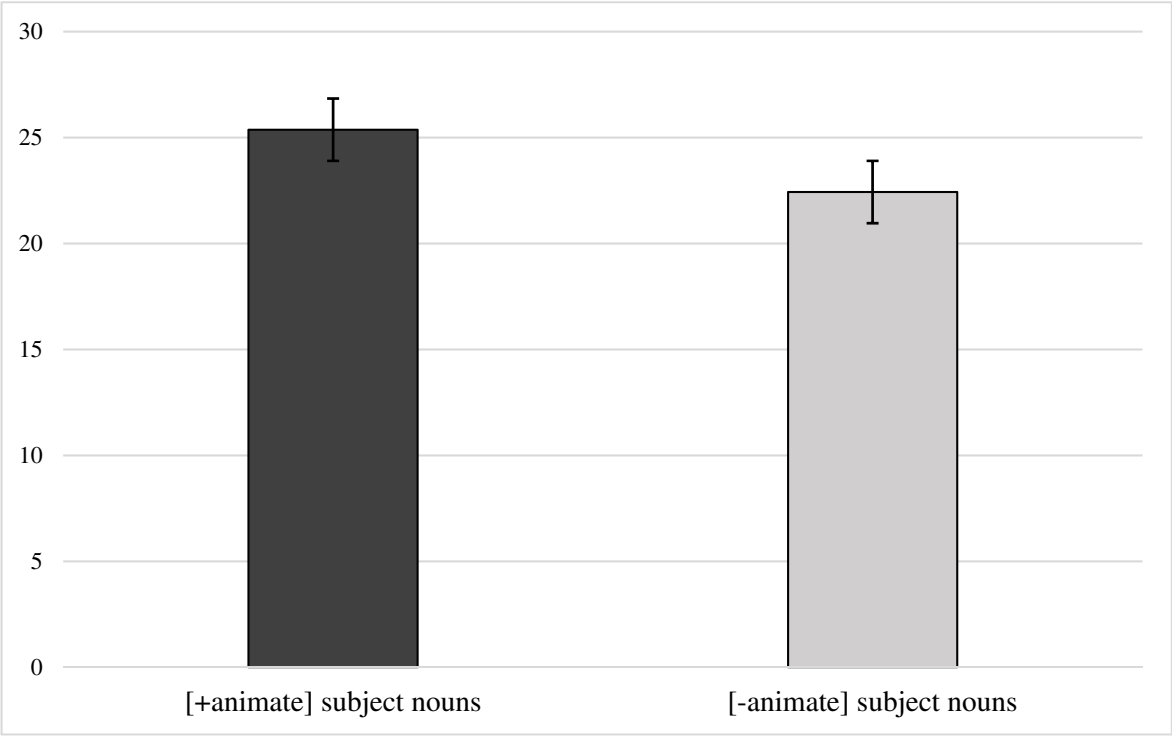


Figure 5 Mean scores of [+animate] and [-animate] subject nouns

5.5.2 Results of Four Types of Test Sentences

Analyzing the results from intransitive usage and transitive usage (i.e., Type A to Type D sentences), it is possible to discover why the intransitive usages were more difficult to interpret correctly than transitive usages. The mean and *SD* of the four types are shown in Table 10, and the mean scores of these types are visually presented in Figure 6. The mean score of Type D is the lowest among the four types of test sentences. The results of the two-way repeated measures of ANOVA (Syntax: [+Transitive] and [+Intransitive] × Animacy: [+Animate] and [-Animate]) are presented in Table 11. The results confirm that there were statistically significant main effects of Syntax ([+Transitive] and [+Intransitive]) (F (1, 64) = 83.16, p < .001, partial η^2 = .57), and Animacy ([+Animate] and [-Animate]) (F (1, 64) = 31.79, p < .001, partial η^2 = .33). In addition, there was a significant interaction between transitive and intransitive usages and [± animate] subject nouns (F (1, 64) = 58.06, p < .001, partial η^2 = .48). Moreover, a simple main effect of [+animate] and [-animate] of the subject nouns was statistically significant in intransitive usages (F (1, 64) = 59.27, p < .001, partial η^2 = .48) but not in transitive usages (F (1, 64) = 0.01, p = .90, partial η^2 = .00).

These results indicate that in intransitive usages of ergative verbs, JLEs have more difficulty interpreting sentences with [-animate] subjects (i.e., Type D) than with [+animate] subjects (i.e., Type C). In contrast, in transitive usages of ergative verbs, JLEs have no differential difficulty interpreting sentences between [+animate] subjects (i.e., Type A) and [-animate] subjects (i.e., Type B).

Thus, it can be said that the JLEs have no differential difficulty interpreting sentences between [+animate] and [-animate] subject nouns in transitive usages. However, JLEs have more difficulty interpreting sentences with [-animate] subjects than with [+animate] subjects in intransitive usages. Thus, it can be said that intransitive sentences with [-animate] subjects (i.e., Type D) are the most difficult types of sentences with ergative verb usages for both proficiency groups.

Regarding the results of transitive usages of ergative verbs, no significant difference was found between the mean scores of sentences with [+animate] subject nouns (Type A) and those with [-animate] subject nouns (Type B). Thus, it can be said that the Potentiality of Agency Scale proposed by Dixon (1979), shown in (20) of Chapter 3, does not match the results of this study. Therefore, it can be considered that, differing from [-animate] nouns, such as *desk, chair,* or *rock*, [-animate] subject nouns used for Type B (e.g., *our company,*

the farm, the accident, and *the U.S. bomber*) might be regarded as [+animate] subject nouns by the JLEs. These [-animate] subject nouns used in Type B enable people to imagine the existence of human beings working and acting behind ergative verbs.

On the other hand, in intransitive usages, a differential difficulty of grammatical judgement is observed between the sentences with [+animate] (Type C) and [-animate] subject nouns (Type D). This means that JLEs have more difficulty judging the grammaticality of sentences with [-animate] subject nouns than those with [+animate] subject nouns in intransitive structures. Thus, it can be said that the animacy of subject nouns can influence JLEs' correct interpretation of intransitive structures, although, in intransitive usages, the thematic role of the subject is the same in Types C and D sentences, that is, the Theme or Patient; as long as a subject noun is animate (i.e., human beings), the JLEs were able to correctly judge the grammaticality of the sentences.

Table 10 *Mean and SD of Four Types of Sentences with Ergative Verbs*

	Transitive			Intransitive		
	Type	*M*	*SD*	*Type*	*M*	*SD*
[+animate]	A	13.37	1.58	C	12.00	1.79
[-animate]	B	13.34	1.99	D	9.09	3.07

Note: The maximum score per each Type is 15.

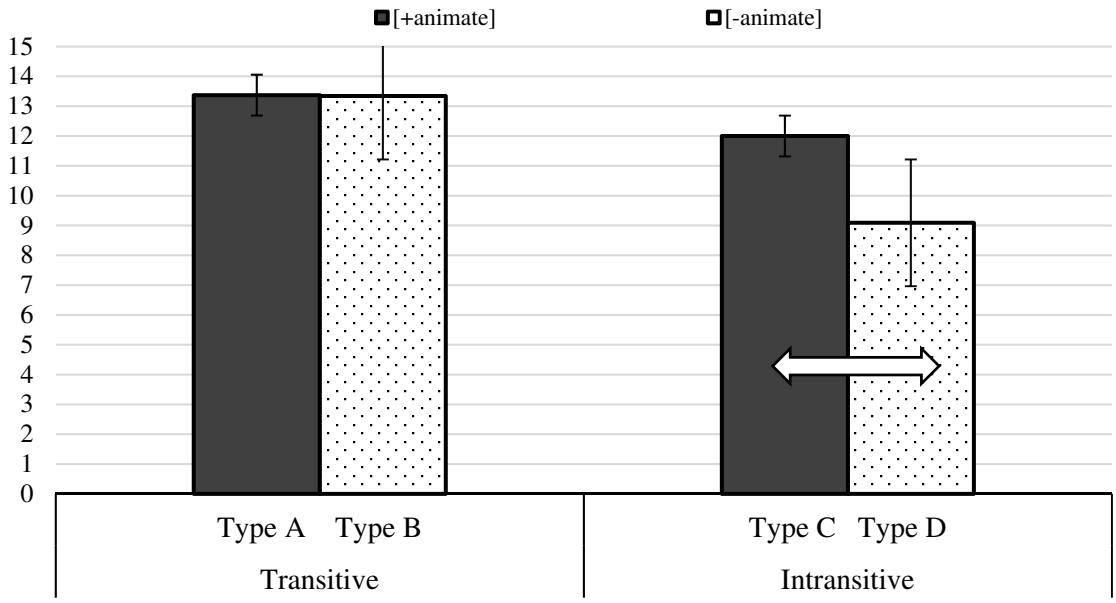


Figure 6. Mean scores of four types of test sentences

Table 11 *Results of Two-way Repeated ANOVA (Syntax × Animacy)*

Source	*SS*	*df*	*MS*	*F*-ratio	*p*-value	partial η^2
A (Syntax)	512.40	1	512.40	83.16	.000***	.57
s x A	394.35	64	6.16			
B (Animacy)	140.31	1	140.31	31.79	.000***	.33
s x B	282.44	64	4.41			
Interaction (A x B)	134.50	1	134.50	58.06	.000***	.48
s x A x B	148.25	64	2.32			

Note: +$p < .10$, *$p < .05$, **$p < .01$, ***$p < .001$

Comparing the results of the four types of test sentences between the Intermediate and Elementary groups, it is possible to observe the impact of learners' proficiency levels in the results. These results are shown in Table 12 and are graphically displayed in Figure 7 and Figure 8. The results of the two-way mixed ANOVA (groups: Elementary and Intermediate × Types: Type A to Type D) in Table 13 show that the main effect between the Elementary and Intermediate groups is statistically significant (F (1, 45) = 9.11, p =.004, partial η^2 =.17), as is the main effect among the four types of test sentences (F (2.07, 93.29) = 40.80, p <.001, partial η^2 =.48). However, the interaction effect between the two groups and the four types of test sentences is not statistically significant (F (2.07, 93.29) = 2.11, p =.12, partial η^2 =.04). Then, multiple comparisons among the four types of test sentences based on the Bonferroni's method indicate that the differences of mean scores between Type A and Type C (p <.001), between Type A and Type D (p <.001), between Type B and Type C (p <.001), between Type B and Type D (p <.001), and between Type C and Type D (p <.001) are statistically significant, whereas no statistically significant difference is observed between Type A and Type B (p =.99).

These results indicate that the mean scores in Intermediate Group tend to be higher than those in Elementary Group and that influence by proficiency group was significant. In addition, the results indicate that the effect of Type is significant.

Table 12. *Results of Four Types of Test Sentences by Proficiency Groups*

		[+Transitive]				[+Intransitive]			
		Type A		Type B		Type C		Type D	
Group	*n*	*M*	*SD*	*M*	*SD*	*M*	*SD*	*M*	*SD*
Elementary	25	13.00	1.85	12.76	2.47	11.92	1.68	8.16	3.12
Intermediate	22	13.73	1.35	13.95	1.43	11.91	1.80	10.27	2.64

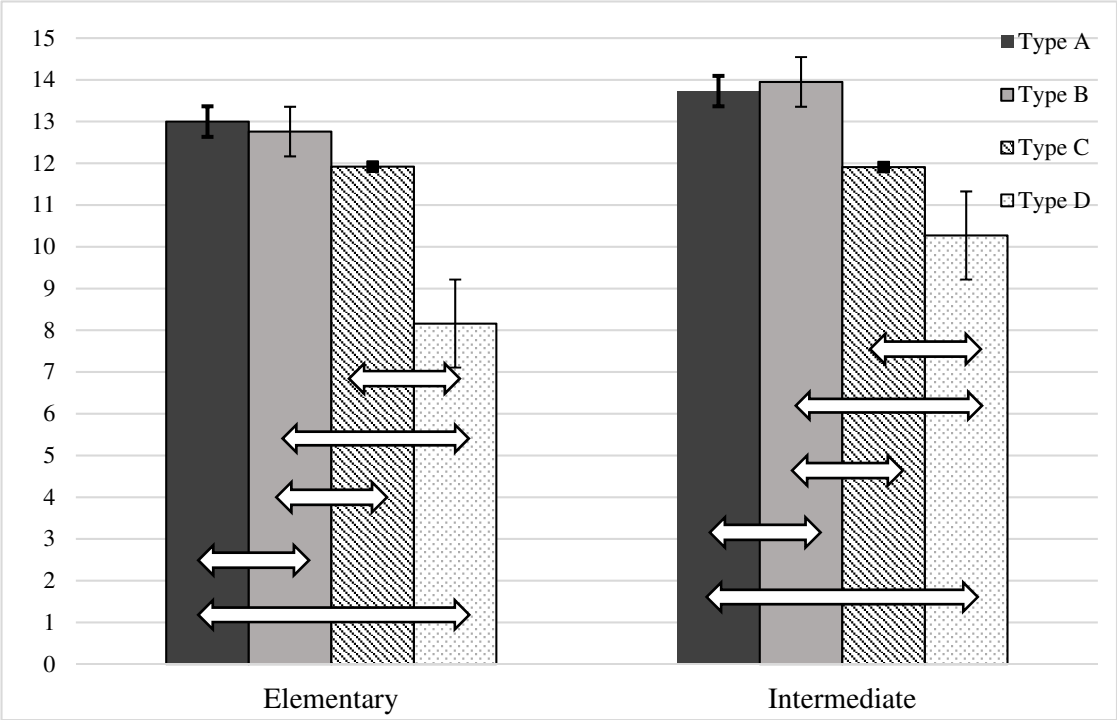


Figure 7. Results of Four Types of Test Sentences by Proficiency Groups 1

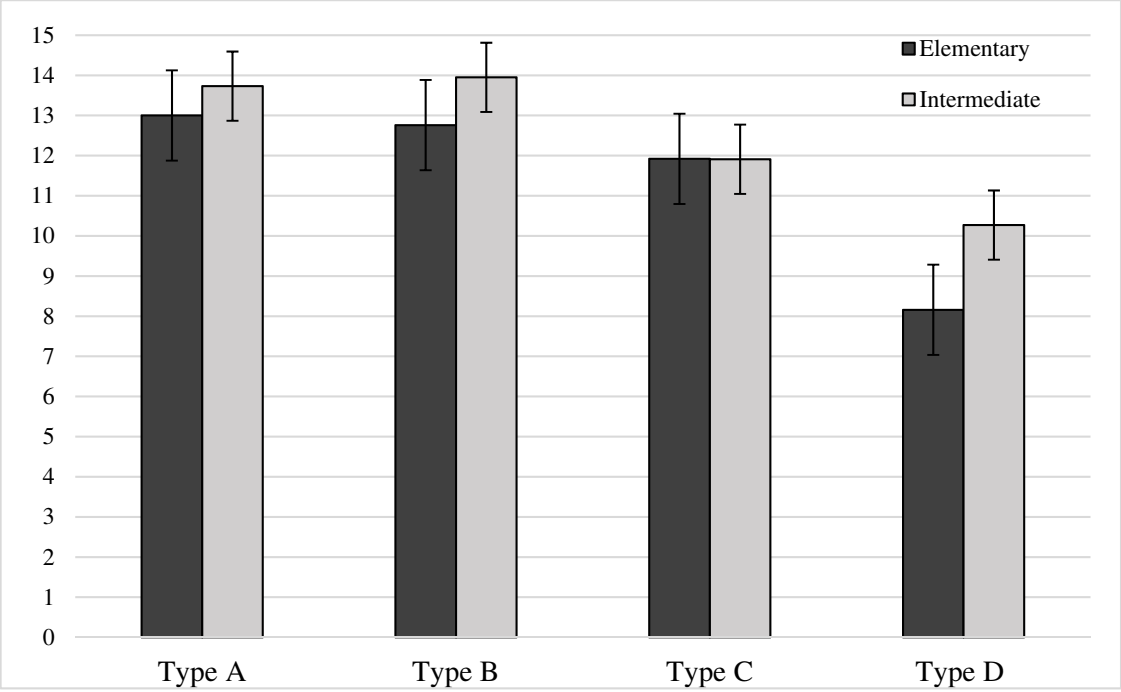


Figure 8. Results of Four Types of Test Sentences by Proficiency Groups 2

Table 13 *Results of Two-way Mixed ANOVA (groups: Elementary and Intermediate × Types)*

Source	*SS*	*df*	*MS*	*F*-ratio	*p*-value	partial η^2
A (Groups)	47.36	1	47.36	9.11	.004	.17
s x A	233.99	45	5.20			
B (Types)	536.06	2.07	258.58	40.80	.001	.48
s x B	591.27	93.29	6.34			
Interaction (A x B)	27.76	2.07	13.39	2.11	.12	.04

Note: +p < .10, *p < .05, **p < .01, ***p < .001

In order to investigate why Type D is the most difficult among the four types of sentences, the patterns to which the JLEs responded for Type D are analyzed. First, the overall results of Type D are presented in Table 14, which shows that 171 of the 375 responses (45.6%) of the Elementary group were incorrect, while 104 of the 330 (31.5%) responses of the Intermediate group were incorrect. The number of correct and incorrect answers of the Elementary group differed in terms of statistical significance when compared to those of the Intermediate group (χ^2 (1) =14.64, $p < .001$, $\varphi = .14$). This means that the more proficient in English the group is, the greater the number of correct answers.

Then, we attempted to classify JLEs' revised patterns of incorrect responses in Type D into five distinctive patterns. Table 15 shows that, in the Elementary group, JLEs revised the original intransitive declarative sentence into a passive voice 159 times out of 171 (93%), while in the Intermediate group, they changed the original declarative sentence into a passive form 93 times out of 104 (89.4%). The number of other responses was small: 3.33% (11/330) for the Intermediate group and 3.20% (12/375) for the Elementary group. The difference between numbers among five revised patterns of incorrect responses was confirmed as statistically significant (Elementary: χ^2 (4) =313.69, $p < .001$, $\varphi = 1.74$, Intermediate: χ^2 (4) =569.85, $p < .001$, $\varphi = 1.83$). Therefore, it was found that many JLEs thought that the Type D sentences were ungrammatical and they should revise Type D sentences into passive forms. For example, many JLEs judged that the sentence *The can opened easily* was ungrammatical and revised it to *The can was opened easily*.

Regarding the influence from L1 transfer, Table 16 presents test sentences and their corresponding Japanese sentences in Type D. Japanese allows inanimate subject nouns in intransitive usages. However, it was found that the JLEs in this study, in particular elementary learners, tended to regard English intransitive sentences with inanimate subject nouns and ergative verbs as ungrammatical.

These JLEs may have interpreted that [-animate] subject nouns (*the can, the big rock,* and *dry paper*) with an intransitive usage were not able to initiate a verb action by themselves. They may have interpreted that the nouns should have an external subject. Hence, they considered the sentences *Someone opened the can easily* or *The can was easily opened (by someone)* to be grammatically better than *The can opened easily*. It can be said that this is the main reason why a few JLEs revised the sentences into passive forms.

Therefore, it can be concluded that the animacy of subject nouns in ergative verb

usages influences JLEs' interpretation of ergative verb usages. Additionally, it can also be said that JLEs are more influenced by intransitive usages of ergative verbs than by transitive usages. Several previous authors have examined the reasons why L2 learners' overuse of passive forms in intransitive usages occurred based on the perspective of L1 morphological transfer (Kondo, 2009; Matsunaga, 2005; Montrul, 2000). However, the findings of this study lead to the conclusion that the animacy of subject nouns must be a major reason that JLEs overuse passive forms in intransitive usages.

Table 14 *Results of Type D ([Vi, -animate subjects])*

	Elementary		Intermediate	
	Numbers	%	Numbers	%
Correct	204	54.4%	226	68.5%
Incorrect	171	45.6%	104	31.5%
Total	375	100%	330	100%

Table 15 *Revised Patterns of the JLEs' Incorrect Responses for Type D ([Vi, -animate subjects])*

Patterns	Elementary		Intermediate	
	Numbers	%	Numbers	%
DP-*be*-V*en*	159	93.0 (42.4)	93	89.4 (28.2)
*DP-V (semantically incorrect tense)	6	3.5 (1.6)	5	4.8 (1.5)
DP-V-PP	4	2.3 (1.1)	1	1.0 (0.3)
DP_1-$V_1 \rightarrow DP_1$-V_2	2	1.2 (0.5)	2	1.9 (0.6)
*Did not revise	0	0.0 (0.0)	3	2.9 (0.9)
Total	171	100 (45.6)	104	100 (31.5)

Table 16 *Test Sentences and their Corresponding Japanese Sentences in Type D.*

Verbs	Test Sentences	Test Sentences in Japanese
begin	The first class begins at 7 o'clock.	１時間目は７時に始まる
burn	Dry paper burns easily.	乾いた紙は容易に燃える
close	The museum closes at 9 p.m. on Sundays.	その美術館は、日曜日は９時に閉まる
decrease	Water consumption decreases during the winter.	冬の間、水の消費は減る。
drop	Many apples dropped during the night.	夜中に、多くのリンゴが落ちた。
dry	Your clothes will soon dry.	あなたの服はすぐに乾くでしょう。
grow	Strawberries and oranges grow in warm climates.	苺と蜜柑は暖かい気候で育つ
increase	Her degree of anger increased.	彼女の怒りの度合いが増える。
mix	Oil and water don't mix.	油と水は混ざらない。
open	The can opened easily.	缶は簡単に開いた。
roll	The big rock rolled slowly.	大きな岩はゆっくり転がった
separate	Oil and water separate quickly.	油と水は素早くわかれる
start	The meeting will start at 8:45.	その会議は8:45に始まるでしょう
stop	My alarm clock stopped.	私の目覚まし時計は止まった
turn	My key wouldn't turn.	私の鍵は回らない

5.5.3 Results of Individual Verbs.

In order to examine whether 15 kinds of ergative verb usages are equally difficult, we analyzed the individual verb results in Type A, B, C, and D sentences, respectively.

5.5.3.1 Results in Type A sentences. Table 17 and Figure 9 show mean scores of individual verbs with Type A sentences. The maximum score per verb is 1.0. From Table 17 and Figure 9, it is noted that the ergative verb usages that reached 0.8 (i.e., 80% correct answers) for the Elementary group are *turn, open, close, mix, roll, begin, stop, dry, drop, start, increase,* and *grow*. These are followed by *separate* and *decrease* with a 0.7 (70%) accuracy score. *Burn* has a score of 0.6 (60%), the lowest among the 15 verbs. It should be noted that *burn* (Elementary: 0.68; Intermediate: 0.86; Overall: 0.82) shows a relatively low accuracy score in the Elementary group, whereas overall results in all 15 individual verbs, except *decrease* (0.72), show more than 80% accuracy in Type A.

A two-way mixed ANOVA (groups: Elementary and Intermediate × fifteen Individual Verbs with Type A sentences) was conducted in order to examine whether ergative verb usages in Type A were statistically different. As presented in Table 18, the results show that no main effect between the Elementary and Intermediate groups is observed (F (1, 45) = 2.31, p =.14, partial η^2 =.05), nor is there any interaction effect between the two groups and the 15 individual verbs (F (7.53, 338.78) = 0.75, p =.64, partial η^2 =.02). However, the main effect among the 15 individual verbs with Type A sentences is statistically significant (F (7.53, 338.78) = 0.75, p <.001, partial η^2 =.08). Subsequently, multiple comparisons among the individual verbs based on the Bonferroni's method were administrated in order to see what pairs of ergative verbs in Type A sentences were statistically different. The results indicate that the pairs shown in (58) have statistically significant differences, whereas no statistically significant difference is observed among the rest of the individual verbs.

(58) Pairs of ergative verbs that show statistical differences in Type A sentences:

a. between *open* and *decrease* (p =.04)

b. between *close* and *decrease* (p =.04)

From these results, it can be said that difficulty order among individual verbs is not clearly observed in Type A sentences, except between *open* and *decrease* (i.e., the highest and the lowest mean score) and between *close* and *decrease* (i.e., the second highest and the

lowest mean score). In other words, the JLEs were able to answer Type A sentences regardless of individual verbs except in the verb *decrease*. Hence, it can be considered that Type A sentences, with Subject ([+animate]) – Verb-Object structure, seem to have the easiest grammatical structure for language learning. However, it is still necessary to analyze why *decrease* in Type A sentences showed a relatively low score in comparison with the rest of the individual verbs. One possible reason could be the difficult of interpreting sentences that use the verb *decrease*. The mean score of *decrease* is actually close to 0.8, which is not a low score. Instead, it might be easy for JLEs to interpret transitive sentences with verbs such as *open* and *close*, which show a statistical significance with *decrease,* since people can easily imagine *open* and *close* as requiring the Agent to induce the verb action.

Table 17 *Mean Scores of Type A*

Verbs	Test Sentences in Type A	Elementary	Intermediate	Overall
open	*Mary opened the window.*	0.96	1.00	0.99
close	*Ann closed the windows in the early evening.*	0.96	1.00	0.97
turn	*Jim turned the car key.*	0.96	0.95	0.95
mix	*The children mixed the butter and sugar together.*	0.96	0.95	0.95
stop	*Mary stopped the fight.*	0.92	0.95	0.94
dry	*Taro's mother dried his hair.*	0.92	1.00	0.92
drop	*Ann dropped her computer.*	0.88	0.95	0.92
grow	*My uncle grows vegetables on his farm.*	0.80	0.95	0.91
roll	*Tom rolled a ball.*	0.92	0.95	0.89
start	*Mary started her homework at 5 o'clock.*	0.84	0.91	0.88
begin	*Emily begins her work at 9 a.m.*	0.92	0.82	0.86
increase	*Sarah increased her Japanese expressions.*	0.80	0.82	0.85
burn	*The man burned his house.*	0.68	0.86	0.82
separate	*Their teacher separated the fighting boys.*	0.76	0.91	0.80
decrease	*John decreased his stress.*	0.72	0.68	0.72

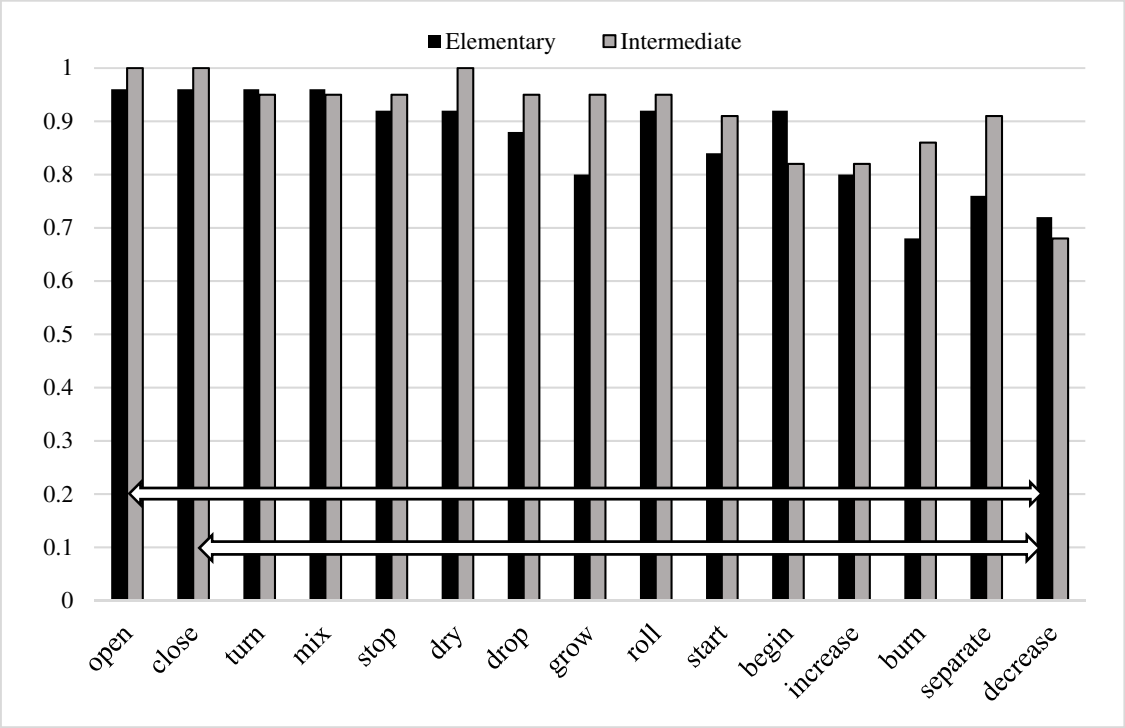


Figure 9. Results of individual verbs in Type A

Table 18 *Results of Two-Way Mixed ANOVA in Type A*

(Groups: Elementary and Intermediate × individual verbs)

Source	*SS*	*df*	*MS*	*F*-ratio	*p*-value	partial η^2
A (Group)	557.29	1	0.41	2.31	.14	.05
s x A	8.02	45	0.18			
B (Verbs)	4.47	7.53	0.59	0.75	.000***	.08
s x B	55.49	338.78	0.16			
Interaction (A x B)	0.93	7.53	0.12	0.75	.64	.02

Note: +p < .10, *p < .05, **p < .01, ***p < .001

5.5.3.2 Results in Type B sentences. Table 19 and Figure 10 show mean scores of individual verbs with Type B sentences. Overall, it is notable that ergative verb usages reached 0.8 (i.e., 80% correct answers) in all 15 individual verbs except *increase* (0.79) and *begin* (0.79). In particular, for the Intermediate group, the mean score of the verbs *open, dry,* and *roll* are high (1.00) and leading to the ceiling effect.

A two-way mixed ANOVA (groups: Elementary and Intermediate × fifteen Individual Verbs with Type B sentences) was conducted in order to examine whether ergative verb usages in Type B were statistically different. As shown in Table 20, the results show that neither the main effects nor the interaction effect are statistically significant (Main effect; Group, F (1, 45) = 3.97, p =.053, partial η^2 =.08, Verbs, F (8.08, 363.41) = 1.96, p =.05, partial η^2 =.04, Interaction effect; F (8.08, 363.41) = 0.72, p =.67, partial η^2 =.02).

From these results, it can be said that no differential difficulties appeared among all individual verbs with Type B sentences. Thus, as long as a thematic role of subject nouns is the Agent, JLEs could correctly interpret the grammaticality of sentences regardless of the animacy of subject nouns and individual verbs.

Therefore, the results of individual verbs in Type A and Type B sentences (i.e., transitive sentences) reveal that “Agent-Verb-Theme” is the most basic and easiest grammatical structure for language learning, no matter the degree of animacy of subject nouns or what individual verbs are placed in sentences.

Table 19 *Mean Scores of Type B*

Verbs	Test Sentences in Type B	Elementary	Intermediate	Overall
open	*The company opened the new office.*	0.92	1.00	0.97
drop	*A U.S. bomber dropped bombs in Iran yesterday.*	0.96	0.95	0.95
dry	*The strong sunlight dries the clothes.*	0.92	1.00	0.95
burn	*A lot of bombs from the airplane burned our city.*	0.92	0.95	0.94
roll	*The machine rolls papers.*	0.88	1.00	0.94
decrease	*Food fiber decreases fat in the blood.*	0.88	0.95	0.94
turn	*The pressure of the water turned the wheel.*	0.92	0.91	0.92
close	*Several rocks closed the road for two days.*	0.84	0.95	0.91
start	*The company will start a new business next month.*	0.88	0.91	0.88
grow	*The farm grows good grapes for wine.*	0.80	0.91	0.88
stop	*The accident stopped the traffic on the street.*	0.76	0.95	0.85
mix	*The blender mixed different kinds of fruits.*	0.80	0.82	0.83
separate	*The high wall separates two buildings.*	0.88	0.86	0.82
increase	*The company increased his salary.*	0.72	0.91	0.79
begin	*Our company began a new business.*	0.68	0.86	0.79

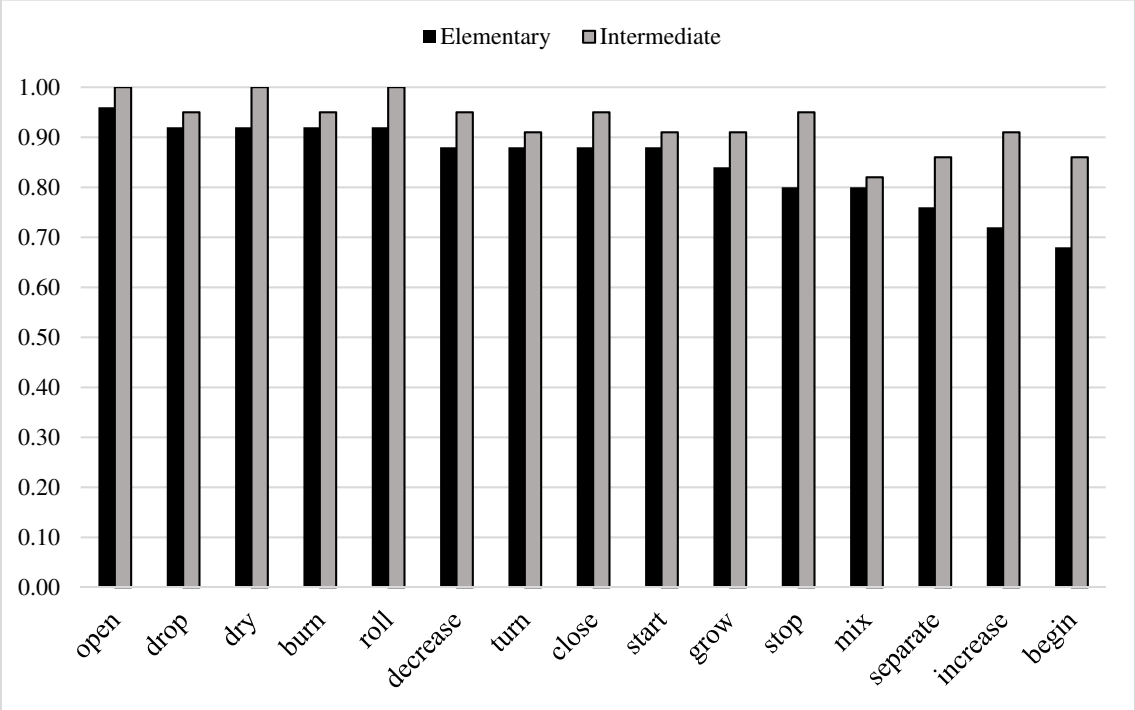


Figure 10. Results of individual verbs in Type B

Table 20 *Results of Two-Way Mixed ANOVA in Type B*

(groups: Elementary and Intermediate × individual verbs)

Source	*SS*	*df*	*MS*	*F*-ratio	*p*-value	partial η^2
A (Group)	1.11	1	1.11	3.97	.05	.08
s x A	12.63	45	0.28			
B (Verbs)	2.31	8.08	0.29	1.96	.05	.04
s x B	53.15	363.41	0.15			
Interaction (A x B)	0.85	8.08	0.15	0.72	.67	.02

Note: +p < .10, *p < .05, **p < .01, ***p < .001

5.5.3.3 Results in Type C sentences. Table 21 and Figure 11 show mean scores of individual verbs with Type C sentences. For the Elementary group, it is notable that ergative verb usages that reached 0.8 (i.e., 80% correct answers) employed the following 13 individual verbs: *roll, turn, separate, begin, open, drop, stop, grow, start, increase, close,* and *decrease.* It should be noted that *mix* (Elementary: 0.64, Intermediate: 0.55, Overall: 0.57)*, dry* (0.40, 0.50, 0.49), and *burn* (0.44, 0.32, 0.43) show a relatively low accuracy score in Type C.

A two-way mixed ANOVA (groups: Elementary and Intermediate × fifteen Individual Verbs with Type C sentences) was conducted in order to examine whether ergative verb usages in Type C were statistically different. As shown in Table 22, the results show that no main effect between the Elementary and Intermediate groups is observed (F (1, 45) = 0.01, p =.95, partial η^2 =.00), as well as no interaction effect between the two groups and fifteen individual verbs (F (8.25, 371.06) = 0.82, p =.65, partial η^2 =.02). However, the main effect among the fifteen individual verbs with Type C sentences is statistically significant (F (8.25, 371.06) = 11.29, p <001, partial η^2 =.20). Multiple comparisons among the individual verbs based on Bonferroni's method were subsequently administrated in order to determine which pairs of ergative verbs in Type C sentences are statistically different. The results indicate that pairs shown in (59), that is, the verbs *burn, dry,* and *mix,* with other individual verbs, have statistically significant differences, whereas no statistically significant difference is observed among the rest of the individual verbs.

(59) Pairs of ergative verbs that show statistical differences in Type C sentences:

(a) between *mix* and *roll, turn, separate, open*

(b) between *dry* and *roll, turn, separate, open, drop, stop, grow, start, begin, increase, close, decrease*

(c) between *burn* and *roll, turn, separate, open, drop, stop, grow, start, begin, increase, close, decrease*

It is necessary to consider the reason for the statistically significant differences between *mix, dry, burn,* and the rest of the individual verbs. When the lexical-semantic properties of the subject nouns of the verbs *burn* and *dry* (i.e., *Ten people* for the verb *burn* and *Jane's body* for the verb *dry)* are examined, JLEs might regard these animate nouns as

inanimate. As for the verb *mix*, the Type C sentence is used in the context of social interaction (test sentence: *Taro mixed well in the class*), which is derived from the original meaning. However, JLEs may interpret the meaning of the sentence with the original meaning of "*mix,*" that is, combine different substances to form one substance. Again, they may regard the animate subject noun "*Taro*" to be an inanimate substance. Thus, when JLEs are faced with these animate subject nouns (i.e., *Ten people, Jane's body,* and *Taro*), they might think that external objects are required in order to induce a verb action. Hence, Type C sentences with the verbs *burn*, *dry* and *mix* seem to be regarded as ungrammatical and revised into passive forms.

Therefore, it can be said that as long as the lexical-semantic property of subject nouns is animate, JLEs can correctly interpret intransitive sentences as grammatical regardless of individual verbs. However, there are exceptions when some animate subject nouns are interpreted as inanimate.

Table 21 *Mean Scores of Type C*

Verbs	Test Sentences in Type C	Elementary	Intermediate	Overall
roll	*Emi can roll quickly.*	1.00	0.96	0.97
turn	*Taro turned to Mr. Tanaka quickly.*	0.92	0.96	0.94
separate	*Mary and Tom separated 10 years ago.*	0.92	0.96	0.94
open	*We will open earlier than usual.*	0.88	0.96	0.91
drop	*The boy dropped nearly 5 meters into a net.*	0.92	0.86	0.89
stop	*Hanako stopped suddenly.*	0.80	0.91	0.88
grow	*Nick has grown rapidly since I saw him last year.*	0.76	0.96	0.88
start	*The students started earlier.*	0.84	0.86	0.86
begin	*The English teacher began at page 10 today.*	0.88	0.77	0.85
increase	*People in this area have increased rapidly in number.*	0.88	0.77	0.82
close	*We will close in five minutes.*	0.84	0.77	0.82
decrease	*The foreign tourists have decreased rapidly in number.*	0.80	0.82	0.77
mix	*Taro mixed well in the class.*	0.64	0.55	0.57
dry	*Jane's body dried.*	0.40	0.50	0.49
burn	*Ten people burned to death in a hotel fire.*	0.44	0.32	0.43

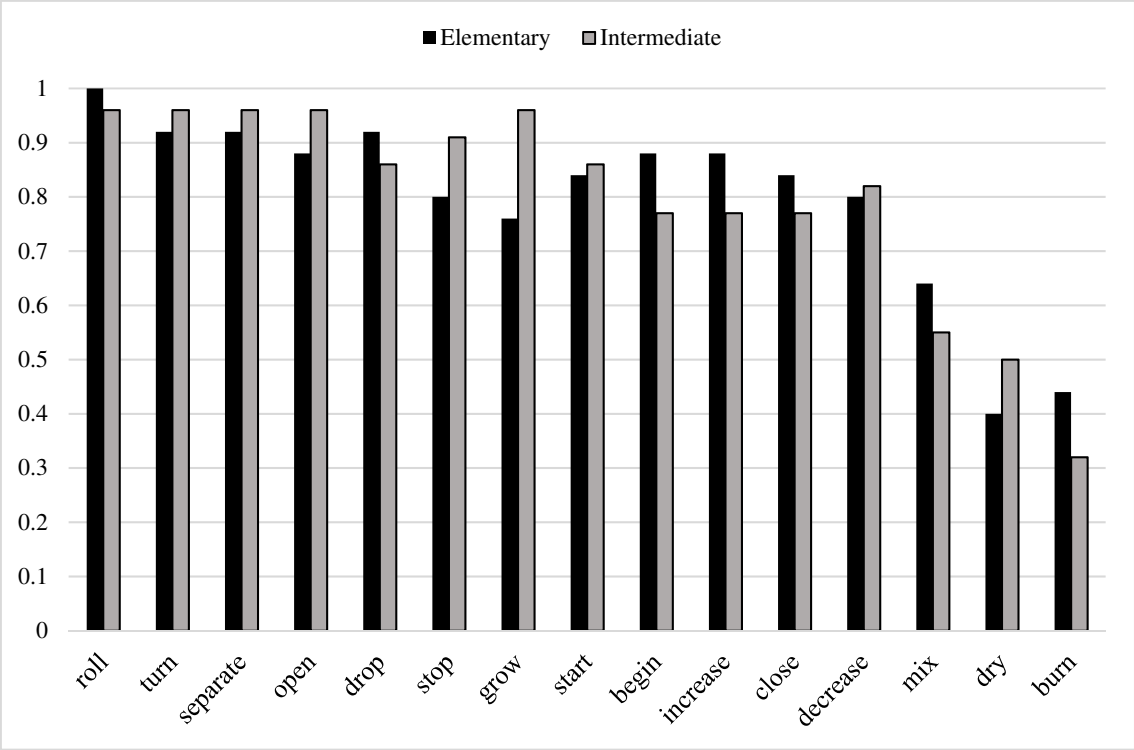


Figure 11. Results of individual verbs in Type C

Table 22 *Results of Two-Way Mixed ANOVA in Type C*

(Groups: Elementary and Intermediate × individual verbs)

Source	*SS*	*df*	*MS*	*F*-ratio	*p*-value	partial η^2
A (Group)	0.001	1	0.001	0.01	.95	.00
s x A	8.85	45	0.20			
B (Verbs)	20.92	8.25	2.54	11.29	.000***	.20
s x B	83.38	371.06	0.18			
Interaction (A x B)	1.51	8.25	0.23	0.82	.59	.02

Note: +p < .10, *p < .05, **p < .01, ***p < .001

5.5.3.4 Results in Type D sentences. Finally, this study analyzed the individual verb results in Type D. Table 23 and Figure 12 show the mean scores of individual verbs with Type D sentences. For the Elementary group, it is noticeable that the ergative verb usages that reached 0.8 (i.e., 80% correct answers) are *increase* and *decrease*. Then, *turn, begin, dry, close, mix,* and *start* followed with a 0.6 (60%) accuracy score. *Stop, grow,* and *separate* followed with a 0.5 (50%) accuracy score. Then, *burn* with 0.4 (40%) and*, drop* scored 0.3 (30%). *Roll* shows a 0.24 (24%) accuracy score, being the second lowest, and *open* has 0.16 (16%) accuracy score, being the lowest among the 15 verbs. It should be noted that *drop* (Elementary: 0.32; Intermediate: 0.46; Overall: 0.39)*, roll* (0.24, 0.41, 0.32), *burn* (0.40, 0.64, 0.52), and *open* (0.16, 0.41, 0.28) show remarkably low accuracy scores in Type D.

A two-way mixed ANOVA (groups: Elementary and Intermediate × fifteen Individual Verbs with Type D sentences) was conducted in order to examine whether ergative verb usages in Type D were statistically different. As shown in Table 24, the results show that no interaction effect between the two groups and 15 individual verbs is observed (F (14, 630) = 0.60, p =.87, partial η^2 =.01). However, the main effect among the Elementary and Intermediate groups as well as 15 individual verbs with Type D sentences is statistically significant (Group; F (1, 45) = 6.19, p =.02, partial η^2 =.12, Verbs; F (14, 630) = 8.20, p <.001, partial η^2 =.15).

Then, multiple comparisons among the individual verbs based on Bonferroni's method were subsequently administrated in order to see what pairs of ergative verbs in Type D sentences are statistically different. The results show that the pairs shown in (60) have statistical differences. See also Table 25 for the results of multiple comparisons.

(60) Pairs of ergative verbs that show statistical differences in Type D sentences:

a. between *increase* and (*burn*, *drop, roll, open*)
b. between *decrease* and (*burn*, *drop, roll, open*)
c. between *begin* and (*drop, roll*, *open)*
d. between *turn* and (*drop, roll*, *open)*
e. between *separate* and (*roll*, *open)*
f. between *mix* and (*roll, open*)
g. between *dry* and *open*
h. between *close* and *open*

Table 23 *Mean Scores of Type D*

Verbs	Test Sentences in Type D	Elementary	Intermediate	Overall
increase	*Her degree of anger increased.*	0.80	0.96	0.88
decrease	*Water consumption decreases during the winter.*	0.80	0.91	0.85
turn	*My key wouldn't turn.*	0.68	0.86	0.77
begin	*The first class begins at 7 o'clock.*	0.64	0.91	0.77
mix	*Oil and water don't mix.*	0.60	0.86	0.73
separate	*Oil and water separate quickly.*	0.56	0.77	0.67
dry	*Your clothes will soon dry.*	0.64	0.68	0.66
close	*The museum closes at 9 a.m. on Sundays.*	0.60	0.59	0.60
start	*The meeting will start at 8:45.*	0.60	0.59	0.60
grow	*Strawberries and oranges grow in warm climates.*	0.56	0.64	0.60
stop	*My alarm clock stopped.*	0.56	0.59	0.58
burn	*Dry paper burns easily.*	0.40	0.64	0.52
drop	*Many apples dropped during the night.*	0.32	0.46	0.39
roll	*The big rock rolled slowly.*	0.24	0.41	0.32
open	*The can opened easily.*	0.16	0.41	0.28

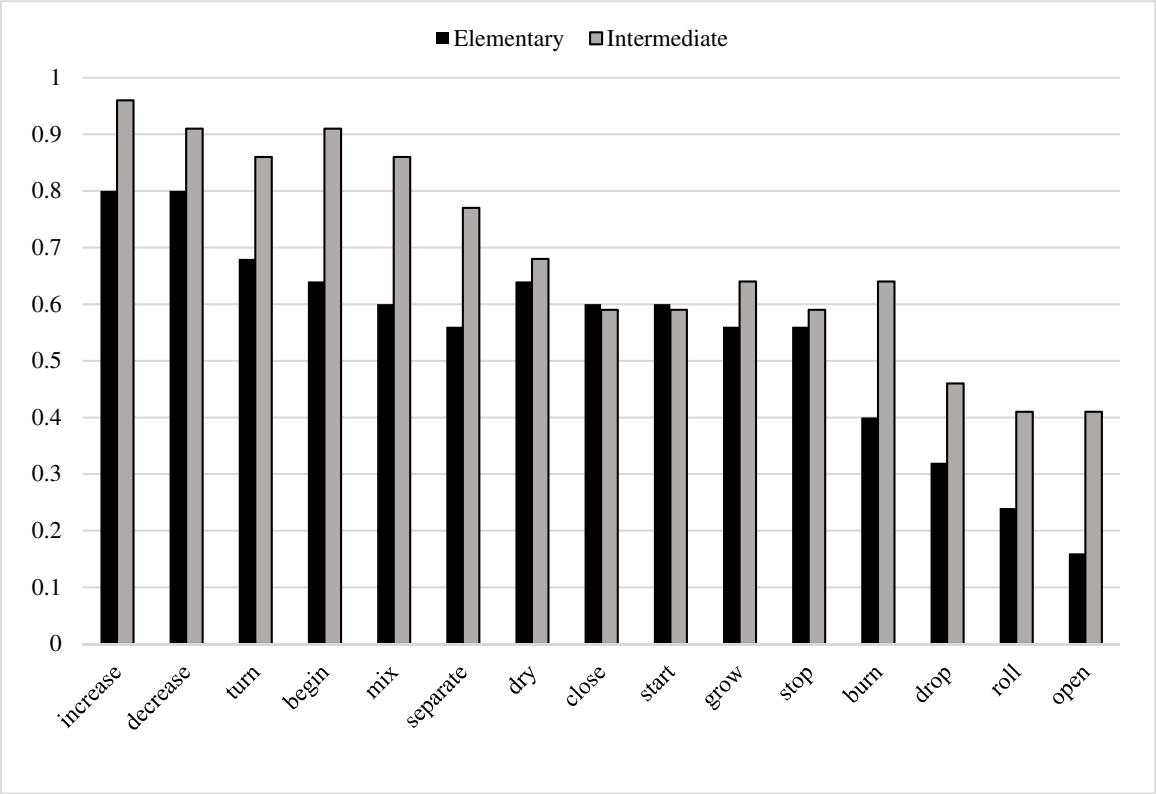


Figure 12. Results of individual verbs in Type D

Table 24 *Results of Two-Way Mixed ANOVA in Type D*

(Groups: Elementary and Intermediate × individual verbs)

Source	*SS*	*df*	*MS*	*F*-ratio	*p*-value	partial η^2
A (Group)	3.48	1	3.48	6.19	.02*	.12
s x A	25.32	45	0.56			
B (Verbs)	21.16	14	1.51	8.20	.000***	.15
s x B	1.55	630	0.18			
Interaction (A x B)	116.12	14	0.11	0.60	.87	.01

Note: +p < .10, *p < .05, **p < .01, ***p < .001

Table 25 *Results of Multiple Comparisons between Individual Verbs in Type D*

	Category 1		Category 2		Category 3		Category 4		Category 5			Category 6			
	increase	*decrease*	*turn*	*begin*	*mix*	*separate*	*dry*	*close*	*start*	*grow*	*stop*	*burn*	*drop*	*roll*	*open*
increase															
decrease	*n.s*														
turn	*n.s*	*n.s*													
begin	*n.s*	*n.s*	*n.s*												
mix	*n.s*	*n.s*	*n.s*	*n.s*											
separate	*n.s*	*n.s*	*n.s*	*n.s*	*n.s*										
dry	*n.s*	*n.s*	*n.s*	*n.s*	*n.s*	*n.s*									
close	*n.s*	*n.s*	*n.s*	*n.s*	*n.s*	*n.s*	*n.s*								
start	*n.s*	*n.s*	*n.s*	*n.s*	*n.s*	*n.s*	*n.s*	*n.s*							
grow	*n.s*	*n.s*	*n.s*	*n.s*	*n.s*	*n.s*	*n.s*	*n.s*	*n.s*						
stop	*n.s*	*n.s*	*n.s*	*n.s*	*n.s*	*n.s*	*n.s*	*n.s*	*n.s*	*n.s*					
burn	*.01**	*.03**	*n.s*	*n.s*	*n.s*	*n.s*	*n.s*	*n.s*	*n.s*	*n.s*	*n.s*				
drop	*.001****	*.001****	*.01**	*.01**	*n.s*	*n.s*	*n.s*	*n.s*	*n.s*	*n.s*	*n.s*	*n.s*			
roll	*.001****	*.001****	*.001****	*.001****	*.004***	*.03**	*n.s*	*n.s*	*n.s*	*n.s*	*n.s*	*n.s*	*n.s*		
open	*.001****	*.001****	*.001****	*.001****	*.001***	*.001***	*.004***	*.03**	*n.s*	*n.s*	*n.s*	*n.s*	*n.s*	*n.s*	

Note: **p* < .05, ***p* < .01, ****p* < .001, *n.s* = not significant

From these results, the study divided the difficulty degrees of the 15 ergative verbs into six groups, which are Categories 1, 2, 3, 4, 5, and 6. As presented in Figure 13 (see also Table 25), *increase* and *decrease* comprise the easiest group (Category 1) for which JLEs can judge grammaticality in Type D. They have a statistical difference from the verbs *burn*, *drop*, *roll,* and *open*. Then, the verbs *turn* and *begin* belong to the second easiest group (Category 2), which has a statistical difference from the verbs *drop, roll,* and *open*. The verbs *mix* and *separate* belong to the third easiest group (Category 3), which has a statistical difference from the verbs *roll* and *open*. *Dry* and *close* belong to Category 4, which has a statistical difference from the verb *open*. *start, grow,* and *stop* belong to Category 5*,* which did not show any statistical differences from the other verbs. *Burn, drop, roll,* and *open* comprise the sixth group (Category 6), which is the most difficult group among the six. They show statistical differences from *increase, decrease, begin,* and *turn*. Although *burn* did not show any statistical differences with the other verbs, except with *increase* and *decrease*, I added it to Category 6 because the mean score of the Elementary group was fairly low (less than 0.5). In order to consider a major factor for the difficulty rankings, the researcher has proposed that the lexical-semantic features of each inanimate subject noun in Type D should be analyzed in more detail. Table 26 and Table 27 present the test sentences in Categories 1 and 2 (i.e., *increase, decrease, turn,* and *begin*) and Category 6 (i.e., *burn, drop, roll,* and *open*). They are then compared with each other.

Regarding the lexical-semantic properties of subjects in Category 1 and 2, it should be noted that they are abstract nouns (i.e., *her degree of anger, water consumption, the first class*), which are closely related to human behaviors or emotions, and that the subject of Category 2 is related to possession by human beings (i.e., *my key*). JLEs seem to recognize that these inanimate nouns are lexically close to animate nouns in terms of animacy. This is because (a) abstract nouns imply the existence of human beings (i.e., the Agent or performer of the verb) that control the action of the verb, and (b) nouns in Category 2 also show a possession of human beings. Adding a personal pronoun (i.e., *my*) to an inanimate noun (*key,* in this case) clearly shows that there is a person who owns or controls its action. Thus, JLEs are likely to accept these inanimate nouns as sentential subjects since they behave like animate nouns.

Consequently, it may not be very difficult for JLEs to correctly judge intransitive sentences with these inanimate subject nouns. That is, they accept intransitive sentences with

an inanimate subject noun as grammatical. Although Kazama (2016) and Xiong (2009) state that inanimate nouns can be sentential subjects in Japanese transitive sentences in the case that the inanimate sentential subject implies the existence of human beings behind them, this claim can also apply to when JLEs acquire intransitive sentences with inanimate subject nouns in ergative verb usages. On the other hand, the inanimate subject nouns in Category 6 do not imply the existence of human beings behind them; they are substances or material nouns. Hence, they are lexically far from animate nouns in terms of animacy, leading JLEs to think that the sentence structures are ungrammatical.

In sum, in the light of the degree of lexical-semantic properties of animacy, inanimate subject nouns can be divided into at least two types: (a) inanimate nouns, which are closely related to animate nouns or have some relation to human beings (e.g., the possessions, emotions, and behaviors of human beings), that is, a less [-animate] feature, and (b) inanimate nouns, which are far from animate nouns, that is, a more [-animate] feature.

Let us further consider the animacy of subject nouns. In many human languages, it is very common for the Agent or Performer of a verb action to come before the Patient (or Theme). Then, this noun becomes a sentence subject, which makes a Subject + Verb (+ Object) structure. The subject does something expressed by the verb; the subject must act, move, and perform, which means that it must be a living thing. Thus, an animate noun must usually occupy the subject position.

It can be said that this is an essential part of human languages. This "subject is Agent" strategy is so powerful that L2 learners apply it before depending on the L1 properties. In other words, L2 learners, particularly elementary learners, tend to apply this Agent First strategy before applying the strategy of L1 transfer in L2 acquisition. This is why JLEs in this study, particularly elementary JLEs, thought that sentences such as *The can opened easily* were ungrammatical, even though the Japanese language uses an inanimate subject noun in an intransitive sentence. Therefore, the difference of lexical-semantic properties among inanimate nouns in terms of animacy, rather than the properties of verbs themselves, may affect the acquisition of ergative verbs.

Category 1	Category 2	Category 3	Category 4	Category 5	Category 6
increase, decrease	*turn, begin*	*separate, mix*	*close, dry*	*start, grow, stop*	*burn, drop, roll, open*

easy ⟷ difficult

Figure 13. Groupings of the Difficulty Rankings of 15 Ergative Verbs

Table 26 *Type D Test Sentences for Category 1 and 2*

Verb	Subjects	Test sentences in Type D
increase	Her degree of anger	Her degree of anger increased.
decrease	Water consumption	Water consumption decreases during the winter.
turn	My key	My key wouldn't turn.
begin	The first class	The first class begins at 7 o'clock.

Table 27 *Type D Test sentences for Category 6*

Verb	Subjects	Test sentences in Type D
burn	Dry paper	Dry paper burns easily.
drop	Many apples	Many apples dropped during the night.
roll	The big rock	The big rock rolled slowly.
open	The can	The can opened easily.

5.5.4 Results of Individual Learners.

5.5.4.1 Results of Individual learners by Types. The performance of individual learners is examined in the following analysis. The individual results of four types of test sentences are shown in Table 28 for all participants, Table 29 for the Intermediate group, and Table 30 for the Elementary group. Those who correctly answer 12 or more out of 15 test sentences (i.e., over 80% correct answers) are regarded as having correctly understood the respective ergative verb usages and are marked as "+." In contrast, those who received a score under 11 (i.e., less than 80% correct answers) are regarded as failing to correctly understand the usages and are marked as "-."

As can be seen from Table 28, it is observed that 21 out of 65 participants (32%) passed the criterion (i.e., more than 80% correct answers) in Type A, B, and C, but fail the criterion in Type D. This tendency is seen in both Intermediate and Elementary groups (See also Table 29 and Table 30). It can be said that about one third of the participants have difficulties in interpreting intransitive usages with inanimate nouns (Type D), although they can correctly understand the transitive usages (Type A & B) as well as the intransitive usages with animate nouns (Type C). This follows the same line of argument discussed in the overall group results.

Then, as participants mark the lower total score, 15 participants tend to fail the criterion not only in Type D but also in Type C, which indicates that they have difficulty interpreting intransitive usages although they can correctly interpret transitive usages. In addition, 5 participants have difficulty interpreting both transitive and intransitive sentences with inanimate nouns (i.e., Type B and Type D). It is noted that no JLEs show the difficulties in interpreting transitive usages, although all are able to correctly interpret intransitive usages except two JLEs (S36 and S22). In other words, JLEs tend to acquire an understanding of transitive usages first and then acquire that of intransitive usages. The important point is that many JLEs have difficulty in interpreting Type D sentences and have no difficulty with other types of test sentences, but not vice versa. Therefore, the difficulty order in the acquisition of ergative verb usages can be confirmed. As shown in (61), Type D is the most difficult type of sentence, Type C is the second most difficult, and both Type A and Type B are the third most difficult types of sentences. JLEs' ability to accurately interpret Type D sentences seems to be completed in the last stage among the four types of ergative verb usages.

(61) The difficulty order of ergative verb usages (Type A to Type D)

Type D ([+intransitive] & [+animate])

Type C ([+intransitive] & [+animate])

Type A ([+transitive] & [+animate]) & Type B ([+transitive] & [-animate])

Difficult

↓

Easy

Table 28 *Individual Results of Four Types of Test Sentences*

Participant No	Type A	Type B	Type C	Type D	Total Score
S26	+	+	+	+	59
S9	+	+	+	+	58
S21	+	+	+	+	57
S7	+	+	+	+	56
S36	-	+	+	+	56
S56	+	+	+	+	56
S29	+	+	+	+	54
S44	+	+	+	+	54
S10	+	+	+	-	53
S11	+	+	+	-	53
S15	+	+	+	+	52
S30	+	+	+	-	52
S33	+	+	+	+	52
S61	+	+	+	+	52
S2	+	+	+	-	51
S19	+	+	+	-	51
S32	+	+	+	-	50
S43	+	+	+	-	50
S47	+	+	+	-	50
S50	+	+	+	-	50
S52	+	+	+	-	50

S58	+	+	-	-	50
S60	+	+	+	-	50
S65	+	+	-	+	50
S8	+	-	+	-	49
S20	+	+	+	-	49
S23	+	-	+	-	49
S27	+	+	+	-	49
S3	+	+	+	-	48
S5	+	+	-	-	48
S22	-	+	+	+	48
S25	+	+	+	-	48
S34	+	+	-	-	48
S46	+	+	-	+	48
S48	+	+	-	-	48
S51	+	+	+	-	48
S62	+	+	+	-	48
S63	+	+	+	-	48
S18	+	+	-	-	47
S40	+	+	-	+	47
S13	+	+	+	-	46
S17	+	+	-	-	46
S24	-	+	-	+	46
S38	+	+	-	-	46
S54	+	+	-	-	46
S55	+	+	-	-	46
S14	+	+	-	-	45
S45	+	+	-	-	45
S53	+	+	+	-	45
S64	+	-	-	+	45
S1	-	+	-	+	44
S35	+	+	-	-	44
S12	+	+	+	-	43

S6	-	-	-	-	42
S16	+	+	+	-	42
S28	+	-	+	-	42
S31	+	+	-	-	42
S59	+	+	-	-	42
S41	+	-	-	-	41
S57	+	-	+	-	41
S4	-	-	-	-	39
S37	+	+	-	-	39
S42	-	+	-	-	39
S39	+	-	+	-	38
S49	+	+	-	-	37

Table 29 *Individual Results of Four Types of Test Sentences for the Intermediate Group*

Participant No	Type A	Type B	Type C	Type D	Total Score
S26	+	+	+	+	58
S9	+	+	+	+	57
S21	+	+	+	+	56
S29	+	+	+	+	56
S15	+	+	+	+	56
S33	+	+	+	+	54
S19	+	+	+	-	54
S32	+	+	+	-	53
S50	+	+	+	-	53
S58	+	+	-	-	52
S60	+	+	+	-	52
S65	+	+	-	+	52
S8	+	-	+	-	52
S25	+	+	+	-	51
S46	+	+	-	+	51
S48	+	+	-	-	50
S40	+	+	-	+	50
S24	-	+	-	+	50
S54	+	+	-	-	50
S55	+	+	-	-	50
S35	+	+	-	-	50
S6	-	-	-	-	50

Table 30 *Individual Results of Four Types of Test Sentences for the Elementary Group*

Participant No	Type A	Type B	Type C	Type D	Total Score
S36	-	+	+	+	50
S11	+	+	+	-	49
S2	+	+	+	-	49
S52	+	+	+	-	49
S20	+	+	+	-	49
S23	+	-	+	-	48
S27	+	+	+	-	48
S3	+	+	+	-	48
S22	-	+	+	+	48
S34	+	+	-	-	48
S51	+	+	+	-	48
S62	+	+	+	-	48
S63	+	+	+	-	48
S18	+	+	-	-	48
S45	+	+	-	-	48
S1	-	+	-	+	47
S12	+	+	+	-	47
S16	+	+	+	-	46
S28	+	-	+	-	46
S59	+	+	-	-	46
S41	+	-	-	-	46
S57	+	-	+	-	46
S42	-	+	-	-	46
S39	+	-	+	-	45
S49	+	+	-	-	45

Then, let us look more closely at the individual results of Type D sentences, since it is the most difficult type among ergative verb usages. Table 31 and Figure 14 show the frequency distribution in the results of Type D sentences. Although 18 JLEs (27.7%) were able to pass the criterion (i.e., over 80% correct answers), 47 JLEs (72.3%) failed to pass it. As shown in Figure 15, as for the Elementary group, only 3 JLEs (12.0%) were able to pass the criterion, whereas 12 JLEs (84.4%) failed to pass it. As for the Intermediate group, 10 JLEs (45.5%) were able to pass the criterion, while 12 (54.5%) JLEs failed to pass it.

Then, the chi-square test was conducted to verify if there are any statistically significant differences in numbers of correct answers between the Elementary and Intermediate groups. The results indicate that the groups are statistically different (χ^2 (3) = 8.58, p < .04, φ =.43). Moreover, the results of the multiple comparison based on the Bonferroni method show that the frequencies of "12-15" and "4-7" has a statistically significant difference between the two groups (χ^2 (1) = 7.54, p < .04, φ =.40) (12-15: Elementary 3 JLEs, Intermediate 10 JLEs, 4-7: Elementary 10 JLEs, Intermediate 3 JLEs). These results also suggest that learners' proficiency levels relate to the significant differences of numbers of correct answers in Type D sentences.

Therefore, it is observed that more JLEs in the Elementary group cannot pass the criterion in comparison with the results of the Intermediate group. Thus, it can be said that proficiency level may affect the interpretation of Type D sentences. That is, the more learners' proficiency levels increase, the more the degree of interpretation for Type D sentences is enhanced. One possible strategy of interpretation for ergative verb usages is that JLEs with low proficiency may use the information of the lexical-semantic properties of subject nouns, that is, animacy. They may think that the thematic role of intransitive usages with ergative verbs are the Agent, not the Theme or Patient, due to the application of the strategy of the so-called Agent First principle. Hence, those JLEs tend to judge that intransitive usages with inanimate nouns are ungrammatical because the subject nouns are inanimate and do not cause the verb action by themselves.

Table 31 *Frequency Distribution in the results of Type D sentences*

	Elementary		Intermediate		Overall	
Score	Number	%	Number	%	Number	%
12- 15 (over 80%)	3	12.0%	10	45.5%	18	27.7%
8- 11 (53%- 73%)	11	44.0%	9	40.9%	28	43.1%
4- 7 (27%- 47%)	10	40.0%	3	13.6%	18	27.7%
0- 3 (0% - 20%)	1	4.0%	0	0.0%	1	1.5%
Total	25	100.0%	22	100.0%	65	100.0%

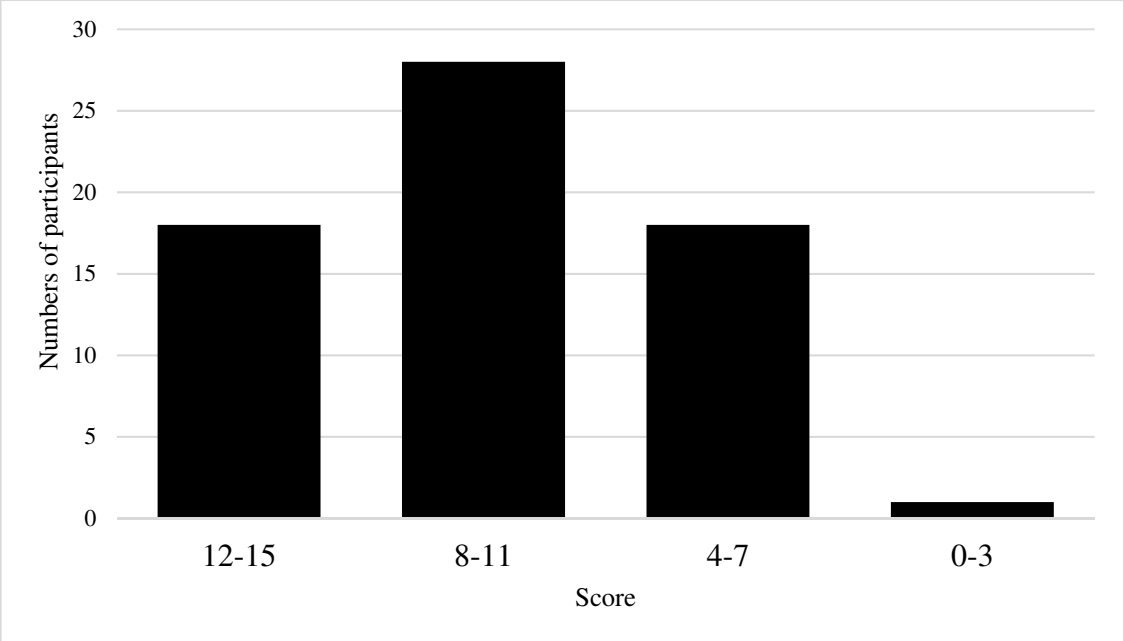


Figure 14. Frequency Distribution in the results of Type D sentences

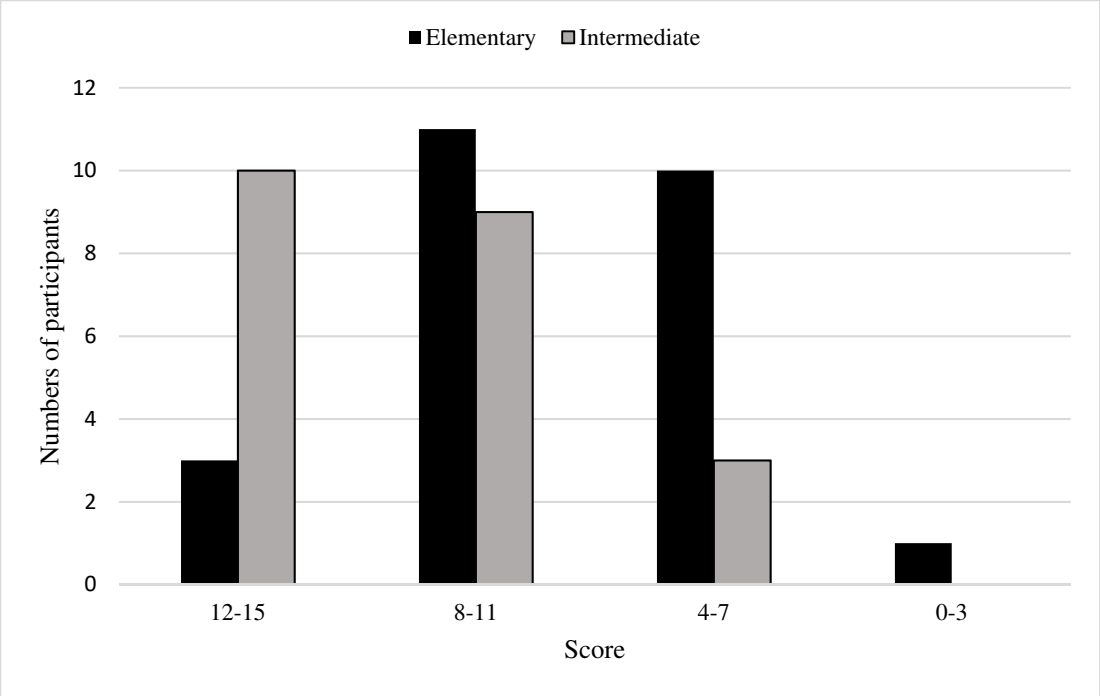


Figure 15. Frequency Distribution in the results of Type D sentences by Proficiency Group

5.5.4.2 Results of Cluster Analysis. In order to further analyze the individual learner results by Types, the participants were grouped using a cluster analysis. I employed Ward's method with squared Euclidean distances for the cluster analysis. Then, I divided the participants into three groups (Clusters 1 to 3). See Table 32, Figure 16 and Appendicies D. A two-way mixed ANOVA was conducted (Clusters: Cluster 1 to 3 x Types: Type A to D) (see Table 33). The results revealed statistically significant differences among Clusters and Types, respectively (Cluster: F (2, 62) = 27.99, p <.001, partial η^2 = .47, Type: F (2.35, 145.81) = 61.88, p <.001, partial η^2 = .32). An interaction effect was also statistically significant (F (4.70, 145.81) = 16.90, p <.001, partial η^2 = .35). Among the three groups, the participants in Cluster 1 had greater difficulty in understanding ergative verb structures compared to those in Clusters 2 and 3: Cluster 1 < Cluster 3 (p <.001), Cluster 2 < Cluster 3 (p <.001), Cluster 1 < Cluster 2 (p =.008).

Using the Bonferroni correction, multiple comparisons were conducted between Clusters on each Type (see Table 34), and between Types on Cluster 1, Cluster 2 and Cluster 3, respectively (see Table 35). As for the results of Cluster 1, no statistically significant difference was observed among Types, since a simple main effect was not statistically significant (F (1.59, 15.87) = 0.28, p =.71, partial η^2 = .03). Thus, the participants in Cluster 1 can be referred to as "less dependent on the animacy of subject nouns and the Agent First principle." Compared with Clusters 2 and 3, the participants in Cluster 1 could not answer correctly for both transitive and intransitive usages, and further, their average score was not different among Types.

On the other hand, the majority of the participants (n = 40) were in Cluster 2. They can be referred to as "more dependent on the animacy of subject nouns and the Agent First principle." Compared to Cluster 1, the participants in Cluster 2 could answer correctly for transitive usages more than for intransitive usages. Moreover, they had difficulty in answering Type D sentences correctly compared with those in Cluster 1 and Cluster 3. The participants in Cluster 3 can be referred to as being "moderately dependent on the animacy of subject nouns and the Agent First principle" since they had difficulty only in answering Type D sentences, but their results were very high on each Type. From these results, it can be assumed that the three groups differed based on how much they relied on the animacy of subject nouns and the Agent First principle. Although most of the participants depended on animacy and the Agent First principle, and hence had difficulty answering Type D sentences,

it was also found that there were some participants (Cluster 1) who did not.

In a classroom environment, the teacher should aim to promote the degree of interpretation of all types of ergative verb structures, as indicated by the learners in Cluster 3. However, the results also showed that apart from the JLEs who depend on the Agent First Principle (such as those in Cluster 2), there are also those who did not depend on the principle and showed a poor understanding of all types of ergative verb structures (such as those in Cluster 1). Thus, within the same learner groups in the classroom environment, participants tend to interpret ergative verb structures by applying different strategies.

It is difficult to pinpoint why those in Cluster 1 did not use the strategies that other participants tended to use. It might be discussed in terms of learner factors, which were not explored in this study. Therefore, to see why these participants did not use the same strategies as the rest (i.e., using the information of the animacy of subject nouns), further research is necessary with a focus on other factors, such as learner factors.

Table 32 *Results of Cluster Analysis by Types*

	Type A		Type B		Type C		Type D	
	M	*SD*	*M*	*SD*	*M*	*SD*	*M*	*SD*
Cluster 1 (*n*=11)	11.18	1.64	11.00	2.45	10.91	1.44	10.36	2.31
Cluster 2 (*n*=40)	13.85	1.09	13.90	1.39	11.50	1.43	7.63	2.56
Cluster 3 (*n*=14)	13.71	1.16	13.57	1.59	14.29	0.59	12.29	1.67

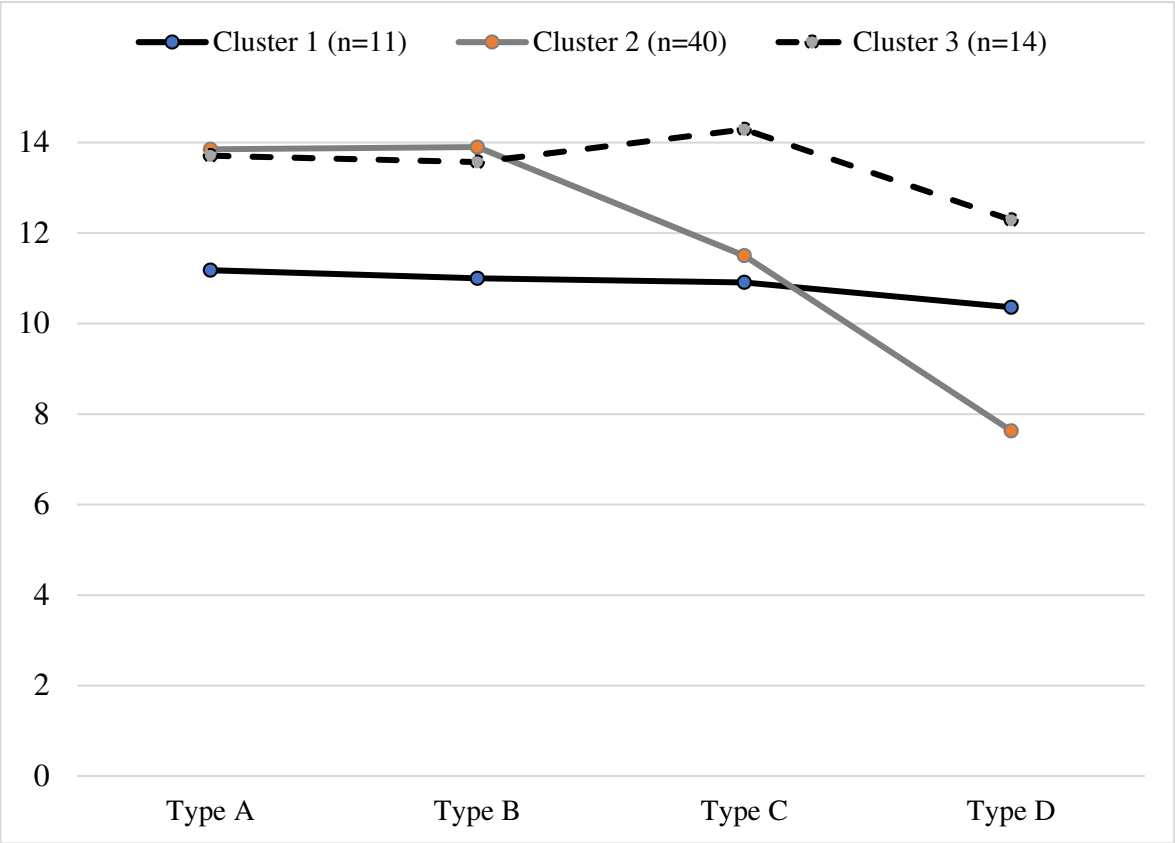


Figure 16 Results of Cluster Analysis by Types

Table 33 *Results of Two- way Mixed ANOVA (Clusters x Types)*

Source	*SS*	*df*	*MS*	*F*-ratio	*p*-value	partial η^2
A (Cluster)	188.9	2	94.45	27.99	.000***	.47
s x A	209.2	62	3.37			
B (Types)	250.38	2.35	106.47	29.07	.000***	.32
s x B	533.96	145.81	3.66			
Interaction (A x B)	291.08	4.70	61.88	16.90	.000***	.35

Table 34 *Between-Cluster Comparisons of Type A to D*

Type	Pair	Differences in mean scores	*SE*	*p* -value
A	Cluster 1 < Cluster 2***	-2.67	0.42	.000
	Cluster 1 < Cluster 3***	-2.53	0.5	.000
	Cluster 2 = Cluster 3	0.14	0.39	.73
B	Cluster 1 < Cluster 2***	-2.9	0.58	.000
	Cluster 1 < Cluster 3***	-2.57	0.69	.000
	Cluster 2 = Cluster 3	0.33	0.53	.54
C	Cluster 1 = Cluster 2	-0.59	0.45	.000
	Cluster 1 < Cluster 3***	-3.38	0.54	.000
	Cluster 2 < Cluster 3***	-2.79	0.41	.20
D	Cluster 1 > Cluster 2***	2.74	0.82	.000
	Cluster 1 = Cluster 3	-1.92	0.97	.05
	Cluster 2 < Cluster 3***	-4.66	0.75	.000

Table 35 *Between-Type Comparisons of Cluster 1, Cluster 2 and Cluster 3*

Cluster	Pair	Differences in mean scores	SE	*p* -value
Cluster 1	Type A > Type D	0.18	.88	1.00
	Type B > Type D	0.64	.73	1.00
	Type C > Type D	0.55	.84	1.00
	Type A > Type C	0.27	.53	1.00
	Type B > Type C	0.09	.67	1.00
	Type A =Type B	1.82	.63	1.00
Cluster 2	Type A > Type D***	6.23	.46	.001
	Type B > Type D***	6.28	.38	.001
	Type C > Type D***	3.88	.44	.001
	Type A > Type C***	2.35	.28	.001
	Type B > Type C***	2.40	.35	.001
	Type A =Type B	-0.05	.33	.80
Cluster 3	Type A = Type D	1.43	.46	.13
	Type B > Type D**	1.29	.38	.03
	Type C > Type D*	2.00	.44	.01
	Type A = Type C	-0.57	.28	.41
	Type B = Type C	-0.71	.60	.41
	Type A =Type B	0.14	.56	.79

5.6 Pedagogical Implications for Teachers.

Based on the findings discussed in Study 1, the following points are suggested to English teachers. First, when introducing English verbs to students as new vocabulary, teachers should highlight how the verbs are syntactically and semantically used, that is, whether they are transitive, intransitive, or double used verbs, rather than emphasizing their Japanese translations. Moreover, teachers should teach verb usages by demonstrating some example sentences with both [+animate] and [-animate] subject nouns. What it is emphasized here is that only teaching the Japanese translation of verbs is insufficient.

Second, teachers need to know that JLEs have more difficulty acquiring the grammatical usages of intransitives than those of transitives. Hence, teachers should emphasize the usage of intransitive with ergative verbs more than that of transitive when they teach ergative verbs to JLEs during English lessons.

Third, teachers should be aware that when JLEs with a low English proficiency interpret an ergative verb structure, they are influenced by the lexical-semantic information of subject nouns, that is, animacy. Thus, teachers need to know that JLEs have more difficulty in interpreting sentences with [-animate] subject nouns than those with [+animate] subject nouns. In particular, teachers should be careful in dealing with intransitive usages with [-animate] subject nouns. Therefore, when they introduce ergative verbs as vocabulary, they should teach students that both [+animate] and [-animate] subjects can be subjects of intransitive sentences by showing example sentences. This study suggests that [-animate] subject nouns belonging to Category 6 (i.e., substances or materials nouns) should be used in example sentences since JLEs tend to have difficulty judging intransitive usages with inanimate subject nouns on Category 6 correctly.

Fourth, teachers should be aware that JLEs tend to prefer passive forms to active forms in Type D (Intransitive usages and [-animate] subject nouns). In particular, the more the animacy of [-animate] subject nouns is far from animate and close to inanimate (i.e., Category 6), the more JLEs tend to reject the grammatical active sentences and revise them into passive sentences. In other words, teachers should know that the animacy of [-animate] subject nouns play an important role in the overuse of passive sentences in intransitive usages.

Finally, it is crucial for teachers to know that the transitive structure, "Subject ([+animate noun]) + Vt + Object ([±animate noun])," is the most common structure in human

languages and, thus, it is easy for language learners to interpret and acquire. In contrast, the intransitive structure, "Subject ([-animate noun]) + Vi," is less easy for language learners to interpret and acquire. Moreover, teachers should know that the "subject is Agent" strategy strongly influences L2 acquisition of ergative verbs, particularly for elementary learners. When they interpret sentence structures, they tend to regard the thematic role of subjects as the Agent, regardless of transitive or intransitive usages. Thus, teachers should provide metalinguistic information about the difference of thematic roles between transitive and intransitive sentences with ergative verbs.

5.7 Summary

Study 1 has attempted to examine how JLEs acquire English ergative verb structures by testing two research predictions to clarify the major factor for JLEs to acquire English ergative verb usages: L1 syntactic transfer or semantic properties of subject nouns. Again, the two predictions shown in (52) are presented in (62).

(62) Research Predictions:

a. Prediction 1: Influence from L1

If the properties of Japanese (L1) ergative verbs successfully map their English (L2) equivalents, JLEs will have little difficulty in understanding English ergative verb usages. Thus, both transitive and intransitive usages of these verbs will be equally attainable for JLEs.

b. Prediction 2: Influence from animacy on subject nouns

If animacy of the subject influences JLEs' acceptability of the grammaticality in English ergative verb sentences, they will judge that a sentence with an animate subject is grammatical, which results in a correct judgement. On the other hand, they will judge that a sentence with an inanimate subject is ungrammatical, which results in a wrong judgement. Thus, sentences with [+animate] subject nouns are easier for JLEs to correctly judge grammaticality than those with [-animate] subject nouns.

Prediction 1, shown in (62) (the influence of L1), is not supported, though Prediction 2, shown in (62) (the influence of animacy on subject nouns), is supported. That is, the results

showed that JLEs were not much affected by L1 syntactic transfer and, thus, they have more difficulty in correctly judging the grammaticality of intransitive usages than that of transitive usages. Instead, they were much affected by the Agent First principle since the results showed that animacy of sentential subjects can be the most influential factor in the acquisition of ergative verbs. In particular, JLEs have difficulty interpreting syntactic structures with [-animate] subject nouns correctly. Additionally, the animacy of subject nouns in intransitive usages influences JLE's interpretation of ergative verb usages. Hence, it was found that sentences with [-animate] subject nouns in intransitive usages were the most difficult type to interpret among the four types of ergative verb structures.

In order to discover the reason for the difficulty of interpretation of intransitive usages, the data were further analyzed in detail. The results by four types reveal that no difference was found between sentences with [+animate] subject nouns and those with [-animate] subject nouns in transitive usages, whereas a statistical significance was observed between [+animate] subject nouns and those with [-animate] subject nouns in intransitive usages. The interpretation of so-called Type D sentences ([+Intransitive] and [-animate subjects]) was the most difficult among the four types. Influence by learners' proficiency was observed in Elementary and Intermediate Groups in the context of the interpretation of four types of sentences.

We then attempted to clarify why Type D ([+Intransitive] and [-animate subjects]) was the most difficult type among the four ergative verb structures. Based on the error analysis of Type D sentences, it was found that JLEs tend to revise these into passive sentences, and this tendency has been strongly observed in Elementary groups. If L1 transfer functions, Type D sentences should not be difficult for JLEs since Japanese intransitive sentences allow intransitive subject nouns. Hence, it is presumed that low-proficiency JLEs tend to use the Agent First principle rather than L1 syntactic transfer so that the thematic role of subject nouns tends to be regarded as the Agent in intransitive usages, even if they are the Theme or Patient. Thus, by revising the intransitive sentences into passives, JLEs may seek animate nouns outside of the sentences in order to induce verb actions. Therefore, it is concluded that the properties of animacy in subject nouns could be the influential factor affecting the variation of L2 acquisition in Type D.

Moreover, we analyzed the data through individual verb results in each Type. Obvious significant differences were observed in Type D sentences by comparing the individual verb

results with other types of sentences. Thus, it can be claimed that there are lexical-semantic differences of inanimacy on subject nouns in intransitive usages. Some of them behave similarly to animate nouns such as abstract nouns (i.e., Category 1), while others are real inanimate nouns such as substantial nouns (i.e., Category 6). In particular, elementary learners tend to reject inanimate nouns in Category 6. Therefore, JLEs, especially elementary learners, might think that the thematic role of subject nouns is the Agent in intransitive usages due to the Agent First principle, and expect the subject nouns to induce the verb action, which is most likely to be possible for animate nouns. Thus, they tend to reject the intransitive sentences with those inanimate subject nouns in Category 6 by following the degree of animacy.

These discussions are further supported by the analysis of individual learners. One third of the participants could correctly answer Types A, B, and C, but not Type D. The crucial finding in the analysis of individual learners is that no JLEs interpret Type D correctly, which does not occur regarding Types A, B, and C. Thus, the difficulty order assumed in Study 1 in Type D is the highest, followed by Type C, while the easiest are Types A and B. Furthermore, the proficiency level is related to the degree of correct interpretation for Type D sentences. These are the answers for the first purpose of this dissertation.

These results support the assertion that L2 learners, particularly elementary learners, tend to follow the "the Agent First principle," which is one of the fundamental properties in human language. The application of this principle can be carried out even before applying the strategy of L1 transfer in L2 acquisition. The more the proficiency level increases, the more the influence of this principle will decrease. Hence, promoting learners' proficiency levels may lead L2 learners to correctly understand the thematic roles of subject nouns in transitive and intransitive usages in L2. Therefore, it can be concluded that the animacy of subject nouns, rather than the individual verb differences or L1 transfer, remarkably affect the acquisition of ergative verb structures for JLEs in accordance with their proficiency levels. These are the answers for the second purpose of this dissertation.

However, it should be noted that the cluster analysis of the results of individual learners showed that there were some participants who did not rely on the animacy of subject nouns, and that no statistically significant difference was observed among types. Hence, it is further necessary to identify other factors that affect the L2 acquisition of ergative verb structures, such as learner factors.

In order to promote the validity of the findings of Study 1, the following issues should be considered. First, since the English proficiency of the participants in this study was not very high, it is questionable how JLEs with a high proficiency would judge the test sentences used in the study. Second, the researchers should conduct another set of GJT for Type D sentences. By exchanging the original [-animate] subject nouns used in this study with different [-animate] ones for intransitive sentences with individual ergative verbs, the researcher should observe whether a different difficulty order of ergative verbs will be available. It is assumed that the difficulty order of ergative verbs will be changed if the animacy of [-animate] subject nouns are also changed.

These discussions from Study 1 can be summarized as (a) JLEs seem to have difficulty in interpreting intransitive usages in comparison with transitive ones, and (b) they seem to be affected by the Agent First principle. Thus, the animacy of subject nouns influences the interpretation of ergative verb structures, particularly intransitive usages. Therefore, by paying attention to these findings in Study 1, the provision of metalinguistic knowledge for ergative verb structures can be effective in improving JLEs' interpretation. The next chapter investigates the effect of explicit instructions for ergative verb structures.

Chapter 6

Study 2: Longitudinal Study on Explicit Instruction on Ergative Verb Structures

6.1 Introduction

This chapter focuses on Study 2 and investigates the long-term effect of explicit grammar instruction based on results and discussions from Study 1 on L2 acquisition of English ergative verb structures, and the theoretical backgrounds of explicit grammar instruction discussed in Chapter 4. The purpose of Study 2, as noted in Chapter 1, is again presented in (63).

(63) Purpose of Study 2

To present the effective English grammar instruction method for JLE acquisition of English verb transitivity and intransitivity in L2 classrooms in Japan.

To achieve this purpose, explicit grammar instruction was conducted in an L2 English classroom at a Japanese university, and the effect was analyzed via the results of a series of GJTs. This chapter is organized as follows. After the introduction, the research predictions are presented in 6.2, and information on the JLEs as participants is introduced in 6.3. The contents and procedures for the explicit grammar instruction sessions and GJTs are described in detail in 6.4. In 6.5, the experiment results and discussions are presented. Based on the discussion, 6.6 provides the summary of Study 2.

6.2 Research Predictions

The research predictions are shown in (64):

(64) Research predictions

a. explicit instruction should be effective and JLEs should improve the degree to which they comprehend ergative verb usages
b. the effect will last for at least thirteen weeks after the series of instruction sessions

Based on the results from sixteen kinds of experiments on explicit instruction conducted by Shirahata (2015), there are two perspectives from which I can support my assumption that this instruction should be effective with experiment participants: (a) grammatical items and (b) learner factors.

(a) Grammatical items. Presented in (65) are the four points that explain the efficacy of explicit instruction in terms of grammatical items.

(65) Explicit instruction is effective on grammatical items that:

a. have simple internal rules
b. mainly convey simple lexical meanings
c. have concepts and/or grammatical structures similar to those found in the learner's L1
d. have not been sufficiently taught up to the high school level

(Adapted from Shirahata, 2015, p.182)

First, Shirahata (2015) presumes that the effect of explicit instruction can be affected by the complexity of the grammatical items' sub-rules as shown in (65a). Simple sub-rules do not appear to create acquisition difficulties (e.g. countable nouns), whereas complex sub-rules increase acquisition difficultly (e.g. uncountable nouns). For this experiment, all L2 learners needed to know about English ergative verb usages is that they have a DP (subject) - Verb-DP (object) structure for transitive usages and a DP (subject) - Verb structure for intransitive usages. Hence, one can say that the English grammatical rules for ergative verb usages are simple compared to those of articles or the plural markers for nouns. Therefore, once JLEs are taught and learn to notice, they will be able to adopt the grammatical rules for ergative verb usages as their grammatical knowledge and decrease the number of grammatical errors.

Second, as shown in (65b), Shirahata (2015) assumes that explicit instruction should work well for items that convey lexical or semantic meanings (e.g. usages of conjunctions, vocabulary learning) because L2 learners need only memorize the contexts (i.e. meanings of words) that teachers provide through instructions. On the other hand, explicit instruction would not be effective for grammatical items that convey only grammatical functions like

grammatical morphemes (e.g. third person singular - *s*). Hence, if this assumption proposed by Shirahata (2015) is valid, explicit instruction for ergative verb usages can be effective because these usages are related to conveying lexical or semantic meanings such as instruction for thematic roles and semantic properties of sentential subjects.

Third, with regards to L1 transfer shown in (65c), Shirahata (2015) hypothesizes that explicit instruction would not be effective for some grammatical items that do not share similar linguistic concepts with the learners' L1 (e.g. plural markers for nouns, third person singular – *s* for Japanese). By contrast, when the linguistic concepts similar to L1 are available in L2, the comprehension of the concepts can be enhanced using the L1 knowledge (e.g. the comparative degree using – *er* for Japanese). In this experiment, since the ergative verb usages also exist in L1 Japanese (e.g., transitive usage: *Taro-ga doa-o ake-ta*; intransitive usage: *Doa-ga ai-ta*), by contrasting the L1 knowledge to corresponding grammatical items or features, the JLEs will be able to interpret English ergative verb usages.

Finally, as presented in (65d), learning experiences or previous knowledge can play a crucial role in the efficacy of explicit instruction. Some grammatical items are easy for learners to grasp since they have received sufficient instruction on them up to the high school level. According to the questionnaire conducted by Shirahata (2015), 22 out of 25 university JLEs (88%) did not know about double-use verbs (ergative verbs). Hence, one can argue that many university JLEs had limited learning experiences with transitive and intransitive verb usages up to high school. To summarize, I would like to verify that the aforementioned claims on the effectiveness of explicit instruction are valid.

(b) Learner factors. In (66), two points are highlighted to explain the efficacy of explicit instruction in terms of learner factors:

(66) Explicit instruction is effective for L2 learners who:

a. have good cognitive and/or analytical abilities to understand the instructor' grammatical explanations

b. are proficient enough in English to understand the target language's grammatical rules

(Adapted from Shirahata, 2015, p.182)

First, as shown in (66a), in foreign language classroom settings, the degree to which L2 learners can comprehend the teacher's explanation is important. Therefore, the learners need high cognitive analytical abilities to understand the teachers' explanations without difficulty (Shirahata, 2015). In this experiment, the participants' cognitive analytical abilities were sufficient enough to understand the researchers' metalinguistic explanations through explicit instruction.

Second, as shown in (66b), Shirahata (2015) hypothesizes that the effect of explicit instruction is closely related to the learners' L2 proficiencies. The strategy to understand one grammatical item in L2 is for the learner to relate that grammatical item to others. Therefore, L2 learners are required to know as many grammatical rules as possible. Hence, when L2 learners are more proficient in English (i.e. they know many grammatical rules in L2), the explicit instruction is observed to be more effective. This factor should apply to our participants because they are university undergraduates who had studied English for a minimum of six years at the school level and are expected to possess a certain level of English proficiency. To summarize, I would like to verify that the aforementioned claims on the effectiveness of explicit instruction are valid.

6.3 Participants

The Experimental Group was comprised of a total of 70 adult JLE participants. All learners were Japanese university freshmen from two general English classes (39 JLEs and 31 JLEs) who had studied English for a minimum of six years in school. Their majors included education, human science, science, and agriculture. However, 25 JLEs were excluded from the data analysis because they were absent from at least one of explicit instruction session or a GJT. Therefore, data for 45 participants (25 JLEs and 20 JLEs) were analyzed from the Experimental Group. There was also a Control Group of 27 adult JLEs from another university in Japan, all of whom were freshmen majoring in school education.

The English proficiency levels of the Experimental Group were between elementary and upper intermediate as determined by the results of the *OQPT* (*Part 1*) (2001) (Mean scores: 25.53 out of 40; *SD*: 4.73). The English proficiency levels of the Control Group were also found to be between elementary and upper intermediate (Mean scores: 25.31 out of 40; *SD*: 3.33). Results of the *t*-test showed that the OQPT mean scores for both groups were not statistically significant (t (70) = 0.01; p = .96; d = .01). This result indicates that the English

proficiency levels for both groups were almost the same and the results of the Experimental Group can be compared to those of the Control Group. The OQPT results are presented in Table 36.

Moreover, to compare the results between JLEs with high English proficiency and those with low English proficiency, the participants in the Experimental Group were divided into two groups: Elementary and Intermediate. The Elementary Group was comprised of 14 JLEs whose OQPT scores were between 16 to 23 (*M*: 19.86, *SD*: 2.28). The Intermediate Group was comprised of 11 JLEs whose OQPT scores were between 30 to 40 (*M:* 31.27, *SD*: 2.07). The researcher excluded 20 JLEs whose OQPT scores were between 24 to 29. Since the average OQPT scores for the Elementary Group and the Intermediate Group were statistically different (t (23) =12.96, p <.001, d = 5.22), they can be regarded as different English proficiency groups. The results from both groups' OQPT are presented in Table 37.

Table 36 *OQPT Results*

Group	*M*	*SD*	*Max*	*Min*
Experimental	25.53	4.73	37	16
Control	25.31	3.33	34	18

Note: The maximum score for the OQPT (Part 1) is 40.

Table 37 *Background of the Two Participant Groups in the Experimental Group*

Group	OQPT score	*n*	*M*	*SD*	*Max*	*Min*
Elementary	16 - 23	14	19.86	2.28	16	23
Intermediate	30 – 40	11	31.27	2.05	30	37

6.4 Materials and Procedures

6.4.1 Outline of the Experiment

Three GJTs were administered: Pre-test, Post-test 1 and Post-test 2. The Experimental Group completed all three tests. After the Pre-test, only the Experimental Group received explicit instruction, one session per week for three consecutive weeks (Week 1 to Week 3). A week after the third session, they took Post-test 1 (Week 4), and twelve weeks after that, they took Post-test 2 (Week 16).

On the other hand, participants in the Control Group did not receive any explicit instruction on the usage of ergative verbs and completed only the Pre-test (Week 1) and Post-test 2 (Week 8), which was taken seven weeks after the Pre-test. During this research period, they took part in normal English lessons at the university. The experiment outline is presented in Table 38.

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Table 38 *Experiment Outline*

	Experimental Group	Control Group
Week 1	Pre-test & 1st teaching session (25 minutes)	Pre-test
Week 2	2nd teaching session (25 minutes)	
Week 3	3rd teaching session (25 minutes)	
Week 4	Post-test 1	
Week 5		
Week 6		
Week 7		
Week 8		Post-test 2
Week 9		
Week 10		
Week 11		
Week 12		
Week 13		
Week 14		
Week 15		
Week 16	Post-test 2	

6.4.2 Ergative Verbs Tested.

Nine ergative verbs were selected as target verbs based on the results from Study 1 (see also Otaki & Shirahata, 2017), in which participants had difficulty in judging the grammaticality of Type D sentences ([+intransitive, -animate]) with these verbs. These learners were taught throughout a series of explicit instruction sessions and tested using GJTs. Five transitive verbs, six unaccusative verbs, two unergative verbs, and four ergative verbs were also used as distractors in the GJTs. The verbs used are presented in (67).

(67) Verbs tested in this experiment.

Ergative verbs (target verbs): *burn, close, drop, dry, grow, open, roll, start, stop, separate*

Transitive verbs (distractors): *accept, bring, damage, destroy, introduce*

Unaccusative verbs (distractors): *appear, arrive, come, fall, remain, stand*

Unergative verbs (distractors): *laugh, listen*

Ergative verbs (distractors): *break, match, spread, turn*

6.4.3 Explicit Instruction Provided in This Study.

6.4.3.1 Outline of explicit instruction. The explicit instruction sessions were conducted from two main perspectives: syntactic and semantic. From the syntactic perspective, the researcher provided instructions to enhance the participants' notice of syntactic structures of ergative verb usages in English. In other words, the researcher provided the participants with knowledge on ergative verb structures in English, which can be used in both transitive (DP-V-DP structure) and intransitive usages (DP-V structure). The researcher also emphasized Japanese sentences that corresponded with both usages, since Japanese has both transitive and intransitive usages as well.

From the semantic perspective, the researcher provided instructions that allowed participants to notice the lexical semantic characteristics of the subject nouns. More precisely, the participants learned that in English, both animate and inanimate DPs could become the sentential subjects of both transitive and intransitive usages in ergative structures.

Certain procedures for the Experimental Group's explicit instruction were noted. The researcher, as an instructor, administrated the three teaching sessions during the two respective general English classes. Each session lasted approximately 25 minutes. The

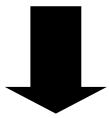
contents of each teaching session were different: verb transitivity and verb subcategorization for the first session; syntactic structures of ergative verbs for the second session; and lexical-semantic features of subject nouns for the third session.

During each session, the explicit instruction consisted of both deductive and inductive instruction. For the deductive instruction, the researcher used several example sentences to explain the grammatical rules or rules related to the subject nouns (i.e. animacy). For the inductive instruction, the researcher paired participants for grammar consciousness-raising tasks or structure-based production exercises (Ellis, 2010) so they could notice the grammatical rules explained by the researcher. The explicit instruction overview is presented in Figure 17.

The explanations and example sentences were presented using materials such as computer presentation software (PowerPoint), worksheets, and English sentence cards. Worksheets were given to all participants, while English sentence cards were given to each pair.

1st teaching session		
Time		About 25 minutes
Contents		Verb transitivity and subcategorization of verbs
Types of instruction	Deductive	Metalinguistic explanation
	Inductive	Grammar consciousness-raising task

2nd teaching session		
Time		About 25 minutes
Contents		Syntactic structure of ergative verbs
Types of instruction	Deductive	Metalinguistic explanation
	Inductive	Production-based practice exercise



3rd teaching session		
Time		About 25 minutes
Contents		Lexical-semantic features of subject nouns
Types of instruction	Deductive	Metalinguistic explanation
	Inductive	Grammar consciousness-raising task

Figure 17. Overview of explicit instruction adopted for this experiment

6.4.3.2 The first session. The first teaching session was conducted so that JLEs could notice the verb classifications based on the distinction of the verbs' transitivity. Extracts from the PowerPoint slides (hereafter Slide) used in the first session are presented in Table 39, and worksheets provided are presented in Table 40, Table 41 and Table 42 (all materials used in the first session can be found in Appendicies E & F).

Three steps were attempted during the first session. First, I provided the participants with the definitions for both transitive and intransitive usages. The rules were provided without example sentences (Slide 1 in Table 39). For the grammar consciousness-raising task, each pair received a set of example English sentences. They were asked to work together to separate the cards based on their respective usages (transitive and intransitive) (Slide 2). The nineteen English sentences cards included sentences with transitive verbs, intransitive verbs, and double-use verbs (ergative verbs) as shown in Slide 3. By working in pairs, participants noticed that verbs could be categorized into not only transitive and intransitive, but also double-use verbs.

Second, the researcher explained to the participants that verbs can be used transitively, intransitively, or both ways (Slide 4, Table 39). As presented in Slide 5 (see Table 39), when explaining each usage (transitive, intransitive, double-use), participants were shown examples of both grammatical and ungrammatical sentences, along with the corresponding Japanese sentences to promote the awareness for noticing towards Japanese grammar.

For the grammar consciousness-raising task, participants were paired and asked to categorize verbs on the English sentence cards into transitive, intransitive, and double-use verbs (ergative verbs). Finally, the researcher presented many example sentences with verbs used transitively, intransitively or both ways, using computer presentation software (PowerPoint) (Slide 6, Table 39) as well as worksheets (see Table 40, Table 41 & Table 42).

Table 39 *Extracts from PowerPoint Materials Presented at the First Session, Part 1*

Slide 1

他動詞と自動詞

他動詞と**自動詞**の違いとは何でしょうか？

Slide 2

ペアワーク

ビニール袋の中にある例文カードにある各動詞を、他動詞・自動詞に分類してみましょう！

Slide 3

使用した例文カードの例

自動詞(非対格動詞)の例

The snow was **falling**.

他動詞の例

Yuko **accepted** the present.

自他両用動詞(能格動詞)の自動詞用法の例

The big rock **rolled** slowly

自他両用動詞(能格動詞)の他動詞用法の例

Tom **rolled** a ball

Slide 4

自動詞・他動詞の区別に基づく動詞の分類

1．主に他動詞用法として使われる
2．主に自動詞用法として使われる
3．他動詞・自動詞用法両方に使われる

Slide 5

2. 主に**自動詞**用法として使われる

正しい文：Ann **arrive** at the airport by taxi.
(アンはタクシーで空港に着いた)

非文：*Ann arrived the airport by taxi.
（アンはタクシーで空港を着いた？）

（↑arriveは後ろに目的語をとることができないため非文です）

Slide 6

burn （～を燃やす・燃える）

他動詞用法　The strange man **burned** newspapers at the park.
(見知らぬ男が公園で新聞紙**を燃やした**)

自動詞用法　Dry paper **burn** easily.
(乾いた紙は簡単に**燃える**)

Table 40 *Extracts from Worksheets Provided at the First Session, Part 1*

（第 1 回目　配布資料　抜粋 1）

①　他動詞と自動詞とは何でしょうか？　下記の答えに書きましょう
【他動詞】（答え：　　）
【自動詞】（答え：　　）

②　自動詞・他動詞にもとづく動詞の分類は１～３の用に分類することができます。
1. 主に他動詞用法として使われる
2. 主に自動詞用法として使われる
3. 他動詞・自動詞用法両方に使われる

１～３の例文を見てみましょう

1. 主に他動詞用法として使われる
他動詞用法の正しい文：　The army destroyed the town.（軍隊が街を壊した）
他動詞用法の非文：*The town destroyed.（街が壊した）（The town was destroyed）
（↑destroy の後ろに目的語がないため非文です）

2. 主に自動詞用法として使われる
自動詞用法の正しい文：Ann arrive at the airport by taxi.
（アンはタクシーで空港に着いた）
自動詞用法の非文：*Ann arrived the airport by taxi.
（アンはタクシーで空港を着いた？）
（↑arrive は後ろに目的語をとることができないため非文です）

３．他動詞・自動詞用法両方に使われる自他両用動詞（能格動詞）を用いた文
他動詞用法：Mary opened the window.（メアリーは窓を開けた）
自動詞用法：The can opened easily.　（缶が簡単に開いた）

Table 41 *Extracts from Worksheets Provided at the First Session, Part 2*

（第 1 回目　配布資料　抜粋 2）

③　主に他動詞用法で使われる動詞・主に自動詞用法で使われる動詞・自動詞と他動詞用法で使われる動詞の例と例文をみてみましょう。同時に日本語訳もみてみましょう。

1. 主に他動詞用法として使われる

（文の構造）主語　＋　**動詞**　＋　目的語

主に他動詞として使われる動詞：destroy, bring, introduce, hate, respect, use, know など

accept (～を受け入れる)：Hanako **accepted** a job offer.
(ハナコは仕事のオファー**を受けれた**)
*Yuko **accepted**.
（ユウコが受け入れた？（何を？））

destroy　(～を壊す)　：The army **destroyed** the town. (軍隊が街を壊した)
*The town **destroyed**. (街が壊した？)
(The town was destroyed は Ok)

bring　(～をもたらす)：Tom **brought** some flowers to me.
(トムは私に花**を持ってきた**)
*John **brought** kindly to my house.
(ジョンは親切に家に持ってきた（何を？）)

2. 主に自動詞用法として使われる

(文の構造)：　主語　＋　**動詞**

主に自動詞として使われる動詞：　*appear, arrive, come, die, fall, occur, stand, cough, dive, depend, laugh, listen*

appear (現れる)：The stars **appeared**. (星が**現われた**)
*The polar bear **appeared** the water pool.
(ホッキョクグマがプールを現れた？)

arrive（着く）：The train **arrived** at the station. (電車が駅に**着いた**)
*Ann **arrived** the airport by taxi. (アンはタクシーで空港を着いた？)

Table 42 *Extracts from Worksheets Provided at the First Session, Part 3*

（第 1 回目　配布資料　抜粋 3）

2. 主に自動詞用法として使われる

laugh　(笑う)：John **laughed** at a funny story. (John は面白い話で**笑った**)
*John **laughed** a funny story.　（John は面白い話を笑った？）

listen　（聴く）：Tom **listened** to the radio.　（Tom はラジオを**聴いた**）
*Tom **listened** the radio.　（Tom はラジオを聴いた）

3. 他動詞・自動詞用法両方に使われる

(文の構造)　**他動詞**用法：　主語　＋　動詞　＋　目的語
自動詞用法：　主語　＋　動詞

自動詞他動詞の両方で使われる動詞：　*burn, close, drop, dry, grow, open, roll, separate, start*

burn　（～を燃やす・燃える）：他動詞用法　The strange man **burned** newspapers at the park.
(見知らぬ男が公園で新聞紙**を燃やした**)
自動詞用法　Dry paper **burn** easily.
(乾いた紙は簡単に**燃える**)

close（～を閉める・閉まる）：　他動詞用法　Ann **closed** the windows.
（Ann は窓**を閉めた**）
自動詞用法　The supermarket **closes** at 9 p.m.
(スーパーは午後 9 時に**閉まる**)

drop（～を落とす・落ちる）：他動詞用法　Ann **dropped** her computer.
(Ann はコンピューター**を落とした**)
自動詞用法　Many apples **dropped** during the night.
（夜の間に、沢山のリンゴが**落ちた**）

6.4.3.3 The second session. The purpose of the second teaching session was to encourage the JLEs to interpret the syntactic structure of ergative verbs. Extracts from the PowerPoint slides used in the second teaching session are presented in Table 43 and the worksheets provided are presented in Table 44 (all materials used in the second session can be found in Appendices E & F).

First, participants were asked to pair up for a structure-based production exercise so they could notice how Japanese verbs that correspond with English ergative verbs also have both transitive and intransitive uses. For this exercise, learners orally produced English sentences with ergative verbs by translating them from Japanese. For example, in each pair, Participant A would read the context sentences and Japanese sentences with ergative verbs written on the worksheet, and Participant B would translate the Japanese sentences into English. Participant A then confirmed whether the English sentences translated by Participant B were grammatically correct. It should be noted that the subject nouns were already placed in the individual English sentences, so Participant B was required to place the verbs and object nouns, if necessary. Participants switched roles after each participant completed an exercise for one ergative verb (one transitive usage and one intransitive usage). A total of eighteen English sentences with nine ergative verbs (nine transitive usages and nine intransitive usages) were used in this exercise, an example of which is presented in (6) (see Slide 7, Table 43).

(68) An example of transitive usages for the oral-production exercise:

[Participant A]
Context sentences: 今日は、昼間は暖かかったのですが、夜になって急に寒くなってきました。そこで
（Today was warm at day time, but it was getting cold at night. Then,）
Japanese: 「太郎は窓を閉めました。」(Taro closed the window)
[Participant B]
Answer: Taro [(Answer: close the window)]

As shown in Slide 8, Table 43, after the exercise, the researcher provided the metalinguistic explanations, highlighting that the Japanese verbs that corresponded with the

English ergative verbs also have both transitive and intransitive usages (Slide 9). The example sentences used in the explanation are shown in Slide 10, Table 43 and Table 44 (all materials can be found in Appendices E & F).

The researcher also emphasized that JLEs had difficulty in judging the grammaticality of intransitive usages, even though Japanese verbs use both. For example, JLEs tended to judge "*The can opened easily*" as ungrammatical and revised it to "*The can was opened easily* (*by someone*)," even though Japanese also has intransitive usages such as "*Kan-ga kantanni aita* (= *The can opened easily*)." (cf. Otaki & Shirahata, 2017). See Slide 11.

Table 43 *Extracts from PowerPoint Materials Presented at the Second Session*

Slide 7

ペアワーク ☺

1.【Aさんが読む】
【状況・場面】 私の家の隣に住むJohnは、大変なことをしてしまいました。
【日本語】 Johnは家を燃やしました。
【答え】 **Bさん: John (答え : burned the house).**

英文は、Bさんが答えます

Slide 8

練習問題にでてきた動詞
burn, close, drop, dry, grow, open roll, separate, start

すべて「自他両用動詞（能格動詞）」です。

自動詞用法・他動詞用法、どちらの用法でも使われます。

自他両用動詞の文の構造： **他動詞**用法： 主語 ＋ 動詞 ＋ 目的語
自動詞用法： 主語 ＋ 動詞

Slide 9

日本語を活用しましょう！

英語の自他両用動詞を日本語で考えてみましょう
↓
日本語にも英語に対応する自動詞・他動詞用法があります

Slide 10

動詞 burn (～を燃やす・燃える)

他動詞用法「～を燃やす」/ 自動詞用法「燃える」

他動詞用法 構造：主語＋動詞＋目的語
英語：The strange man **burned** newspapers at the park.
日本語：見知らぬ男が公園で新聞紙**を燃やした**

自動詞用法 構造：主語＋動詞
英語：Dry paper **burn** easily.
日本語：乾いた紙は簡単に**燃える**

Slide 11

注意！

The can opened easily.
↓
この文は「**文法的に誤り**」で、
The can was opened easily. が正しいと答える人がとても多いです。

The can opened easily. / The can was opened easilyの両方とも
自動詞用法も、受動態の文も「**文法的に正しい**」ので、ご注意！

Table 44 *Extracts from Worksheets Provided at the Second Teaching Session*

動詞　burn（～を燃やす・燃える）
他動詞用法「～を燃やす」/　自動詞用法「燃える」
他動詞用法　構造：主語＋動詞＋目的語
英語：The strange man burned newspapers at the park.
日本語：見知らぬ男が公園で新聞紙を燃やした
自動詞用法　構造：主語＋動詞
英語：Dry paper burn easily.
日本語：乾いた紙は簡単に燃える

6.4.3.5 The third session. The purpose of the third teaching session was to prompt the participants' awareness of the lexical-semantic properties of subject nouns in sentences with ergative verbs. Extracts from the PowerPoint slides used in the third teaching session are presented in Table 45 and Table 46 (all materials for the third session can be found in the Appendices E & F).

First, participants paired up for a grammar consciousness-raising task to allow them to notice the properties of the thematic roles played by subject nouns in intransitive usages of ergative verbs (unaccusative verbs) (i.e. Theme or Patient). The participants were asked to draw pictures to illustrate the situation described in the English sentences presented on the worksheet. Participant A drew pictures to express the English intransitive sentences with unergative verbs whose subject noun's thematic role was Agent, whereas Participant B drew pictures to express the English intransitive sentences with unaccusative verbs whose subject noun's thematic role was Theme or Patient.

Next, each pair compared pictures so that they could visually notice the differences between these thematic roles (Slide 12,Table 45). They were able to understand that the subject nouns in sentences with unergative verbs (Agent) caused the action (Slide 13, Table 45), whereas the subject nouns in intransitive usages with unaccusative verbs (Theme or Patient) did not cause the action, and instead were the recipients (Slide 14, Table 45). When the task ended, the researcher explained that subject nouns in intransitive usages with ergative verbs (e.g. "*The can*" in "*The can opened easily*") play the same role as those with unaccusative verbs (i.e. Theme or Patient). The sentences used in the task are presented in (69).

(69) Intransitive sentences used at grammar consciousness-raising task (picture-drawing task)

(Unaccusative verbs, a thematic-role: Theme or Patient)

a. The snow was falling.

b. The train arrived at the airport.

(Unergative verbs, a thematic-role: Agent)

c. Taro laughed at Mr. Tanaka's joke.

d. Ann listened to the music.

Next, the researcher asked the participants to pay attention to the animacy of the subject nouns, i.e. animate and inanimate nouns (Slide 15, Table 45). First, the participant pairs were asked to separate the four subject nouns from the four example sentences with ergative verbs (Type A, B, C, and D) into two categories based on the rule the participants themselves made. There were two animate subjects and two inanimate subjects in four types of sentences. The researcher then explained that subject nouns can be divided into two categories in terms of animacy: animate or inanimate (Slide 16, Table 45).

After the exercise, the researcher provided a worksheet containing eighteen English sentences with nine ergative verbs (nine transitive usages and nine intransitive usages). The participant pairs were asked to separate the subject nouns from the English sentences into animate and inanimate nouns, and then discuss with each other any points they may have realized (Slide 17, Table 45). I concluded by explaining that both animate and inanimate nouns can become the subjects of both transitive and intransitive usages (Slide 18 & 19, Table 46). In particular, it was emphasized that intransitive usages with inanimate nouns (e.g. *The can opened easily*) tended to be judged as ungrammatical when in fact they are grammatical (Slide 20, Table 46).

Table 45 *Extracts from PowerPoint Materials Presented at the Third Session, Part 1*

Slide 12

ペアワーク①

「ペアの人が描いた絵と英文」を「自分が描いた絵と英文」を見比べてみましょう。

Aさんが描いた絵に使われた動詞laugh, listenと
Bさんが描いた絵に使われた動詞fall, arriveには、
どんな違いがあると思いますか？
ペアの人と一緒に考えてみましょう！

Slide 13

Laugh, listenなどの動詞は.

（自発的・意図的・生理的な動き・行い・ふるまい）を表す自動詞

例　*cough, cooperate, despair, dive, depend, laugh, listen*

Slide 14

Fall, arrive などの動詞は

（　存在・生成・消滅などの「様子」を表す　）　**自動詞**

例　*appear, arrive, come, die, fall, occur, stand, bloom*

Slide 15

「主語」に注目しましょう！

他動詞用法　**Sam** opened the window.　（Samは窓を開けた）

The company opened the new office. (その会社は新しいオフィスを開けた)

自動詞用法　**We** will open earlier than usual.　（私達はいつもよりも早く開くだろう）

The box opened easily.　（その箱は簡単に開いた）

Slide 16

グループA　**Sam** と **we**

有生名詞
[+animate]

グループB　**the company, the box**

無生物名詞
[-animate]

Slide 17

ペアワーク

例文カードを見てください。他動詞用法・自動詞用法の文があります。

例文カードに書かれている主語を
有生名詞 [+animate]（○）か
無生物名詞 [-animate]（×）
かで分類してみましょう！

主語を有生名詞 [+animate] と無生物名詞 [-animate] に分けて気づいたことも話しましょう！

Table 46 *Extracts from PowerPoint Materials Presented at the Third Session, Part 2*

Slide 18

Slide 19

Slide 20

6.4.4 Grammaticality Judgement Task

The researcher had participants in both the Experimental and Control Groups complete the GJT sets. The test design and the test sentences were adapted from Study 1 (See also Appendices B). There were four different types of test questions: Type A: [+transitive] and [+animate subject]; Type B: [+transitive] and [-animate subject]; Type C: [+intransitive] and [+animate subject]; and Type D: [+intransitive] and [-animate subject]. See Table 47 for some example sentences.

Table 47 *Four Types of Test Sentences*

Type	Sentence Type	Examples
A	[+transitive] & [+animate subject]	*Ann closed the windows in the early evening.*
B	[+transitive] & [-animate subject]	*The company opened the new office.*
C	[+intransitive] & [+animate subject]	*Mary and Tom separated 10 years ago.*
D	[+intransitive] & [-animate subject]	*The big rock rolled slowly.*

These four different types of questions were tested for nine ergative verbs, resulting in 36 test questions (9 verbs × 4 types), all of which were grammatically correct sentences. In addition, the test had 30 distractors (ungrammatical sentences). In total, there were 66 sentences. Two GJT examples are provided in (70) (intransitive usage) and (71) (transitive usage). The test consisted of a context sentence written in Japanese and a test sentence written in English. The participants were asked to judge whether the underlined part of each test sentence was grammatically correct. If they choose "Incorrect," they were asked to revise the original test sentence into what they believed to be correct.

The participants completed each GJT within 30 minutes, even though there was no time limit. In addition, so that they did not to use their metalinguistic knowledge on ergative verb usages, the examiner instructed the participants not to revisit test sentences once they

answered them. The context and test sentences for all three GJTs were slightly modified by alternating nouns, adverbs, or adjectives.

(70) An example of an intransitive test sentence (Type D sentence)

a. Context sentence: I bought a can opener because I wanted to open the bottle. As a result,

(written in Japanese: Bin-o aketai node sennuki-o katte kimashita. Sono kekka,)

b. Test sentence: The bottle opened easily.

(71) An example of a transitive test sentence (Type B sentence)

a. Context sentence: Large trees fell into the road. As a result,

(written in Japanese: Ookina ki-ga kuzurete douro-ni ochimasita. Sono kekka,)

b. Test sentence: Large trees closed the road for two days.

6.4.5 Scoring and Data Analysis

All participants' answers were tabulated by assigning one point for each correct answer and none to incorrect answers. Since all 36 test sentences were grammatically correct, answering correctly meant selecting "Correct" and answering incorrectly meant selecting "Incorrect." Descriptive statistics (*M* and *SD*) for each GJT were calculated, after which the following analysis was performed. An alpha level of .05 was used in this study. IBM SPSS version 21 for Windows (2012) and the online statistical software Langtest (Mizumoto, 2015) were used for all statistical analysis.

As for overall results, a one-way ANOVA was conducted for the mean scores of all three GJTs for the Experimental Group. To compare the results of the Experimental Group with the Control Group, a two-way mixed ANOVA was conducted for the mean scores of the Pre-test and Post-test 2 for two groups: Group (Intermediate Group and Elementary Group) × Test (Pre-test, Post-test 1, and Post-test 2). Group (Intermediate Group and Elementary Group) were between-participant variables. Test (Pre-test, Post-test 1, and Post-test 2) were within-participant variables. To compare the results between proficiency groups, a two-way mixed ANOVA was conducted for the mean scores of Pre-test, Post-test 1, and Post-test 2 for two groups: Group (Intermediate Group and Elementary Group) × Test (Pre-test and Post-test 2). Group (Intermediate Group and Elementary Group) were between-

participant variables. Test (Pre-test, Post-test 1, and Post-test 2) were within-participant variables.

In addition, to compare the results of the four types of test sentences (Type A to D), a two-way repeated measures of ANOVA was conducted for the mean scores of all three GJTs for the Experimental Group: Test (Pre-test, Post-test 1 and Post-test 2) × 4 types of test sentences (Type A, B, C, and D) were within-participant variables. To compare the results of the Experimental Group with the Control Group, a three-way mixed ANOVA was conducted for the mean scores of the Pre-test and Post-test 2 for two groups: Group (Experimental Group and Control Group) × Test (Pre-test and Post-test 2) × 4 types of test sentences (Type A, B, C, and D). Group (Experimental Group and Control Group) were between-participant variables. Test (Pre-test & Post-test 2) and 4 types of test sentences (Type A, B, C, and D) were within-participant variables. Furthermore, to compare the results within proficiency groups on respective types, a two-way mixed ANOVA was conducted for the mean scores of the Pre-test, Post-test 1 and Post-test 2 on each type for two groups: Group (Intermediate Group and Elementary Group) × Test (Pre-test & Post-test 2) on each type, respectively. Group (Intermediate Group and Elementary Group) were between-participant variables. Test (Pre-test, Post-test 1, and Post-test 2) were within-participant variables.

To compare the results of individual verbs for each type of test sentence, a two-way repeated measures of ANOVA was conducted for the mean scores of individual verbs for each type for all three GJTs for the Experimental Group: Test (Pre-test, Post-test 1, and Post-test 2) × 9 kinds of individual verbs on respective Type (Type A to D) were within-participant variables.

Finally, the individual learners' results were analyzed based on the results of Type D sentences throughout the three tests. I compared the numbers of the participants whose test scores improved, remained the same, or decreased with each test. Furthermore, for cluster analysis, I employed the Ward method with the squared Euclidean distance technique

6.4.6 Reliability of Grammaticality Judgement Tests

Reliability rates for the three GJTs (Pre-test. Post-test 1, and Post-test 2) were estimated using Cronbach's alpha. The reliability estimate was $\alpha = 0.56$ for the Pre-test, 0.64 for Post-test 1, and 0.70 for Post-test 2. These rates do not reach desirable reliability

estimates (above 0.8 for language testing and 0.7 for psychological scale) (Takeuchi & Mizumoto, 2014). However, they still should be acceptable as measurement items because the estimates are not below 0.5 (c.f., Takeuchi & Mizumoto, 2014). Hence, the test items for the three GJTs used in Study 2 were considered reliable as a testing measurement.

6.5. Results and Discussions

6.5.1 Overall Results

The overall results of the experiment are presented in Table 48. First let's look at the overall results from the Experimental Group, which are presented graphically in Figure 18. The results reveal that the mean scores of both Post-test 1 (the percentage of correct answers: 94.94%) and Post-test 2 (the percentage of correct answers: 93.33%) were higher than the Pre-test (the percentage of correct answers: 74.75%). The results of one-way ANOVA confirm that the differences in mean scores among the three tests were statistically significant (F (2, 88) = 136.92, p <.001, partial ŋ2 = .76). Multiple comparisons based on the Bonferroni's method indicated that the differences in the mean scores between the Pre-test and Post-test 1 (p <.001), and between the Pre-test and Post-test 2 (p <.001) were statistically significant; however, no statistical difference was observed between Post-test 1 and Post-test 2 (p =.19).

Therefore, one could argue that the explicit instruction provided in this experiment can be effective and its positive effects are maintained at least for 13 weeks. Thus, the research predictions are also supported as appropriate.

Table 48 *Experiment Results*

		Pre-test		Post-test 1		Post-test 2	
Group	*n*	*M*	*SD*	*M*	*SD*	*M*	*SD*
Experimental	45	26.91	3.29	34.18	2.01	33.60	2.41
Control	27	26.11	3.24	(Not Available)		27.04	4.10

Note: The maximum score per test is 36.

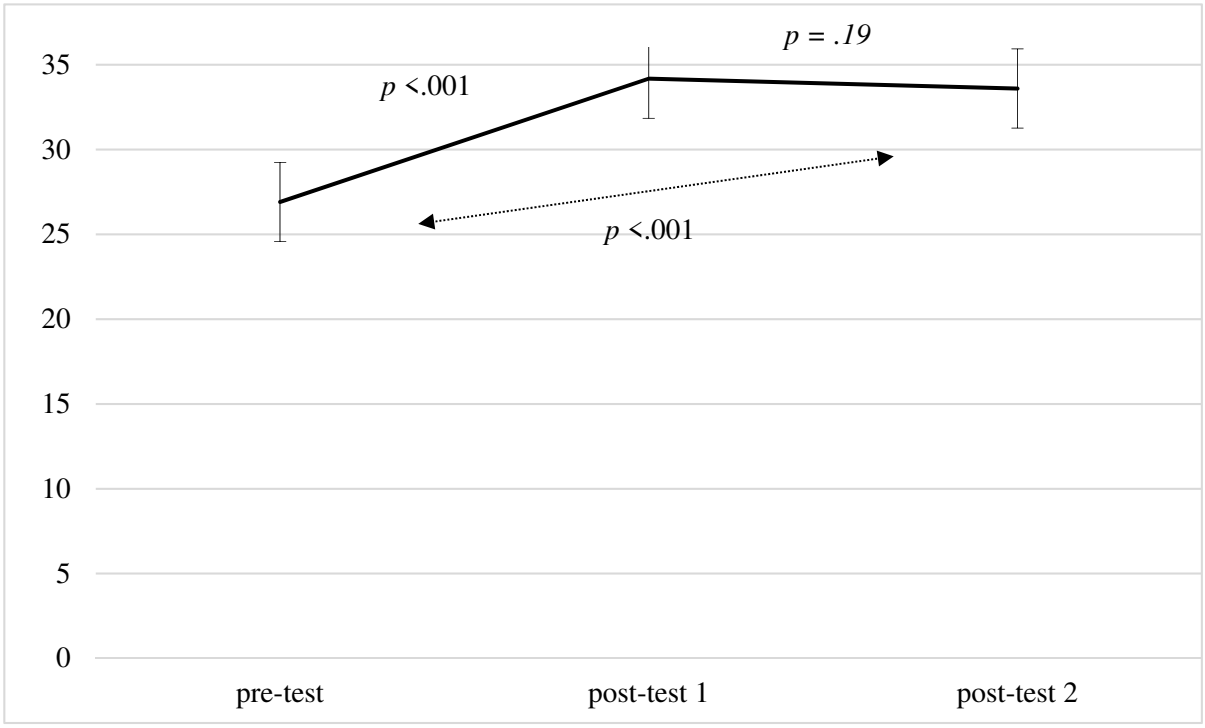


Figure 18 Overall results of the experiment

Next, let's compare the overall results from the Pre-test and Post-test 2 in the Experimental Group with those from the Control Group. They are shown graphically in Figure 19. The results of a two-way mixed ANOVA (Group: Experimental and Control × Test: Pre-test and Post-test 2), shown in Table 49, indicated that the main effect between the Experimental and Control Group was statistically significant (F (1, 70) = 30.26, p <.001, partial η^2 = .30), and between the Pre-test and Post-test 2 was also statistically significant (F (1, 70) = 89.25, p <.001, partial η^2 = .56). Moreover, the interaction effects between groups and tests were statistically significant (F (1, 70) = 51.12, p <.001, partial η^2 = .42). The simple main effect between the Experimental Group and Control Group in the Pre-test was not statistically significant (F (1, 70) = 1.01, p = .32, partial η^2 = .01); however, in Post-test 2, the simple main effect between the two groups was statistically significant (F (1, 70) = 73.55, p <.001, partial η^2 = .51). In addition, the simple main effect between the Pre-test and Post-test 2 for the Experimental Group was statistically significant (F (1, 70) = 183.63, p <.001, partial η^2 = .72), whereas for the Control Group, the simple main effect between the Pre-test and Post-test 2 was not statistically significant (F (1, 70) = 2.11, p =.15, partial η^2 = .03). These results indicate that the Experimental Group's mean scores improved in Post-test 2, but those of the Control Group did not. Therefore, one could argue that the explicit instruction provided in this experiment was effective for at least 13 weeks after the last teaching session.

Table 49 *Results of Two-way Mixed ANOVA (Group × Tests)*

Source	*SS*	*df*	*MS*	*F*-ratio	*p*-value	partial η^2
A (Group)	457.42	1	457.42	30.26	.000***	.30
s x A	1058.33	70	13.12			
B (Tests)	489.25	1	489.25	89.25	.000***	.56
s x B	383.75	70	5.48			
Interaction (A x B)	280.22	1	280.22	51.12	.000***	.42

Note: +$p < .10$, *$p < .05$, **$p < .01$, ***$p < .001$

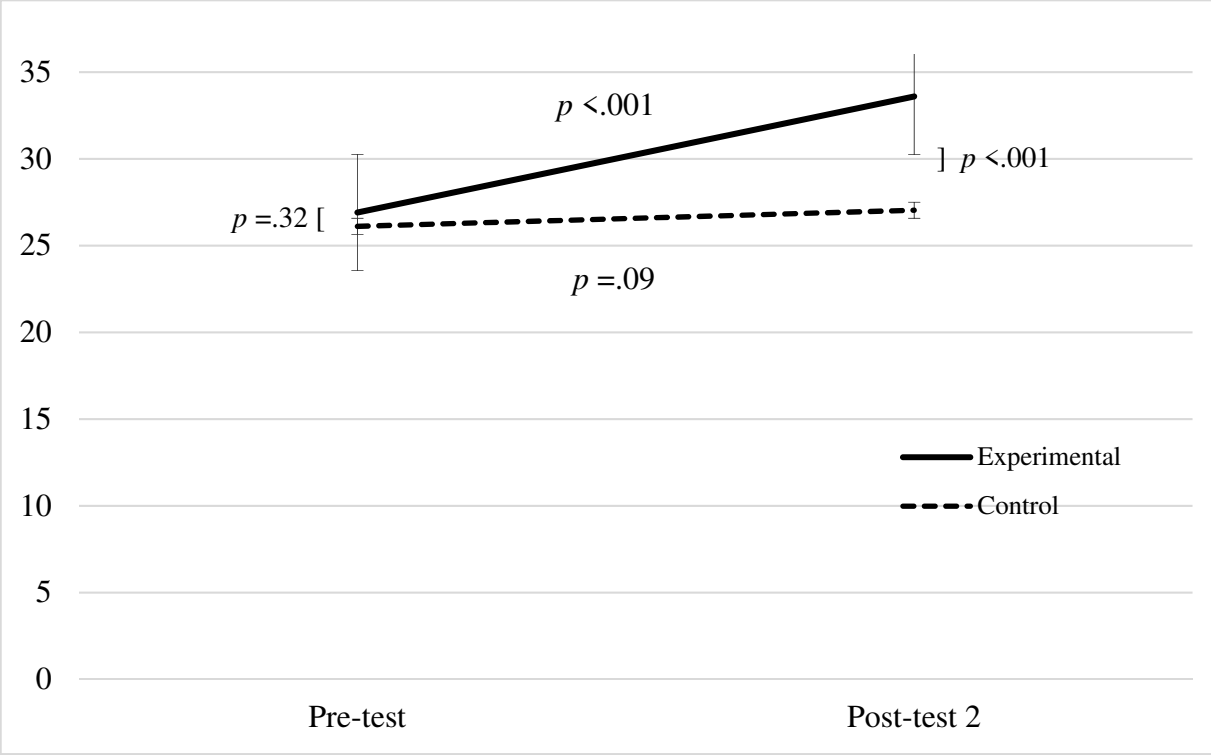


Figure 19. Results of the Pre-test and Post-test 2

Furthermore, let's compare the overall results from the Intermediate and Elementary Groups in the Experimental Group, as shown in Table 50 and Figure 20. Table 51 presents the results of the two-way mixed ANOVA (Group: Elementary and Intermediate × Test: Pre-test, Post-test 1, and Post-test 2), which indicated that the main effect between both the groups was not statistically significant (F (1, 23) = 0.02, p =.88, partial η^2 = .00), whereas the effect between the three GJTs was statistically significant (F (2, 74) = 72.83, p <.001, partial η^2 =.76). Moreover, the interaction effects between the groups and tests were statistically significant (F (2, 46) = 4.65, p =.01, partial η^2 = .17). The simple main effect between the Elementary and Intermediate Groups in the Pre-test and Post-test 1 was not statistically significant (Pre-test: F (1, 23) = 1.55, p =.23, partial η^2 =.06, Post-test 1: F (1, 23) = 0.02, p =.89, partial η^2 =.00). However, in Post-test 2, the simple main effect between the two groups showed a marginally significant effect (F (1, 23) = 4.07, p =.05, partial η^2 = .15).

In addition, the simple main effect between the three GJTs, for both the Elementary and Intermediate Groups, were statistically significant (Elementary: F (2, 26) = 26.35, p <.001, partial η^2 = .67, Intermediate: F (2,20) = 49.73, p <.001, partial η^2 = .83). Multiple comparisons between the three GJTs in each group, based on the Bonferroni method, indicated that the differences in the mean scores between the Pre-test and Post-test 1 and between the Pre-test and Post-test 2 for both the groups were statistically significant (p <.001). However, the differences in the mean scores between Post-test 1 and Post-test 2 in the Intermediate Group were not statistically significant (p =.75), whereas those in the Elementary Group were marginally significant (p=.05).

These results revealed that the explicit instruction provided in this experiment was effective for both the Elementary and Intermediate Groups. However, while the effect was maintained for 13 weeks with the Intermediate Group, the effect was not maintained at the same level as Post-test 1 for the Elementary Group. Thus, after 13 weeks, a significant difference between the two proficiency groups was confirmed. One could argue that after comparing the JLEs according to their proficiencies, JLEs with a lower proficiency (i.e. Elementary) may experience long-term difficulty in retaining grammatical knowledge of ergative verb structures.

Table 50 *Experimental Group Results by Elementary and Intermediate Groups*

		Pre-test		Post-test 1		Post-test 2	
Experimental Group	*n*	*M*	*SD*	*M*	*SD*	*M*	*SD*
Elementary	14	27.79	3.21	34.07	1.64	32.29	3.15
Intermediate	11	25.91	4.32	34.18	2.40	34.45	1.86

Table 51 *Results of Two-way Mixed ANOVA*

(*Group: Elementary, Intermediate* × Tests: Pre, Post-test 1, Post-test 2)

Source	*SS*	*df*	*MS*	*F*-ratio	*p*-value	partial η^2
A (Group)	0.33	1	0.33	0.02	.88	.00
s x A	328.15	23	14.27			
B (Tests)	789.34	2	394.67	72.83	.000***	.17
s x B	249.27	46	5.42			
Interaction (A x B)	50.41	2	25.21	4.65	.01*	.17

Note: +$p < .10$, *$p < .05$, **$p < .01$, ***$p < .001$

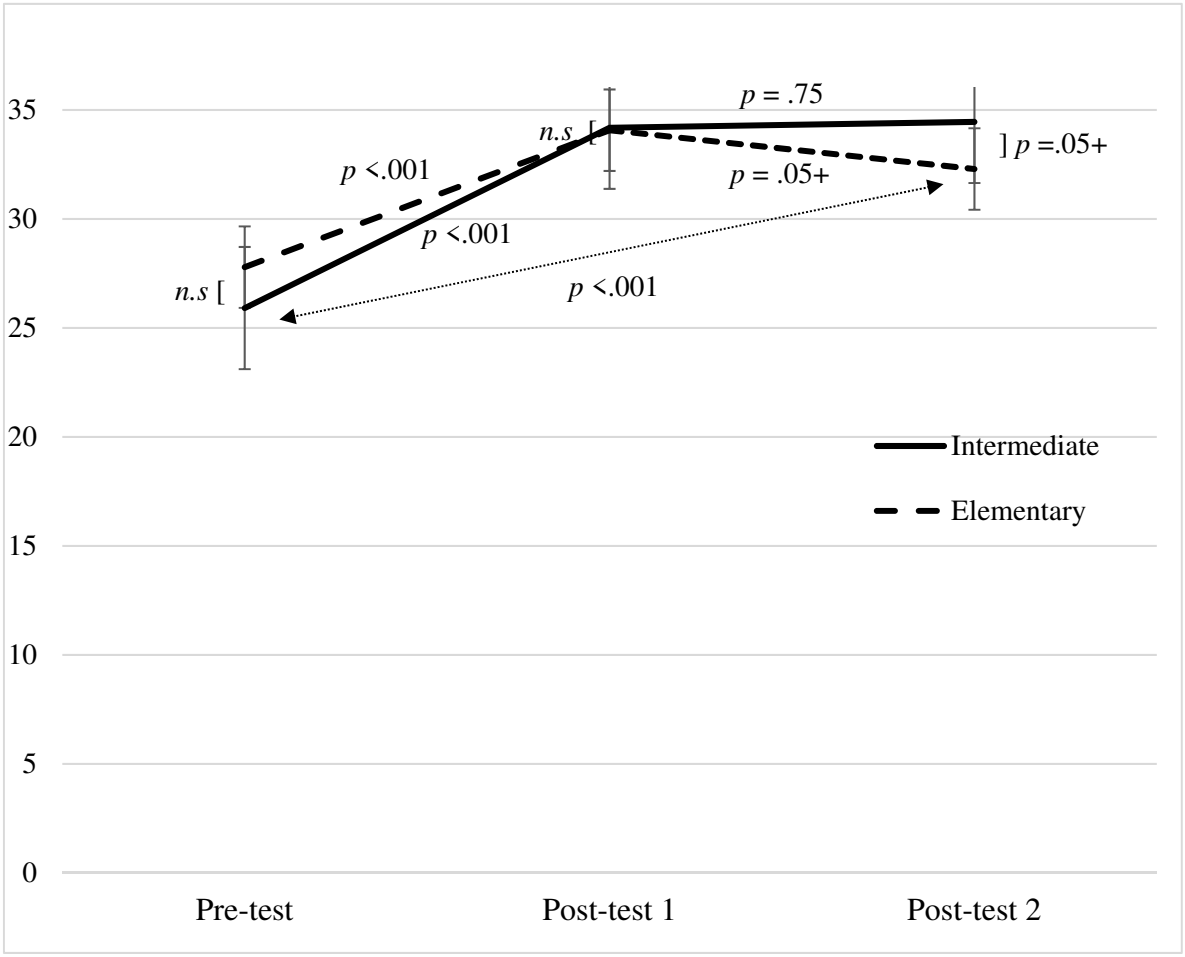


Figure 20 Overall results of the experiment by proficiency group: Intermediate and Elementary

6.5.2 Results for the Four Types of Test Sentences

The researcher analyzed the experiment results using the four sentence types (Type A to D), as shown in Table 52. First, let's look at the results from the Experimental Group. The overall results for the four types of sentences by Experimental Group are presented graphically in Figure 21. Since each verb appears in four types of test sentences, the maximum score for correct answers per type was 9.

A two-way repeated measure of ANOVA (Tests: Pre-test, Post-test 1, Post-test 2 × Types: Type A to D) was conducted. The results reveal that the main effect between the three tests and four types was statistically significant (Test: F (2, 88) = 136.92, p <.001, partial η^2=.76; Types: F (2.22, 97.89) = 76.83, p <.001, partial η^2= .64). Moreover, the interaction effect between the tests and types was statistically significant (F (3.84, 168.89) = 43.22, p <.001, partial η^2= .50). See Table 53 for the results of the two-way ANOVA.

Table 52 *Results for Four Types of Test Sentences*

Group	Type	Pre-test		Post-test 1		Post-test 2	
		M	*SD*	*M*	*SD*	*M*	*SD*
Experimental	A [Vt, +animate]	8.13	1.19	8.93	0.25	8.84	0.42
	B [Vt, -animate]	8.18	0.95	8.71	0.69	8.78	0.42
	C [Vi, +animate]	6.00	1.59	8.22	0.84	7.82	1.02
	D [Vi, -animate]	4.60	1.64	8.31	1.07	8.16	1.19
Control	A [Vt, +animate]	7.89	1.26	(Not Available)		8.00	0.94
	B [Vt, -animate]	7.59	1.37			7.59	1.57
	C [Vi, +animate]	6.52	1.34			6.33	1.28
	D [Vi, -animate]	4.11	1.52			5.11	2.15

Note: *The maximum score per type was 9.0.*

Table 53 *Results of Two-way Repeated ANOVA (Tests × Types) for Experimental Group*

Source	*SS*	*df*	*MS*	*F*-ratio	*p*-value	partial η^2
A (Tests)	367.05	2	183.52	136.92	.ooo***	.76
s x A	117.95	88	1.34			
B (Types)	276.44	2.22	124.25	76.83	.ooo***	.64
s x B	158.31	97.89	1.62			
Interaction (A x B)	182.85	3.84	47.64	43.22	.ooo***	.50

Note: +p < .10, *p < .05, **p < .01, ***p < .001

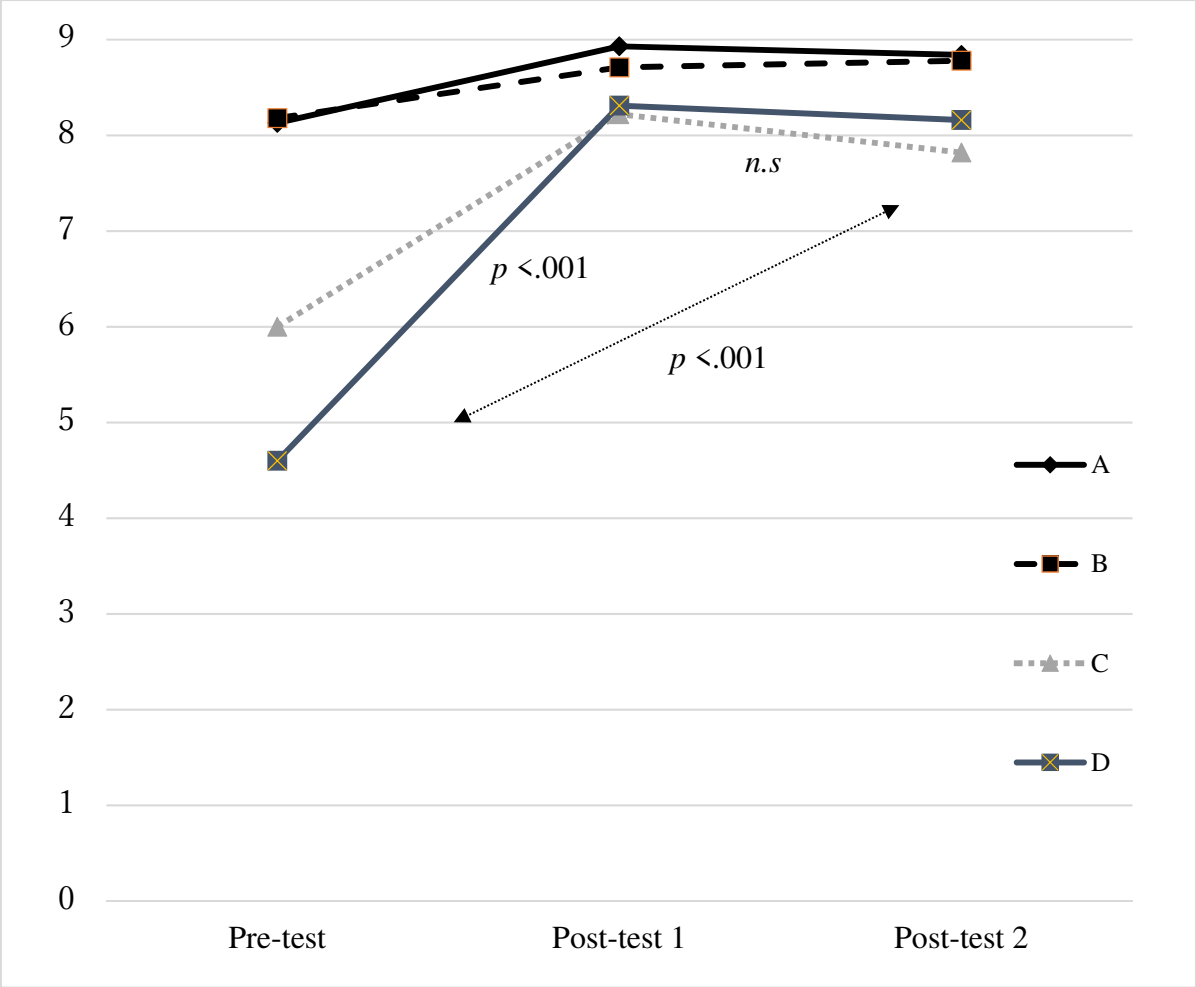


Figure 21. Experiment results by types (Experimental Group)

Let's examine the individual type results by Pre-test, Post-test 1, and Post-test 2 (see Figure 22 for Type A, Figure 23 for Type B, Figure 24 for Type C & Figure 25 for Type D) . The simple main effects were subsequently tested, and the results revealed that effects for tests (Pre-test, Post-test 1, and Post-test 2) in Type A, B, C and D sentences were statistically significant respectively (Type A: F (2, 43) = 9.16, p <.001, partial η^2 = .30; Type B: F (2, 43) = 9.57, p <.001, partial η^2 = .31; Type C: F (2, 43) = 47.00, p <.001, partial η^2 = .69; Type D: F (2, 43) = 108.15, p <.001, partial η^2 = .83). Multiple comparisons between the three tests by each test sentence type, based on the Bonferroni method, indicated that for each type, the differences in mean scores between the Pre-test and Post-test 1 and between the Pre-test and Post-test 2 were statistically significant, respectively. However, the difference in mean scores between Post-test 1 and Post-test 2 was not statistically significant. (see Table 54 for between-test comparisons). These results revealed that the explicit instruction provided in this experiment was effective for all four types of sentences, and the effect was maintained for at least 13 weeks.

Table 54 *Between-Test Comparisons of Type A to D (Experimental Group)*

Type	Pair	Differences in mean scores	*SE*	*p* -value
A	Pre-test < Post-test 1***	-.80	.19	.000
	Pre-test < Post-test 2**	.19	.19	.002
	Post-test 1 = Post-test 2	.07	.07	.63
B	Pre-test < Post-test 1**	.15	.15	.004
	Pre-test < Post-test 2***	.14	.14	.000
	Post-test 1 = Post-test 2	.11	.11	1.00
C	Pre-test < Post-test 1***	23	.23	.000
	Pre-test < Post-test 2***	.25	.25	.000
	Post-test 1 > Post-test 2	.17	.17	.08
D	Pre-test < Post-test 1***	.28	.28	.000
	Pre-test < Post-test 2***	.26	.26	.000
	Post-test 1 = Post-test 2	.22	.22	1.00

Note: +p < .10, *p < .05, **p < .01, ***p < .001

p value is adjusted by the Bonferroni method

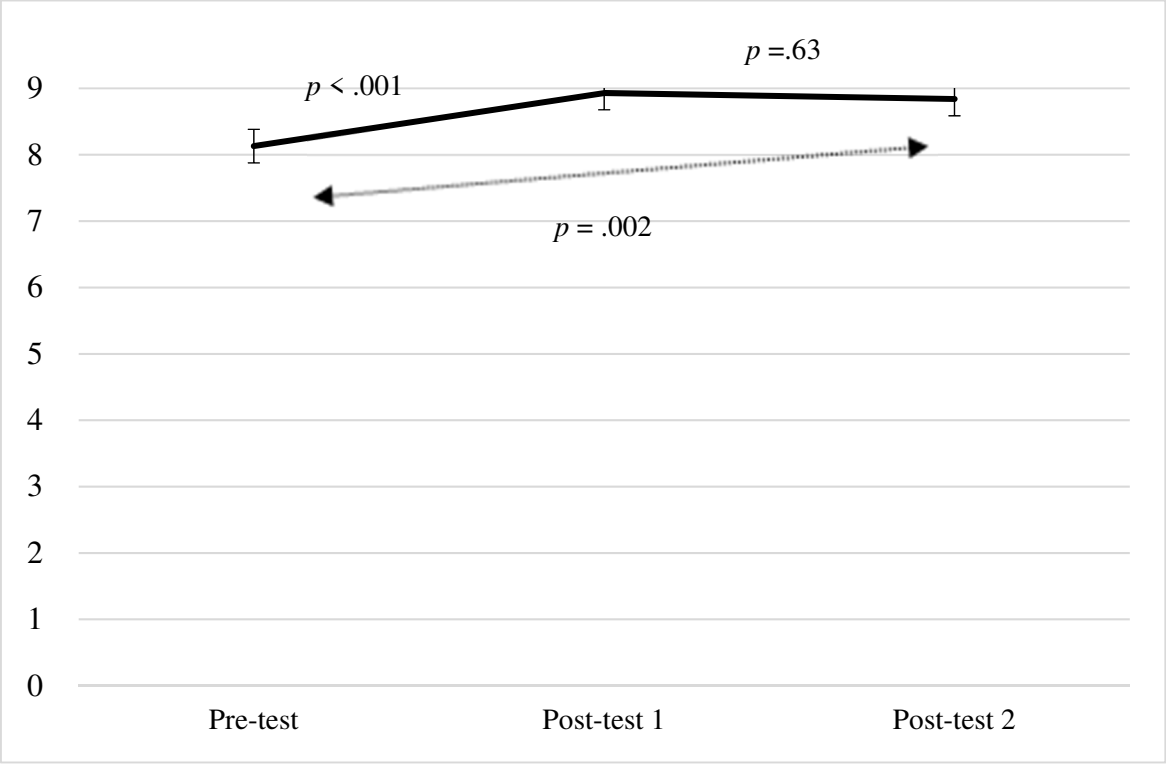


Figure 22. Results for Type A (Experimental Group)

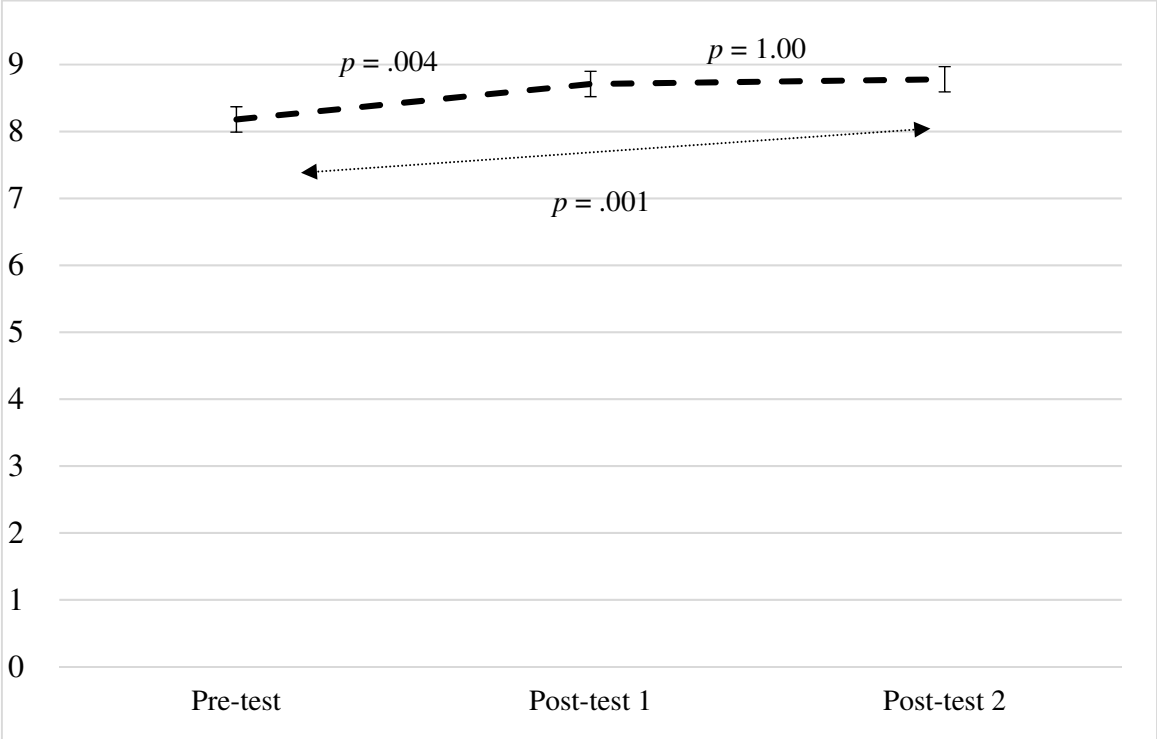


Figure 23. Results for Type B (Experimental Group)

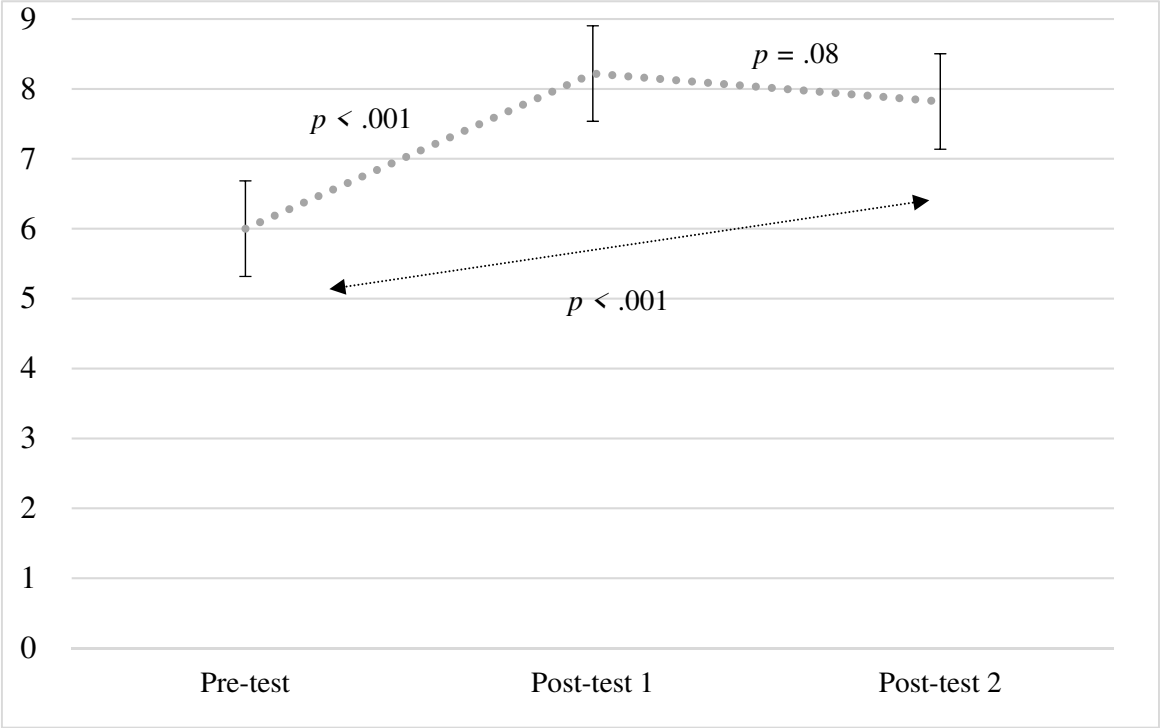


Figure 24. Results for Type C (Experimental Group)

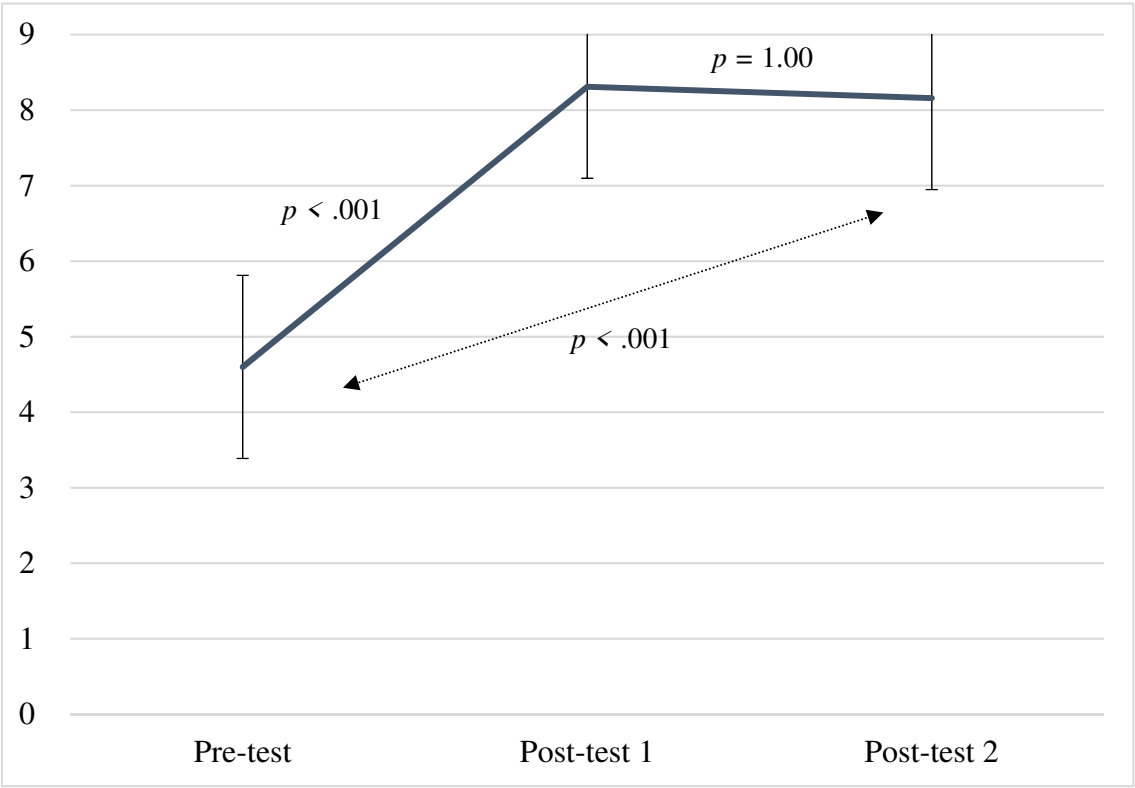


Figure 25. Results for Type D (Experimental Group)

Next, let's examine the differences between the four types of sentences in the Pre-test, Post-test 1, and Post-test 2. In Figure 26, Figure 27 and Figure 28, an arrow indicates a statistically significant difference between the mean scores for two types of sentences. The simple main effects for the four types in the Pre-test, Post-test 1, Post-test 2 were subsequently analyzed. The results revealed that the differences in mean scores between the four types by test were statistically significant (Pre-test: F (3, 42) = 56.26, p <.001, partial η^2 =.80; Post-test 1: F (3, 42) = 15.07, p <.001, partial η^2 =.52; Post-test 2: F (3, 42) = 17.67, p <.001, partial η^2 =.56). Multiple comparisons between the four types of sentences by test, based on Bonferroni's method, were conducted as shown in Table 55.

Let's look at differences between the types in the Pre-test (see Figure 26). The differences in mean scores for all the type pairs showed statistical significance (p<.001) except between Type A and Type B (p =1.000). It should be noted that the results between Type A and Type B implied the ceiling effect, since the mean scores for both Type A and Type B were above 8 out of 9. From the Pre-test results, one could argue that (a) the participants had more difficulty in judging the grammaticality of intransitive usages (Type C and D) than transitive usages (Type A and B); (b) with transitive usages, the influence of subject noun animacy was not observed in the judgement of grammaticality since there was no differential difficulty with grammaticality judgement between Type A and Type B sentences; (c) with intransitive usages, however, the influence of subject noun animacy was observed since the participants had more difficulty in judging the grammaticality of Type D sentences (i.e. the most difficult types of sentences among the four) than that of Type C sentences.

Let's look at the differences in sentence types in Post-test 1(see Figure 27). Unlike the results from the Pre-test, no statistically significant difference was observed between Type C and Type D and between Type B and Type D. On the other hand, Type A sentences were judged more correctly than Type C and Type D, and Type B sentences were judged more correctly than Type C. From these Post-test 1 results, one could argue that explicit instruction was effective for improving the mean scores of intransitive usages (Type C and Type D), particularly Type D sentences. As a result, the subject noun's animacy did not appear to influence either transitive and intransitive usages in Post-test 1. However, even after explicit instruction, participants still tended to have more difficulty in judging the

grammaticality of intransitive usages (Type C and Type D) than that of transitive usages with animate nouns (Type A).

Finally, let's look at the difference in sentence types in Post-test 2 (see Figure 28). In addition to the results from Post-test 1, the difference in mean scores between Type B and Type D confirmed statistical significance. Thus, in Post-test 2, Type A sentences were judged more correctly than Type C and Type D. In addition, Type B sentences were judged more correctly than Type C and Type D. From these Post-test 2 results, one could argue that the effect of explicit instruction was partially maintained, and thus the influence of subject noun animacy was not observed with either transitive and intransitive usages (Type A [+animate] = Type B [-animate]; Type C [+animate] = Type D [-animate]). In particular, the effect of explicit instruction or the degree of interpretation of Type D sentences was maintained, since participants had no differential difficulty in judging the grammaticality of both Type C and Type D sentences with intransitive usages in both Post-test 1 and Post-test 2. However, unlike Post-test 1 results, participants had more difficulty in judging the grammaticality of Type D sentences than that of Type B ([+transitive, -animate]). Hence, in Post-test 2, participants experienced even greater difficulty in judging the grammaticality of transitive usages (Type A and Type B) than intransitive usages (Type C and Type D).

In summary, considering the explicit instruction provided in this experiment, the following findings were observed in the Experimental Group results for the four types of sentences. First, explicit instruction was effective for all four test sentences types and the effect was maintained for 13 weeks, especially with the interpretation of Type D sentences, which are the most difficult. Therefore, the participants showed no differential difficulty in judging the grammaticality between intransitive sentences with animate nouns (Type C) and those with inanimate nouns (Type D). As a result, after the series of explicit instruction sessions, the participants were not influenced by the subject noun's animacy with either transitive (Type A and Type B) and intransitive usages (Type C and Type D). On the other hand, participants had more difficulty in judging the grammaticality of intransitive usages than that of transitive usages, as observed from the results of all three GJTs, in which Type A sentences were judged more correctly than those of Type C and Type D. The explicit instruction provided in this experiment was limited in improving the interpretation of intransitive sentences (Type C and Type D) at the same level as that of transitive sentences. Therefore, one could claim that the explicit instruction provided in this experiment might

have enhanced the degree of understanding for lexical-semantic properties of animacy in subject nouns as well as transitive and intransitive usages with ergative verbs. However, the degree of understanding for intransitive usages would not be the same as that for transitive usages.

Table 55 *Between- Type Comparisons of Pre-test, Post-test 1 and Post-test 2 (Experimental Group)*

Type	Pair	Differences in mean scores	*SE*	*p*-value
Pre-test	Type A = Type B	-.04	.17	1.00
	Type A > Type C***	2.13	.28	.000
	Type A > Type D***	3.53	.33	.000
	Type B > Type C***	2.18	.29	.000
	Type B > Type D***	3.58	.27	.000
	Type C > Type D***	1.40	.28	.000
Post-test 1	Type A = Type B	.22	.10	.19
	Type A > Type C***	.71	.12	.000
	Type A > Type D***	.62	.15	.001
	Type B > Type C**	.49	.15	.01
	Type B = Type D	.40	.16	.11
	Type C = Type D	-.09	.18	1.00
Post-test 2	Type A = Type B	.07	.07	1.00
	Type A > Type C***	1.02	.14	.000
	Type A > Type D***	.69	.16	.000
	Type B > Type C***	.96	.15	.000
	Type B > Type D**	.62	.18	.005
	Type C = Type D	-.33	.16	.25

*Note: +p < .10, *p < .05, **p < .01, ***p < .001*

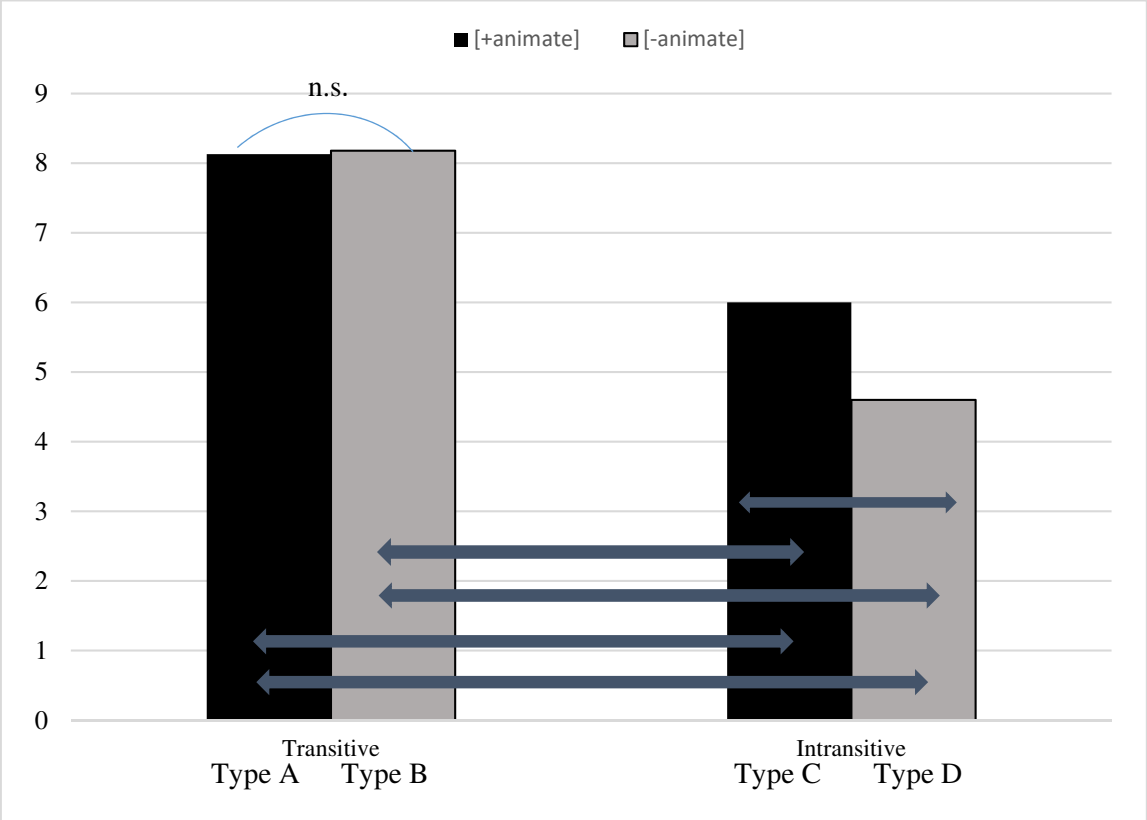


Figure 26. Results of Pre-test by types (Experimental Group)

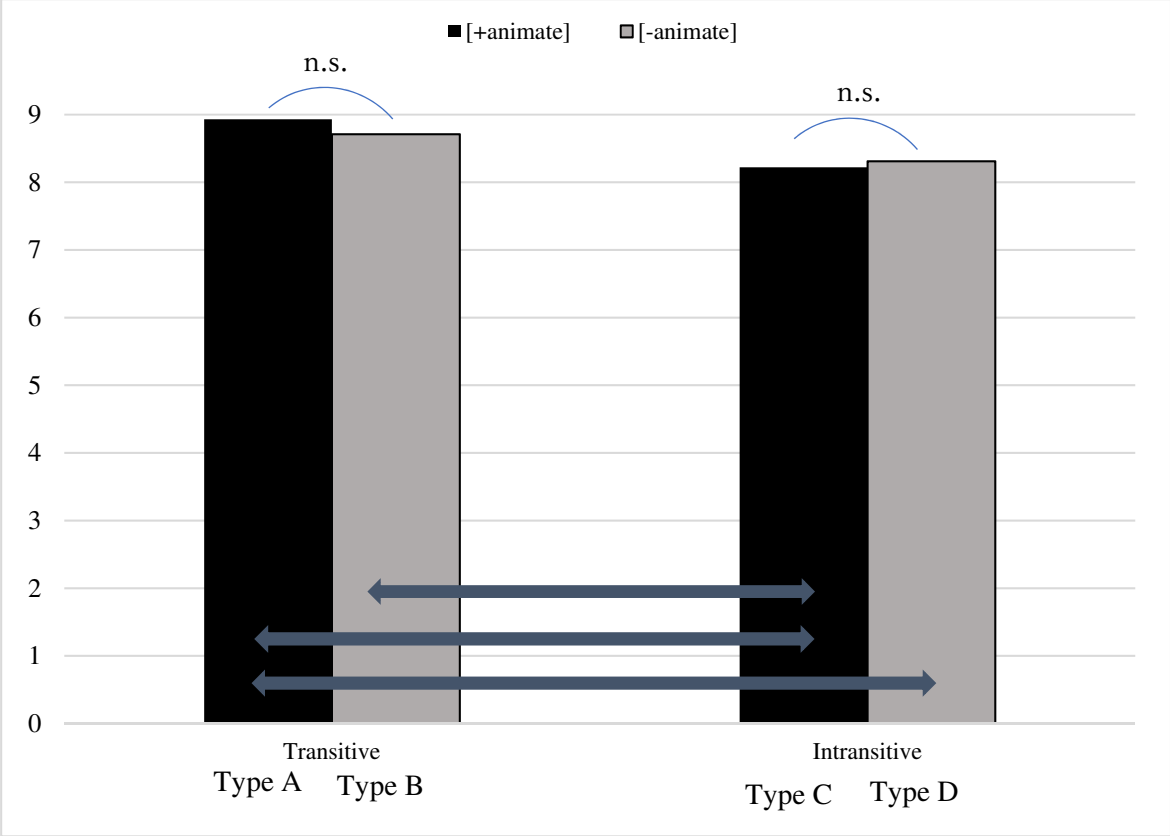


Figure 27. Results of Post-test 1 by types (Experimental Group)

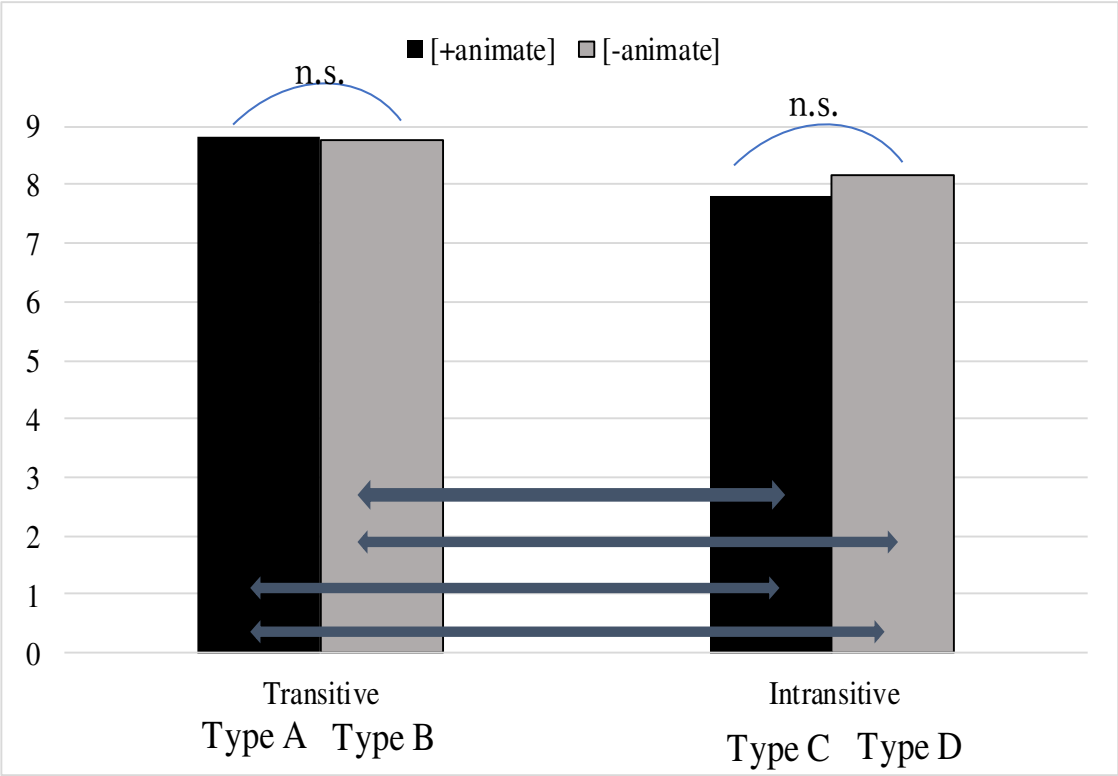


Figure 28. Results of Post-test 2 by types (Experimental Group)

To compare the results of the four types of test sentences in the Experimental Group with those in the Control Group, a three-way mixed ANOVA (Tests: Pre-test, Post-test 2× Types: Type A to D × Groups: Experimental, Control) was conducted. Table 56 shows the results which reveal that the main effects between the groups, between the three tests and between the four types were statistically significant, respectively (Group: F (1, 70) = 30.26, p <.001, partial ŋ2=.30; Test: F (1, 70) = 89.25, p <.001, partial $ŋ^2$=.56; Types: F (1.99, 138.97) = 133.16, p <.001, partial $ŋ^2$=.66). In addition, the three-way interaction (groups × tests × types) was statistically significant (F (2.80, 196.24) = 7.95, p <.001, partial $ŋ^2$=.10), and the two-way interaction was also statistically significant between groups and tests (F (1, 70) = 51.12, p <.001, partial $ŋ^2$= .42), between groups and types (F (1.99, 138.97) = 7.14, p <.001, partial $ŋ^2$= .09) and between tests and types (F (2.80, 196.24) = 26.62, p <.001, partial $ŋ^2$=. 28).

First, let's look at the results for Type A, Type B, Type C, and Type D respectively, as depicted graphically in Figure 29, Figure 30, Figure 31 and Figure 32. For the results of Type A and Type B (see Figure 29 and Figure 30), a simple interaction between groups and tests was not statistically significant or marginally significant, respectively (Type A: F (1, 70) = 3.49, p =.07; Type B*:* F (1, 70) = 3.98, p =.05). In contrast, for the results of Type C and Type D (see Figure 31, Figure 32), simple interactions between groups and tests were statistically significant, respectively (Type C: F (1, 70) = 26.63, p <.001; Type D: F (1, 70) = 33.97, p <.001). This means that, even though the mean scores for transitive usages (Type A and Type B) in Post-test 2 with the Experimental Group were higher than those from the Pre-test, a difference in the mean scores between the two tests in the Experimental Group did not show a significant increase compared with the differences in the mean scores between the two tests in the Control Group. This may imply that a ceiling effect for the mean scores for transitive usages (Type A and Type B) occurred in the Experimental Group. On the other hand, the mean scores for intransitive usages (Type C and Type D) in the Experimental Group significantly improved and were maintained in Post-test 2 compared to those of the Control Group.

Simple-simple main effects between groups were subsequently performed in the Pre-test and Post-test for Type A, B, C and D, respectively (see Table 57). Results for individual types are depicted graphically in Figure 29, Figure 30, Figure 31 and Figure 32, respectively. The results reveal that in the Pre-test, the simple-simple main effects between the

Experimental and Control Groups were not statistically significant for Type A, C and D, and statistically significant for Type B (Type A: F (1, 70) = 0.67, p =.42, partial η^2=.01; Type B*:* F (1, 70) = 4.44, p =.04, partial η^2=. 06; Type C; F (1, 70) = 1.95, p =.17, partial η^2=.03; Type D: F (1, 70) = 1.54, p =.22, partial η^2=.02). By contrast, in Post-test 2, the simple-simple main effects between two groups were statistically significant (Type A: F (1, 70) = 26.40, p <.001, partial η^2=.27; Type B: F (1, 70) = 22.33, p <.001, partial η^2=.24; Type C: F (1, 70) = 28.91, p <.001, partial η^2=.29; Type D: F (1, 70) = 58.06, p <.001, partial η^2=.45).

These results mean that, for all four types of sentences, the statistically significant differences in the mean scores between two groups did not exist in the Pre-test except with Type B (p =.04) but emerged in Post-test 2 for all types of test sentences (p <.001). Therefore, the explicit instruction provided in this experiment was effective for all four types of sentences compared with the results from the Control Group.

Table 56 *Results of Three-way ANOVA (Groups×Tests×Types)*

Source	*SS*	*df*	*MS*	*F*-ratio	*p*-value	partial η^2
A (Tests)	122.31	1	122.31	89.25	.000	.56
Interaction (A x C: Group)	70.06	1	70.06	51.12	.000	.42
s x A	95.94	70	1.37			
B (Type)	659.54	1.99	332.21	133.16	.000	.66
Interaction (B x C: Group)	35.38	1.99	17.82	7.14	.000	.09
s x B	346.72	138.97	2.50			
C (Group)	114.36	1	114.36	30.26	.000	.30
s x C	264.58	70	3.78			
Interaction (A x B)	84.14	2.80	30.01	26.62	.000	.28
Interaction (A x B x C)	25.12	2.80	8.96	7.95	.000	.10
s x (A x B)	221.3	196.24	1.13			

Table 57 *Results of Simple-Simple Main Effect Tests Between Two Groups at Each Type*

Source		*SS*	*df*	*MS*	*F*-ratio	*p*-value	partial η^2
Pre-test	Type A	1.01	1	1.01	0.67	.42	.01
		105.87	70	1.51			
	Type B	5.78	1	5.78	4.44	.04	.06
		91.10	70	1.30			
	Type C	4.54	1	4.54	1.95	.17	.03
		162.74	70	2.33			
	Type D	4.03	1	4.03	1.54	.22	.02
		183.47	70	2.62			
Post-test 2	Type A	12.03	1	12.03	26.40	.000	.27
		31.91	70	0.46			
	Type B	23.70	1	23.70	22.33	.000	.24
		74.30	70	1.06			
	Type C	37.41	1	37.41	28.91	.000	.29
		90.58	70	1.29			
	Type D	156.41	1	156.41	58.06	.000	.45
		188.58	70	2.69			

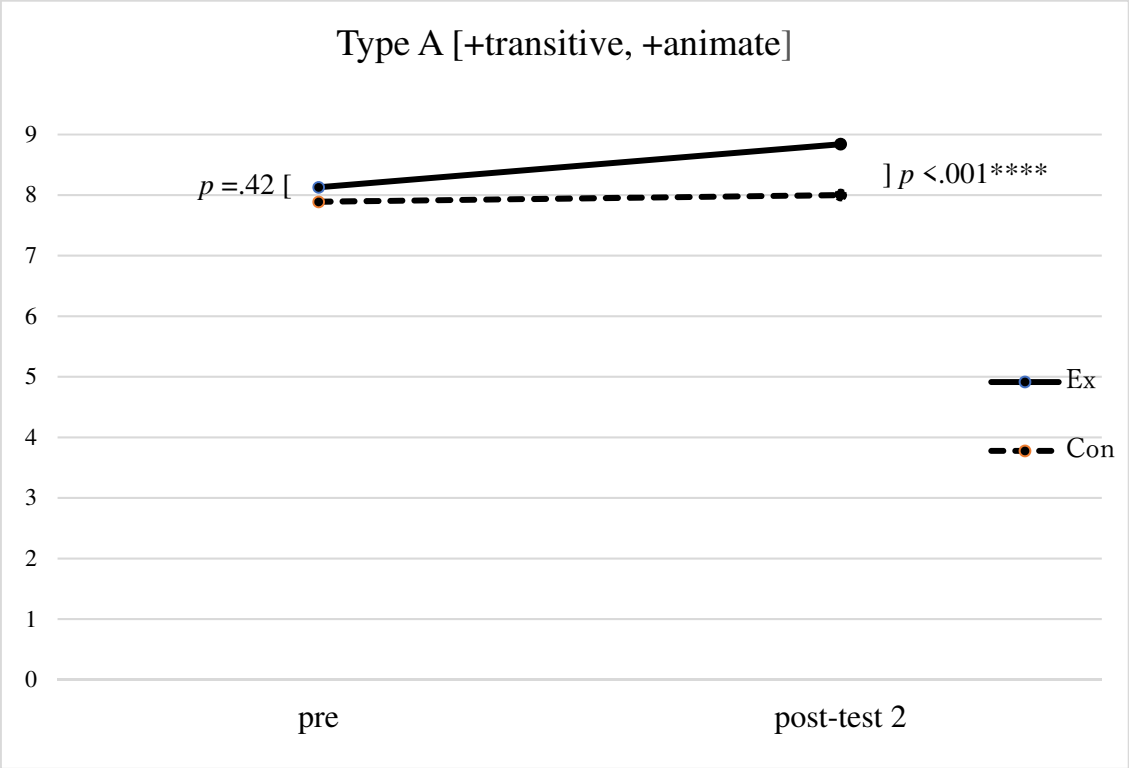


Figure 29 Results of Type A at Pre-test, Post-test 2 by Groups

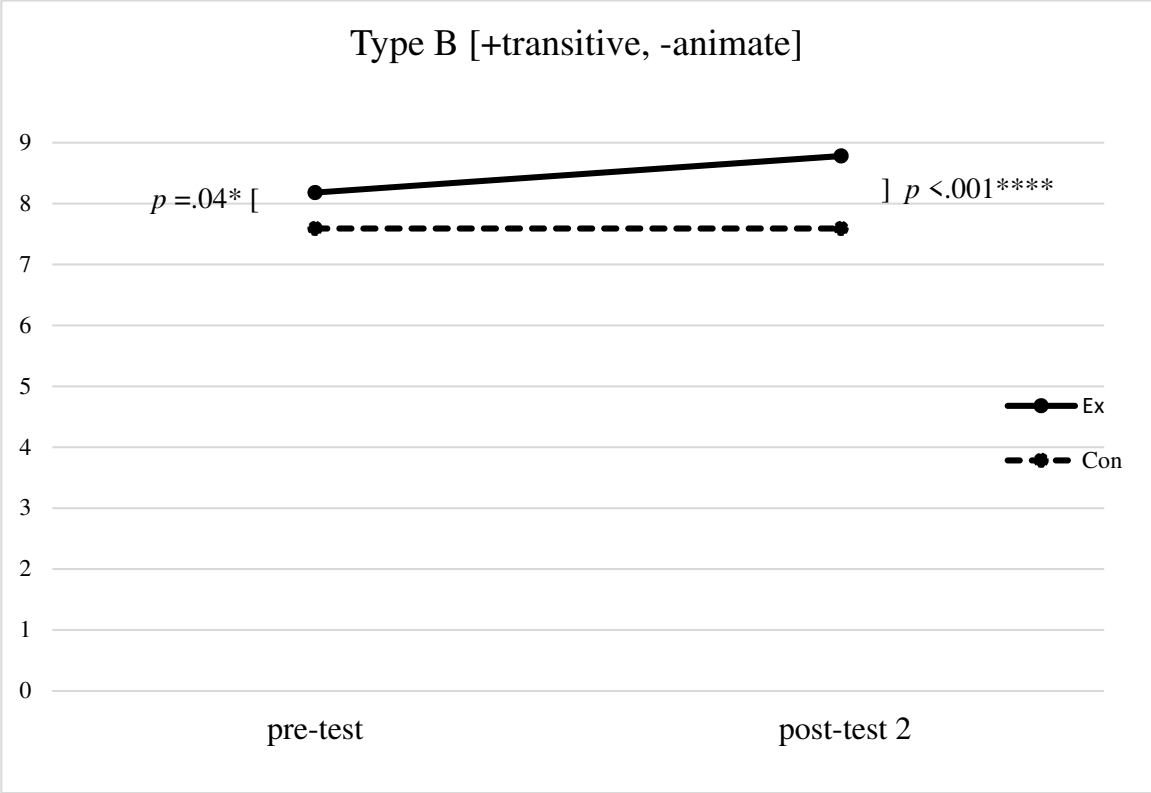


Figure 30 Results of Type B at Pre-test, Post-test 2 by Groups

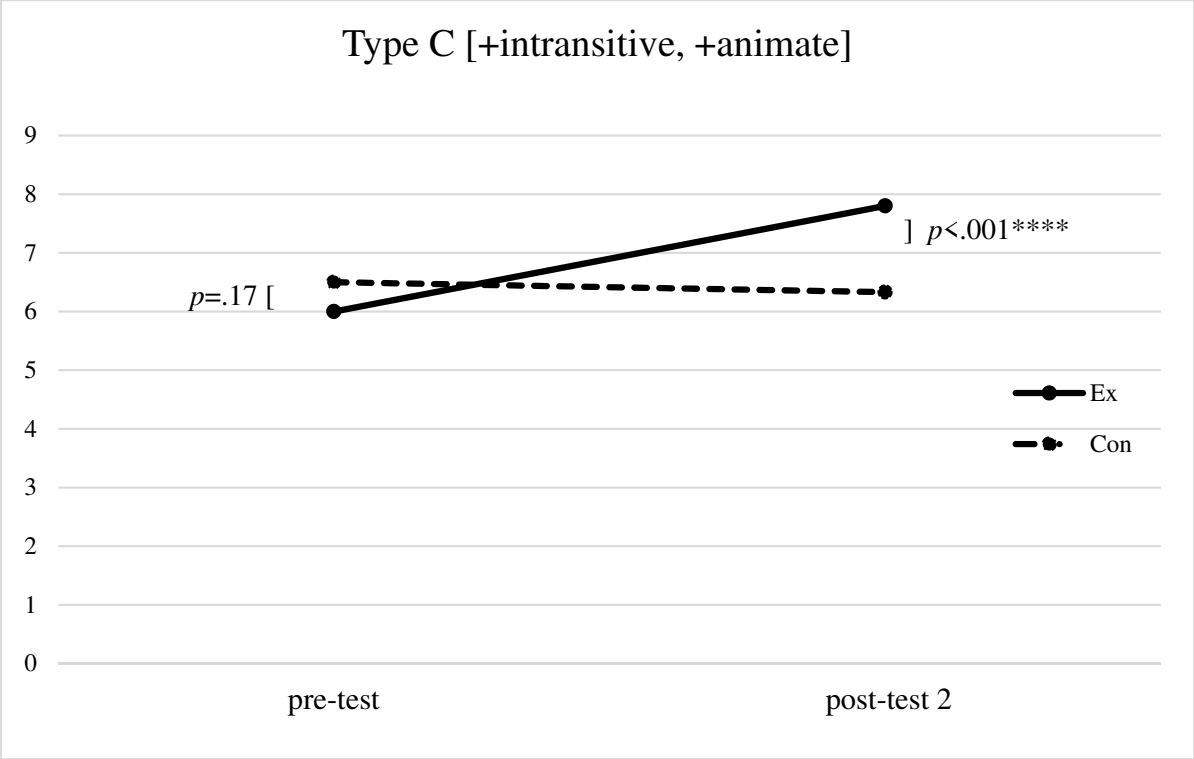


Figure 31 Results of Type C at Pre-test, Post-test 2 by Groups

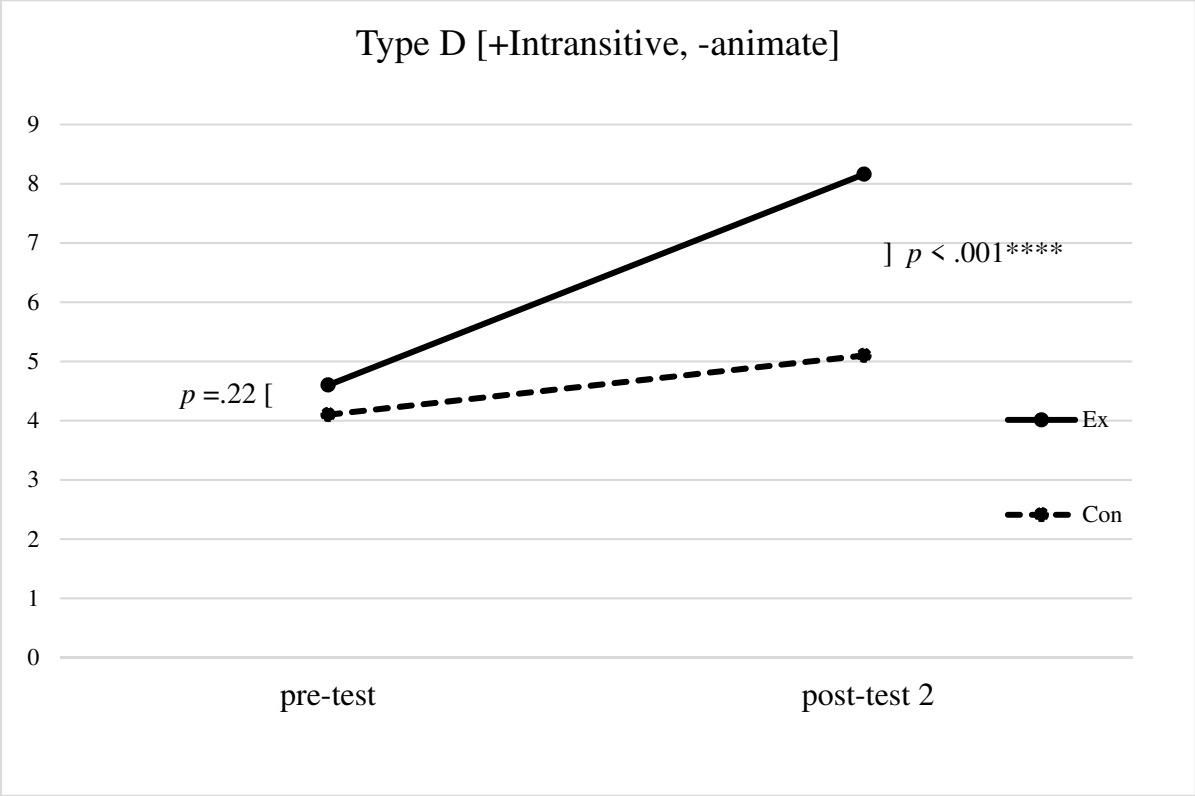


Figure 32 Results of Type D at Pre-test, Post-test 2 by Groups

Next, let's look at the results for the four types by group, as shown graphically in Figure 33 for the Experimental Group and Figure 34 for the Control Group. In the Experimental Group, a simple interaction between tests and types was statistically significant (F (3, 210) = 40.16, p <.001). Simple-simple main effect tests were subsequently performed (see Table 58) and the results revealed that the differences in mean scores between the Pre-test and Post-test 2 were statistically significant for all four types, respectively (Type A: F (1, 70) = 13.07, p <.001, partial η^2=.16; Type B: F (1, 70) = 10.62, p =.002, partial η^2=.13; Type C: F (1, 70) = 58.55, p <.001, partial η^2=.46; Type D: F (1, 70) = 175.34, p <.001, partial η^2=.72).

On the contrary, within the Control Group, a simple interaction between tests and types was statistically significant (F (3, 210) = 3.55, p =.02). The simple-simple main effect tests were subsequently performed (see Table 58) and the results revealed that the differences in mean scores between the Pre-test and Post-test 2 were not statistically significant for any of the four types except Type D (Type A: F (1, 70) = 0.19, p =.66, partial η^2=.00; Type B: F (1, 70) = 0.00, p =1.00, partial η^2= .00; Type C: F (1, 70) = 0.36, p =.55, partial η^2=.01; Type D: F (1, 70) = 8.32, p =.01, partial η^2=.11).

These results suggest that, for the Experimental Group, the mean scores for all four types improved in Post-test 2 after the series of explicit instructions, while for the Control Group, the mean scores for all four types except Type D did not improve in Post-test 2. Hence, one can argue that the effect of explicit instruction for all four types was observed in the Experimental Group compared with the results from the Control Group. However, it should be noted that the mean score for Type D for the Control Group increased significantly. This means that among participants in the Control Group, the degree to which they comprehended the grammaticality for Type D sentences improved without explicit instruction. To examine why this result emerged for Control Group, individual verb results for Type D will be analyzed and discussed in 6.5.3.4.

Table 58 *Results of Simple- Simple Main Effect Tests Between Two Groups at Each Type*

Source		*df*	*F*-ratio	*p*-value	partial η^2
Experimental Group	Type A	1	13.07	.001	.16
	Type B	1	10.62	.002	.13
	Type C	1	58.55	.000	.46
	Type D	1	175.34	.000	.72
	error	70			
Control Group	Type A	1	0.19	.66	.00
	Type B	1	0.00	1.00	.00
	Type C	1	0.36	.55	.01
	Type D	1	8.32	.01	.11
	error	70			

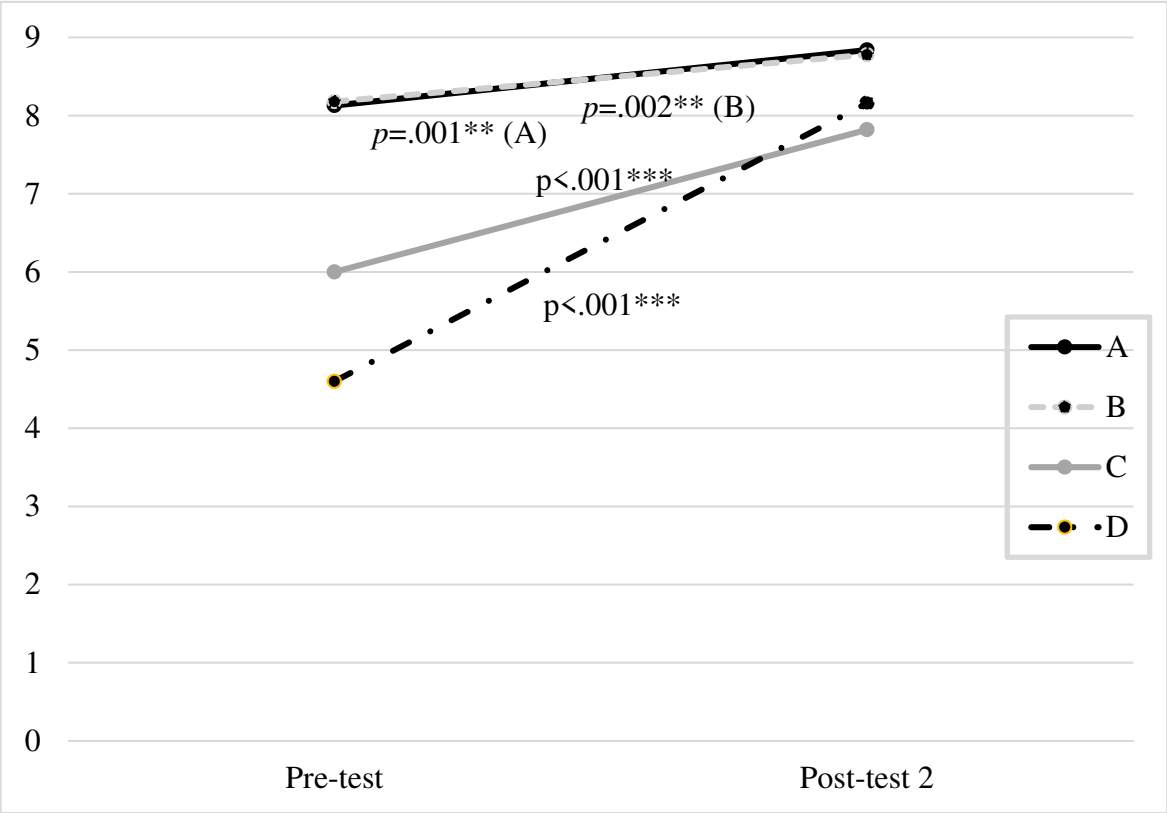


Figure 33 Results of Experimental Group by Types

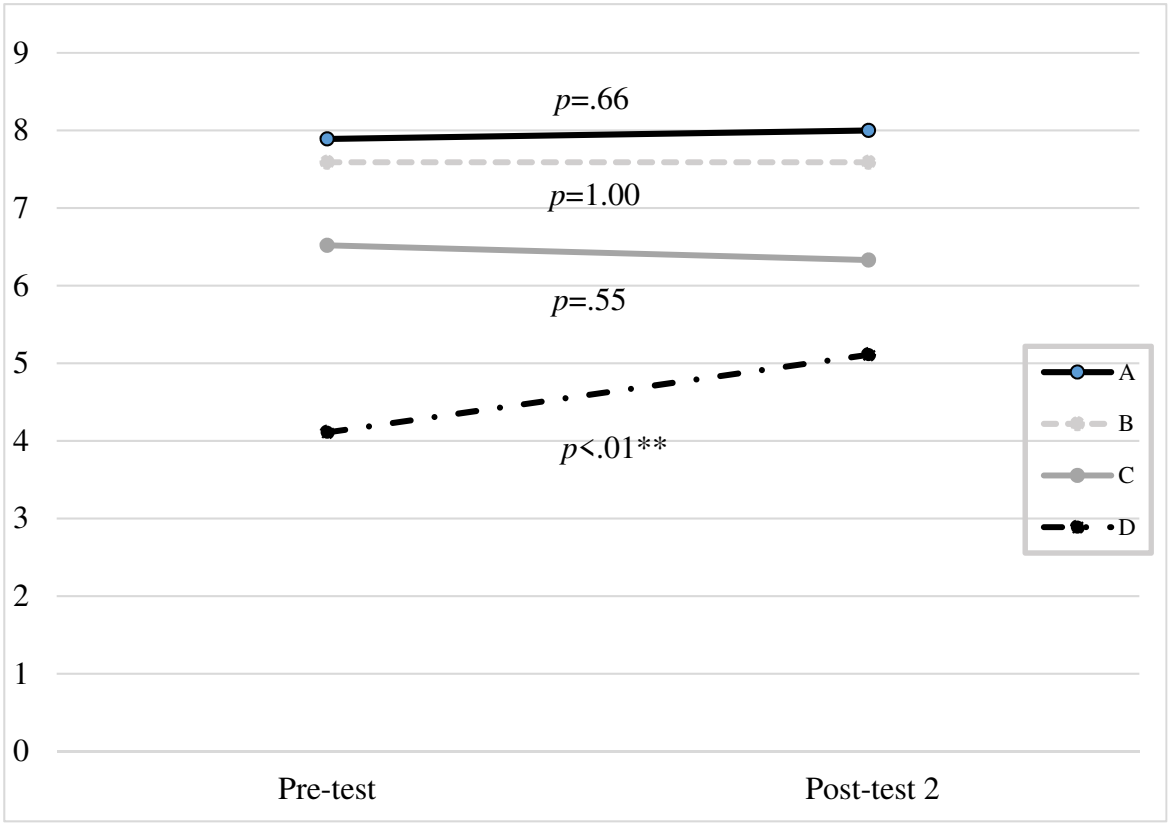


Figure 34 Results of Control Group by Types

Let's look at the results from four types by tests, which are shown graphically in Figure 35 for the Pre-tests and Figure 36 for Post-test 2. A simple interaction between groups and types was statistically significant for both Pre-test and Post-test 2, respectively (Pre-test: F (3, 210) = 2.49, p =.06; Post-test 2: F (3, 210) = 15.77, p <.001). The simple-simple main effect tests were subsequently performed (see also Table 59) and the results revealed that the differences in mean scores between four types were statistically significant in the Pre-test and Post-test 2 for both the Experimental and Control Groups, respectively (Pre-test [Experimental Group]: F (3, 210) = 80.92, p <.001; Pre-test [Control Group]: F (3, 210) = 46.92, p < .001; Post-test 2 [Experimental Group]: F (3, 210) = 10.88, p <.001; Post-test 2 [Control Group]: F (3, 210) = 45.66, p <.001). Multiple comparisons based on Bonferroni's method were conducted and the results are shown in Table 60. In Figure 35 (Pre-test) and Figure 36 (Post-test 2), grey arrows point to statistical significance, while n.s indicates not statistically significant.

In the Pre-test (see Figure 35), from the multiple comparisons results (see Table 60), all types pairs except Type A and Type B show statistically significant differences for both the Experimental and Control Groups. These results suggest that for both two groups: (a) transitive usages (Type A and Type B) were more correctly judged than intransitive usages (Type C and Type D); (b) for transitive usages, the participants had no differential difficulty in interpreting between sentences with [+animate] subjects and [-animate] subjects; and (c) for intransitive usages, the participants have more difficulty in interpreting sentences with [-animate] subjects than [+animate] subjects.

In Post-test 2 (see Figure 36), with both the Experimental and Control Groups, Type A sentences were more correctly judged than Type C and Type D, and Type B sentences were more correctly judged than Type C and Type D. No statistically significant difference was observed between Type A and Type B. However, for the Experimental Group, no statistically significant difference was observed between Type C and Type D, while for the Control Group, a statistically significant difference was observed between Type C and Type D. These results indicate that, in Post-test 2: (a) for both groups, transitive usages (Type A and Type B) were more correctly judged than intransitive usages (Type C and Type D); (b) for the Experimental Group, the participants had no differential difficulty in interpreting between sentences with [+animate] subjects and [-animate] subjects in both transitive and intransitive usages; and (c) for the Control Group, with transitive usages, the participants had no

differential difficulty in interpreting between sentences with [+animate] subjects and [-animate] subjects, whereas, with intransitive usages, the participants had more difficulty in interpreting sentences with [-animate] subjects versus [+animate] subjects.

Let's summarize the results from the four types of sentences in both the Pre-test and Post-test 2 by comparing the results between the Experimental and Control Groups. First, no statistically significant difference was shown between the results from the Experimental Group and those from the Control Group in the Pre-test except Type B, whereas in Post-test 2, the participants in the Experimental Group more correctly judged the grammaticality of all four types of sentences than the participants in the Control Group. In addition, for the Experimental Group, the participants' judgement of grammaticality for all four types of sentences improved in Post-test 2. However, in the Control Group, the participants did not show improvement in correct judgement of grammaticality for all types of sentences except Type D in Post-test 2. Note that the researcher should investigate why only Type D sentences in Post-test 2 were more correctly judged than those in the Pre-test. Finally, for the Experimental Group, there was improvement in the participants' correct judgment of grammaticality for Type D sentences and thus, influence by the subject nouns' lexical-semantic properties (i.e., animacy) was not observed in either transitive and intransitive usages after explicit instruction. In contrast, for the Control Group, the participants did not improve in correct judgement of grammaticality for Type D sentences and thus, influence from the subject nouns was still observed in intransitive usages. In conclusion, in comparing two tests (Pre-test and Post-test 2) between both groups, it can be said that the explicit instruction provided was effective for all four sentence types and this effect was maintained in Post-test 2 compared with the results from the Control Group.

Table 59 *Results of Simple-Si*mple *Main Effect Tests of Four Types on Pre-test & Post-test*

	Source	*df*	*F*-ratio	*p*-value
Experimental Group	Pre-test	3	80.92	.000
	Post-test 2	3	10.88	.000
	Error	210		
Control Group	Pre-test	3	46,92	.000
	Post-test 2	3	45.66	.000
	Error	210		

Table 60 *Results of Multiple Comparisons Between Types of Test Sentences at Each Test*

Group	Type	Pair	Differences of mean scores	*SE*	*p*-value
Experimental Group	Pre-test	Type A = Type B	-0.04	0.19	1.00
		Type A > Type C***	2.13	0.28	.00
		Type A > Type D***	3.53	0.31	.00
		Type B > Type C***	2.18	0.29	.00
		Type B > Type D***	5.58	0.30	.00
		Type C > Type D***	1.40	0.26	.00
	Post-test 2	Type A = Type B	0.07	0.14	1.00
		Type A > Type C***	1.02	0.18	.00
		Type A > Type D*	0.69	0.25	.04
		Type B > Type C***	0.96	0.21	.00
		Type B = Type D	0.62	0.26	.12
		Type C = Type D	-0.33	0.18	.73
Control Group	Pre-test	Type A = Type B	0.30	0.24	1.00
		Type A > Type C***	1.37	0.36	.00
		Type A > Type D***	3.78	0.41	.00
		Type B > Type C*	1.07	0.37	.03
		Type B > Type D***	3.48	0.39	.00
		Type C > Type D***	2.41	0.33	.00
	Post-test 2	Type A = Type B	0.41	0.19	.19
		Type A > Type C***	1.67	0.23	.00
		Type A > Type D***	2.89	0.32	.00
		Type B > Type C***	1.26	0.27	.00
		Type B > Type D***	2.48	0.34	.00
		Type C > Type D	1.22	0.28	.00

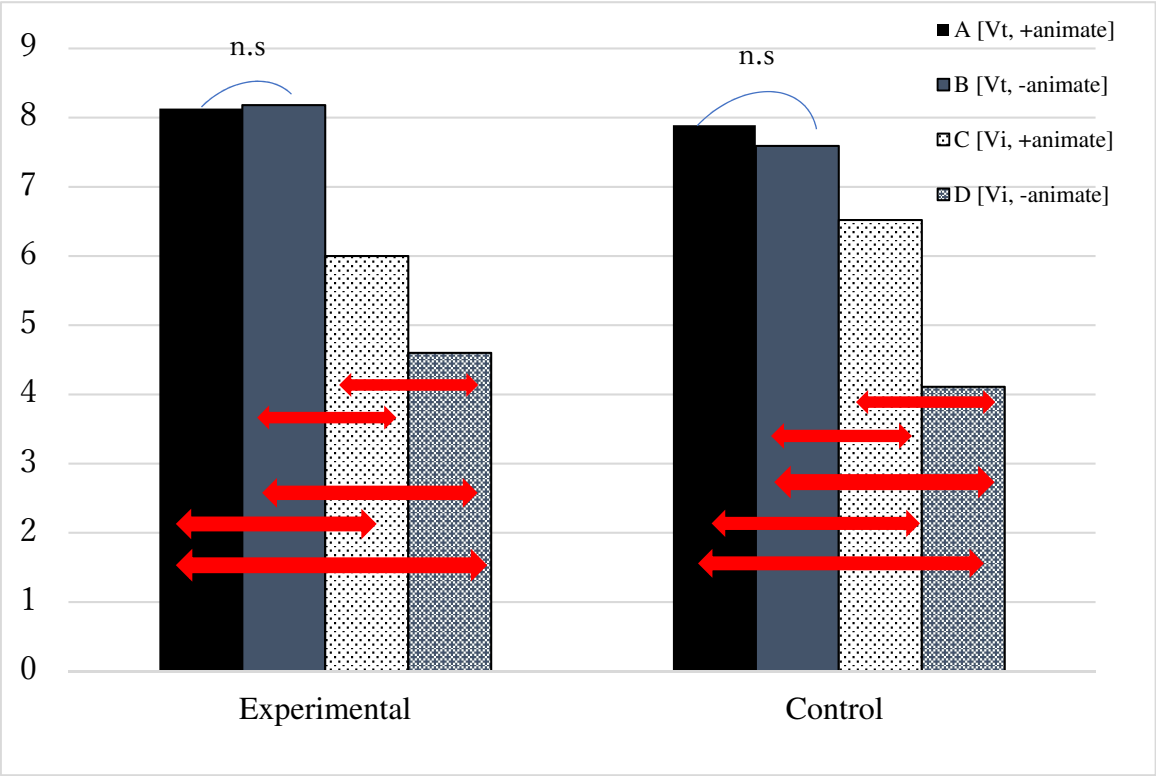


Figure 35 Results of Pre-test by Types for Two Groups

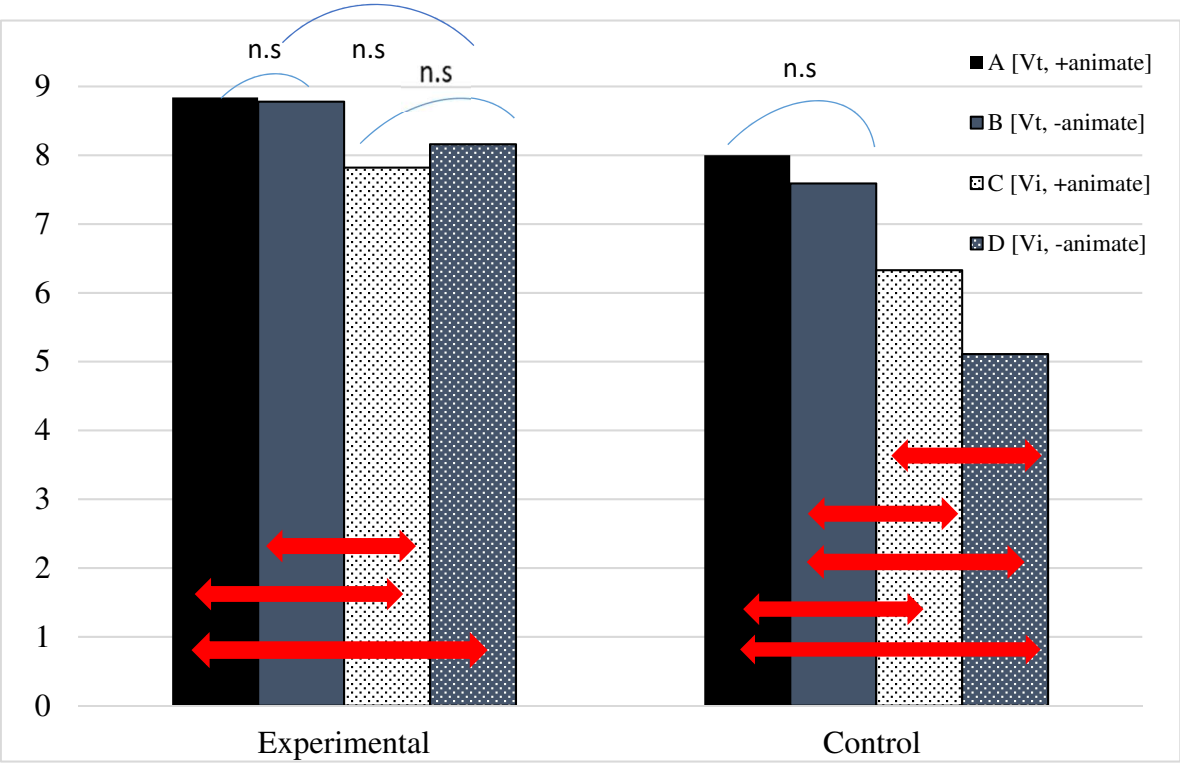


Figure 36 Results of Post-test 2 by Types for Two Groups

Furthermore, let's compare the four types of test sentences in the Intermediate and Elementary Groups to determine whether explicit instruction was effective in promoting an interpretation of these types in both English proficiency groups. The results are shown in Table 61 and graphically displayed in Figure 37 (Type A), Figure 38 (Type B), Figure 39 (Type C), and Figure 40 (Type D).

Results from the two-way mixed ANOVA test (Group: Intermediate and Elementary× Test: Pre-test, Post-test, and Post-test 2) confirmed that, for all four types, the main effect between the three GJTs was statistically significant (Type A: F (1.23, 28.34) = 10.48, p =.002, partial η^2 =.31; Type B: F (2, 46) = 7.53, p <.001, partial η^2 =.25; Type C: F (2, 46) = 31.89, p <.001, partial η^2 =.58; Type D: F (2, 46) = 67.86, p <.001, partial η^2 =.75). Multiple comparisons of each test sentence type, based on the Bonferroni's met hod, indicated that the differences in the mean scores between the Pre-test and Post-test 1 and between the Pre-test and Post-test 2 were statistically significant. However, no statistically significant difference was observed between Post-test 1 and Post-test 2. The main effect between the Intermediate and Elementary Groups was also not statistically significant (Type A: F (1, 23) = 1.05, p =.32, partial η^2 =.04, Type B: F (1, 23) = 0.01, p =.91, partial η^2 =.00; Type C: F (1, 23) = 0.02, p =.89, partial η^2 =.00; Type D: F (1, 23) = 0.43, p =.52, partial η^2 =.02).

Let's look at the results of the interaction effect between the four types. For Type A (Figure 37), the interaction effect between the two groups and the three GJTs was marginally significant statistically (F (1.23, 28.34) = 3.93, p =.05, partial η^2 =.15). However, the simple main effect between both groups on each GJT was not statistically significant (Pre-test: F (1, 23) = 3.19, p =.09, partial η^2 =.12; Post-test 1: F (1, 23) = 1.69, p =.21, partial η^2 =.07; Post-test 2: F (1, 23) = 0.93, p =.34, partial η^2 =.04).

For Type B (Figure 38), the interaction effect between both groups and the three GJTs was not statistically significant (F (2, 46) = 0.34, p =.71, partial η^2 =.02). For Type C (Figure 39), the interaction effect between both groups and the three GJTs was marginally significant statistically (F (2, 46) = 3.23, p =.05, partial η^2 =.12). However, the simple main effect between both groups on each GJT was not statistically significant (Pre-test: F (1, 23) = 0.94, p =.34, partial η^2 =.04; Post-test 1: F (1, 23) = 0.00, p =.97, partial η^2 =.00; Post-test 2: F (1, 23) = 2.92, p =.10, partial η^2 =.11). Finally, for Type D (Figure 40), the interaction effect between both groups and the three GJTs was not statistically significant (F (2, 46) = 2.33, p

=.12, partial η^2 =.09). However, since the difference in the mean scores for both groups during Post-test 2 was 1.16 at more than one point, the researcher further analyzed this statistically. The result of the Welch's *t*-test shows that the difference in the mean scores for both groups in Post-test 2 (Type D) was statistically significant (t (15.32) = -2.38, p = .03, d = -0.86). This means that, for Post-test 2, the mean scores for the Elementary Group were lower than those of the Intermediate Group, even though no statistical significance was observed between the two groups in both the Pre-test and Post-test 1.

These results indicate that the explicit instruction provided in this experiment is effective for both the Elementary and Intermediate Groups to improve with each test sentence type, with the effect lasting for 13 weeks. Moreover, the mean scores between both groups were not significantly different throughout the three GJTs. In other words, not only JLEs with high English proficiency but also those with low English proficiency can improve their degree of comprehension for all types of ergative verb usages. However, it should be noted that the JLEs in the Elementary Group faced difficulties in retaining their interpretation of the Type D sentences to the same extent as the Intermediate Group.

Table 61. *Results of Four Types of Test Sentences by Proficiency Groups*

Experimental Group	Type	Pre-test		Post-test 1		Post-test 2	
		M	*SD*	*M*	*SD*	*M*	*SD*
Intermediate	A [Vt, +animate]	7.45	1.92	9.00	0.00	8.91	0.30
	B [Vt, -animate]	7.90	1.30	8.73	0.65	8.73	0.47
	C [Vi, +animate]	6.00	1.55	8.27	0.79	8.09	1.04
	D [Vi, -animate]	4.55	1.63	8.18	1.40	8.73	0.47
Elementary	A [Vt, +animate]	8.43	0.65	8.86	0.36	8.71	0.61
	B [Vt, -animate]	8.07	0.83	8.57	0.85	8.64	0.50
	C [Vi, +animate]	6.57	1.40	8.29	0.73	7.36	1.08
	D [Vi, -animate]	4.71	1.90	8.36	0.84	7.57	1.74

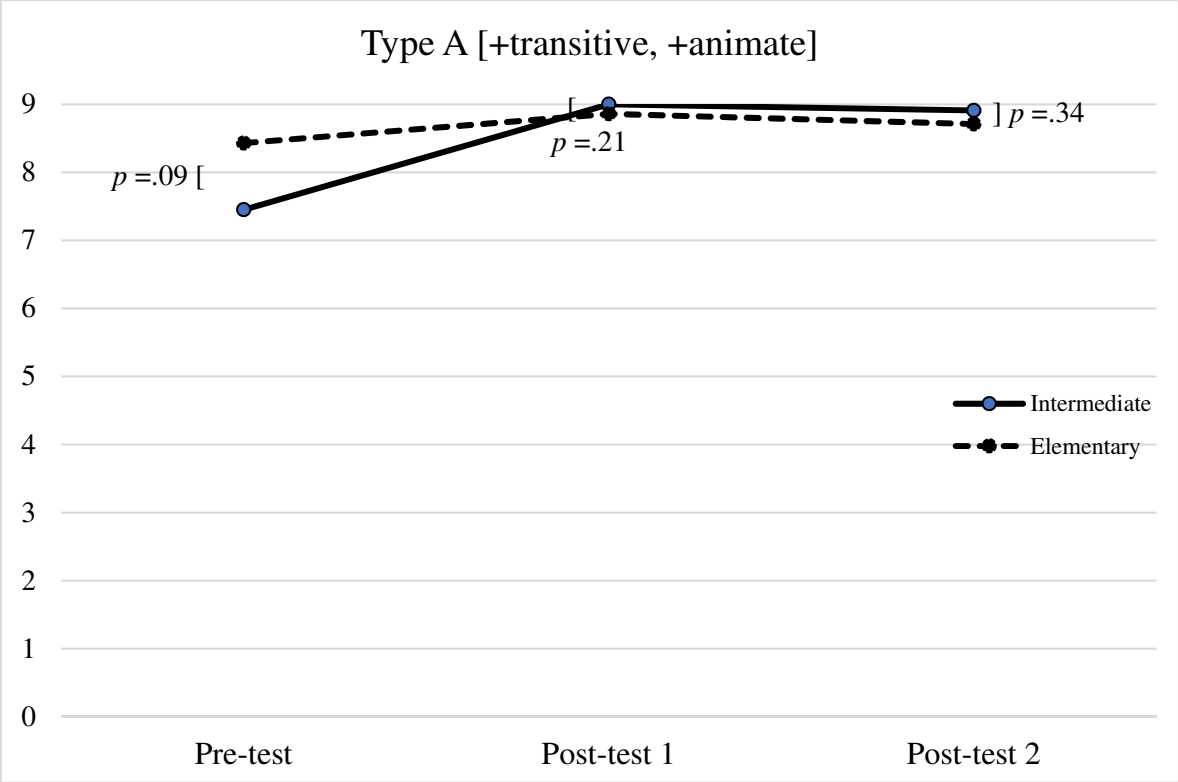


Figure 37 Results of Type A sentences by Proficiency Groups

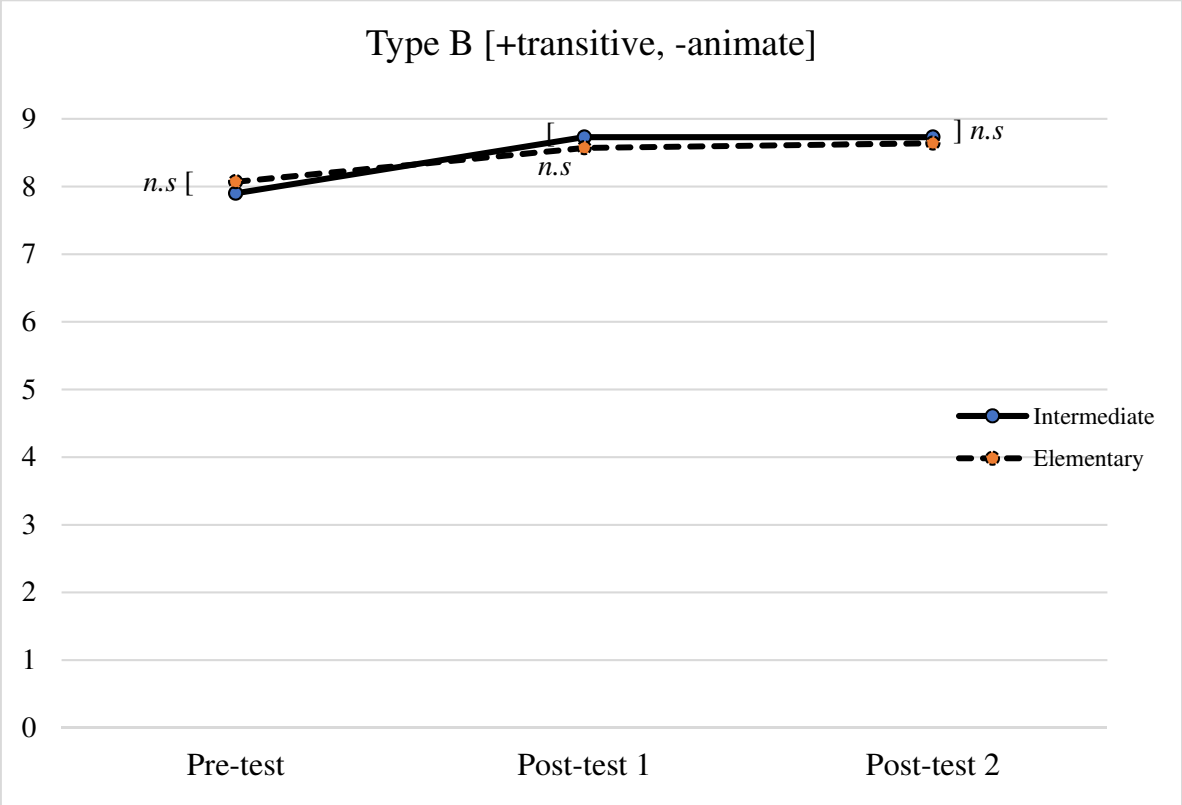


Figure 38 Results of Type B sentences by Proficiency Groups

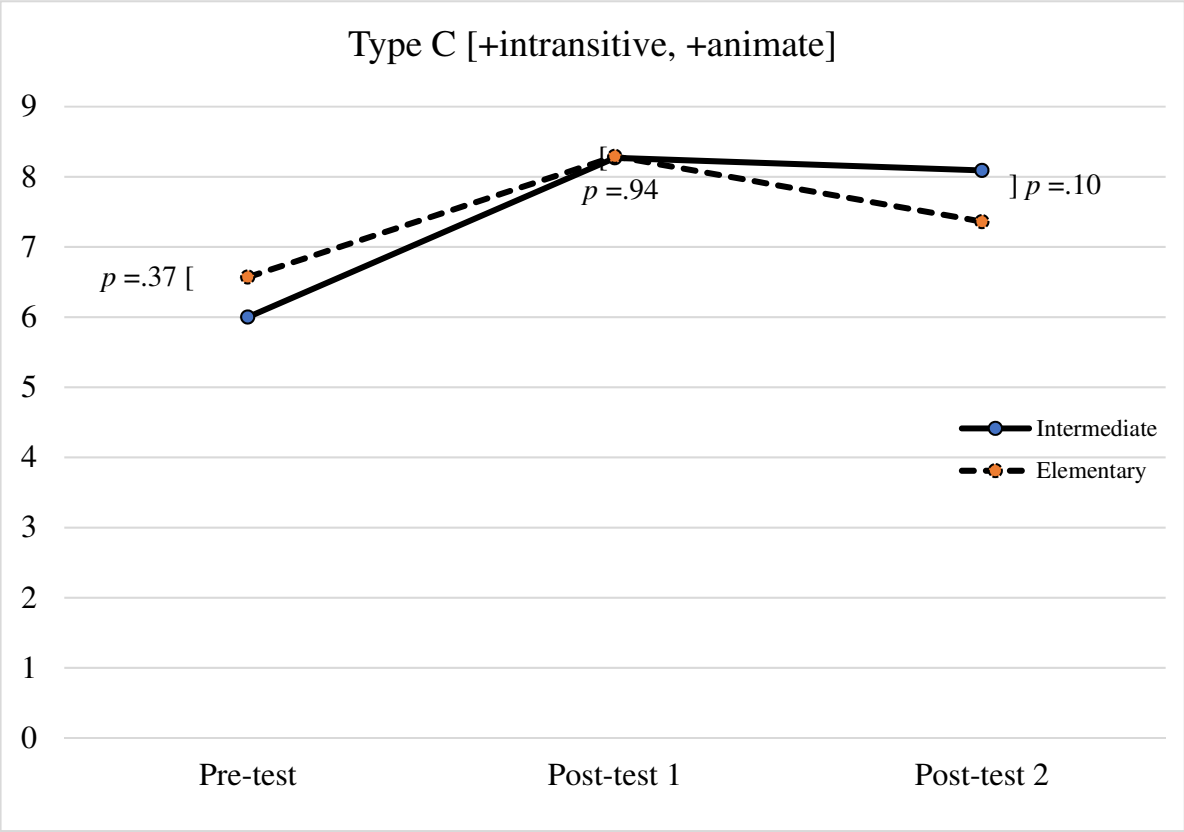


Figure 39 Results of Type C sentences by Proficiency Groups

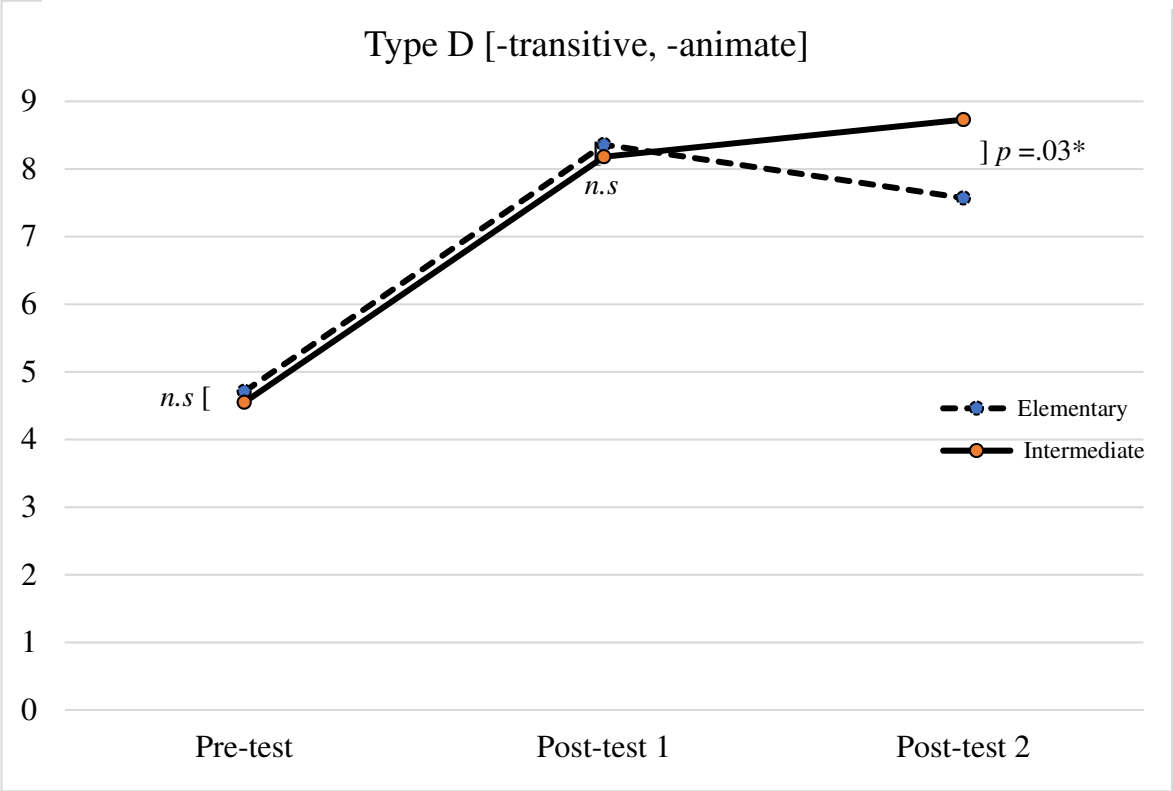


Figure 40 Results of Type D sentences by Proficiency Groups

6.5.3 Results of individual verbs.

The results for individual verbs in four types of test sentences are analyzed in this section. The purpose of the analysis was to see (a) whether explicit instruction was effective for all individual verbs, and (b) whether the effect will last at least for thirteen weeks after the instruction series.

6.5.3.1 Results for individual verbs in Type A sentences. Let's discuss the results of individual verbs in Type A [+Transitive, +Animate subject nouns], as shown in Table 62 and depicted graphically in Figure 41. As presented in Figure 41, the mean scores for all individual verbs increased between the Pre-test and Post-test 1 and remained at the same level in Post-test 2. A two-way repeated measure of ANOVA (GJTs: Pre-test, Post-test 2, Post-test 2 × Verbs: *burn, close, drop, dry, grow, open, roll, separate* and *start*) were conducted. As shown in Table 63, the results revealed that the main effects were statistically significant for the three tests but not between verbs (Tests: F (1.21, 53.26) = 15.22, p <.001, partial η^2 = .26; Verbs: F (4.85, 213.53) = 1.94, p =.09, partial η^2 =.04). The interaction effect was not statistically significant (F (16, 704) = 1.21, p =.25, partial η^2 =.03). Multiple comparisons among the three GJTs based on the Bonferroni's method showed that the differences in mean scores between the Pre-test and Post-test 1 (p <.001) and between the Pre-test and Post-test 2 (p =.002) were statistically significant respectively, while the difference in mean scores between Post-test 1 and Post-test 2 (p = .63) was not statistically significant.

Since there appeared to be no statistically significant differences between individual verbs and no statistically significant interaction between individual verbs and tests, one can argue that there were no differences in mean scores among individual verbs in the Pre-test, Post-test 1, and Post-test 2 respectively (see also Figure 42, Figure 43 & Figure 44). These results stemmed from the ceiling effect because the maximum score per verb was 1.0 and most participants were able to answer correctly with verbs in Type A sentences. In other words, it appears that the individual verbs in Type A sentences did not result in any noted differences in difficulty with interpretation.

In summary, these results indicated that the explicit instruction provided in this experiment was effective for all the verbs in Type A sentences, and the effect was maintained at least for 13 weeks after the last instruction session. However, differences in interpretation

difficultly were not observed for any of the individual verbs in Type A sentences on the three GJTs.

Table 62 *Results of Individual Verbs in Type A*

	burn	*close*	*drop*	*dry*	*grow*	*open*	*roll*	*separate*	*start*
Pre-test	0.87	0.89	0.87	0.96	0.98	0.96	0.91	0.89	0.82
Post-test 1	1.00	0.98	1.00	1.00	1.00	0.98	1.00	1.00	0.98
Post-test 2	0.98	1.00	1.00	0.98	1.00	1.00	1.00	0.93	0.96

Table 63 *Results of two-way repeated measures of ANOVA* (Tests × individual verbs in Type A)

Source	*SS*	*df*	*MS*	*F*-ratio	*p*-value	partial η^2
A (Tests)	2.07	1.05	1.98	17.44	.000***	.32
s x A	4.52	39.77	0.11			
B (Verbs)	0.36	4.29	0.08	1.53	.19	.04
s x B	8.9	163.17	0.06			
Interaction (A x B)	0.64	4.9	0.13	1.52	.19	.04

Note: +p < .10, *p < .05, **p < .01, ***p < .001

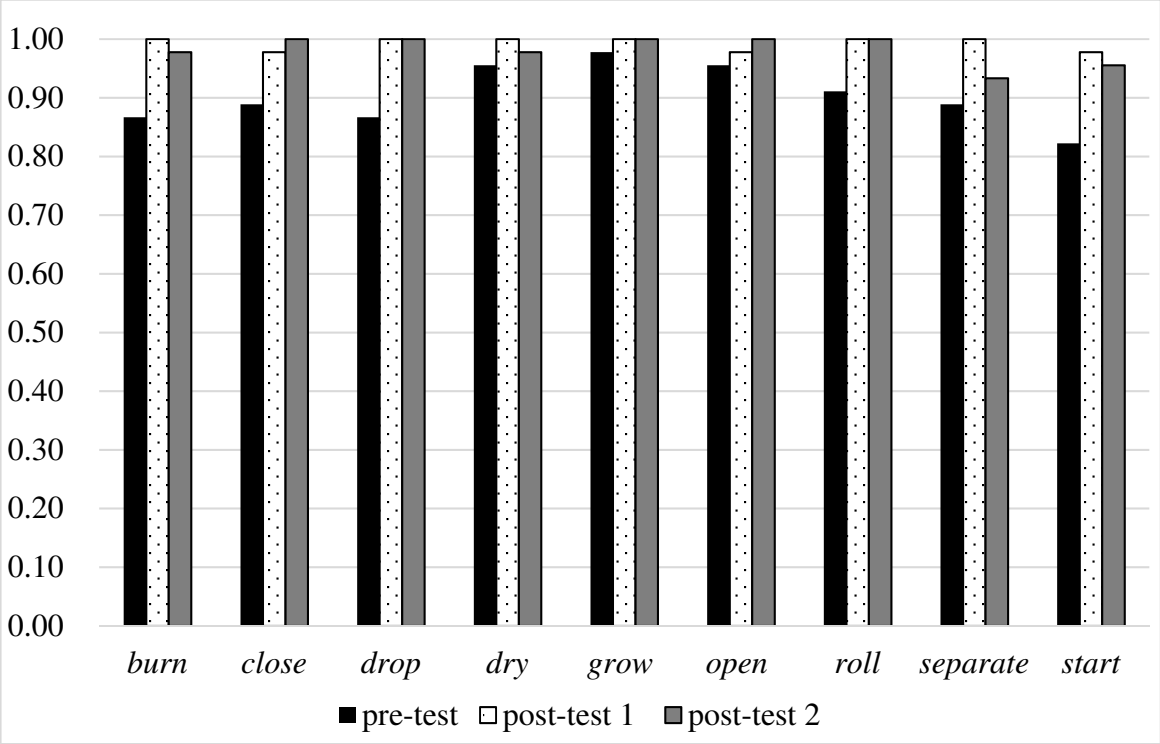


Figure 41 . Results of Individual Verbs in Type A for Three GJTs

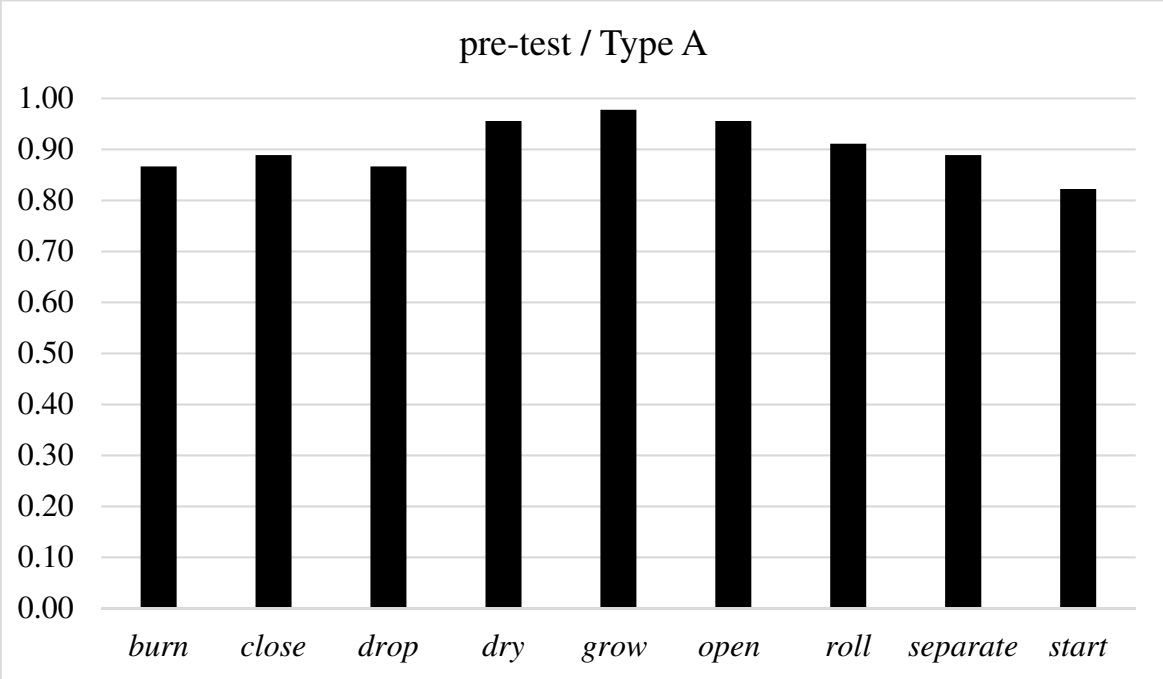


Figure 42 Results of Individual Verbs in Type A at Pre-test

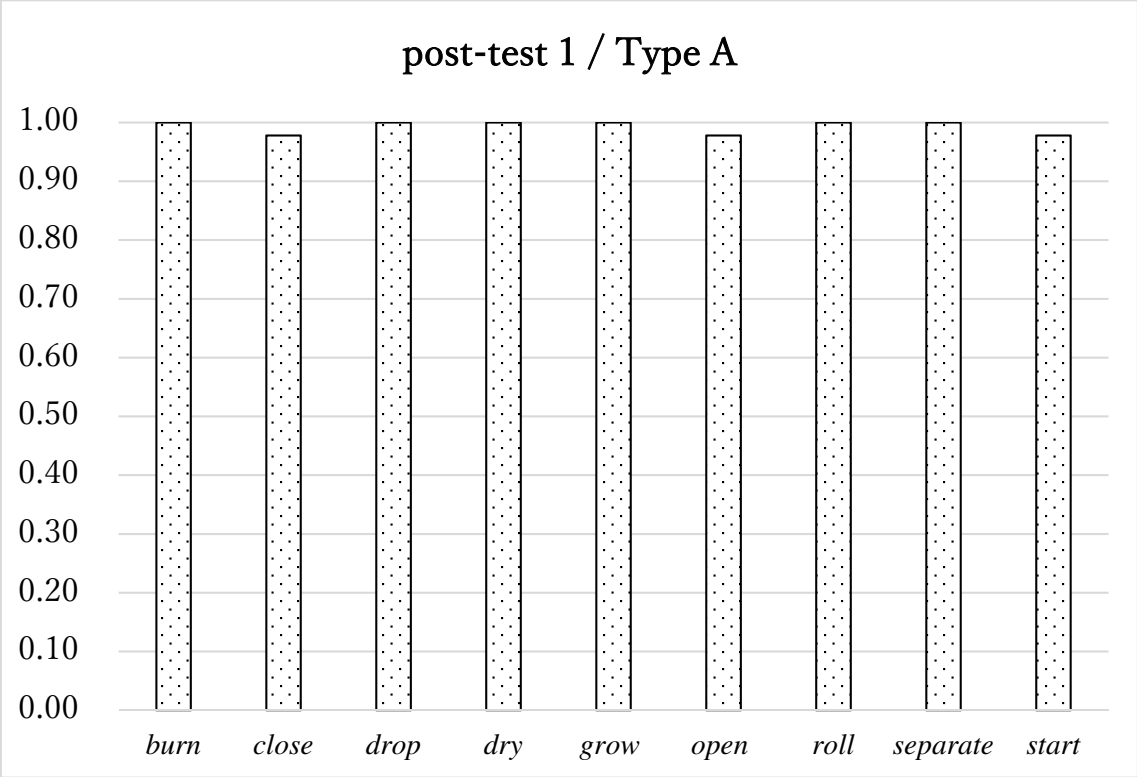


Figure 43 Results of Individual Verbs in Type A at Post-test 1

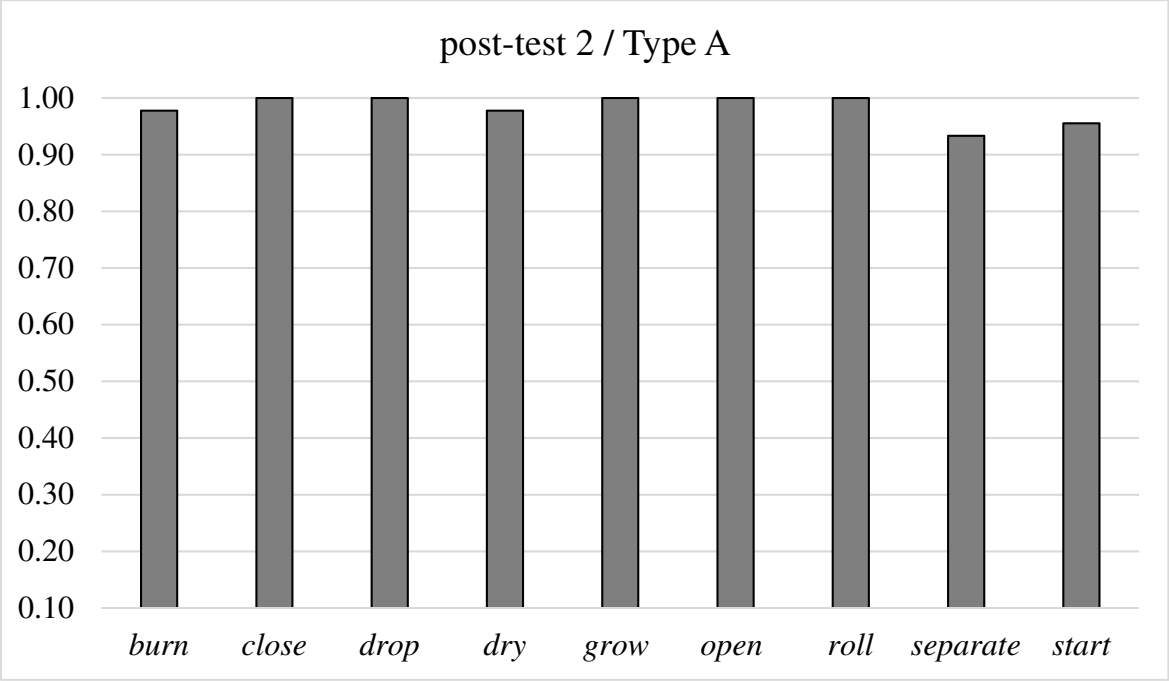


Figure 44 Results of Individual Verbs in Type A at Post-test 2

6.5.3.2 Results for individual verbs in Type B sentences. Let's discuss the results for individual verbs in Type B [+Transitive, -Animate subject nouns] as shown in Table 64. As graphically depicted in Figure 45, the mean scores for all individual verbs increased between the Pre-test and Post-test 1 and remained at the same level in Post-test 2. Two-way repeated measures of ANOVA (GJTs: Pre-test, Post-test 2, Post-test 2 × Verbs: *burn, close, drop, dry, grow, open, roll, separate* and start) were conducted. As shown in Table 65, the results revealed that the main effects were statistically significant between the three tests but not between the verbs (Tests: F (2, 88) = 11.81, p <.001, partial η^2 = .21; Verbs: F (4.78, 210.14) = 3.78, p =.003, partial η^2 =.08). The interaction effect is not statistically significant (F (16, 704) = 1.75, p =.03, partial η^2 =.04).

The simple main effects were subsequently analyzed, and the results revealed that the simple main effect for the GJTs (Pre-test, Post-test 1 and Post-test 2) for the verbs *burn* and *close* were statistically significant, respectively (*burn*: F (2, 43) = 4.65, p =.02, partial η^2 = .18; *close*: F (2, 43) = 3.66, p =.03, partial η^2 = .15). Based on the Bonferroni's method, multiple comparisons for the verb *burn* among the three GJTs indicated that the differences in mean scores between the Pre-test and Post-test 2 and between Post-test 1 and Post-test 2 were statistically significant respectively (p = .04), but not between the Pre-test and Post-test 1 (p = 1.00). Additionally, multiple comparisons for the verb *close* in the three GJTs indicated that the differences in the mean scores between the Pre-test and Post-test 2 were statistically significant (p =.03), but not between the Pre-test and Post-test 1 (p =.05) or between Post-test 1 and Post-test 2 (p = 1.00). Another finding revealed no statistically significant differences among individual verbs on the respective tests (see also Figure 46, Figure 47 & Figure 48).

These results indicated that the explicit instruction provided in this experiment was effective for the verbs *burn* and *close* in Type B sentences, and the effect was maintained for at least 13 weeks after the last instruction session. Although the mean scores for verbs other than *burn* and *close* also increased between the Pre-test and Post-test 1 and were maintained in Post-test 2, no statistical significance was observed among each test. Moreover, in a similar manner to the results for individual verbs in Type A sentences, no statistically significant differences in mean scores were observed between individual verbs in the Pre-test, Post-test 1, and Post-test 2, respectively. As discussed, the results for Type A could have been caused by the ceiling effect since the participants were able to answer correctly for the

transitive usages (both Type A and Type B). Therefore, one can argue that the differences in interpretation difficulties were not observed between individual verbs in Type B sentences on the three GJTs.

Table 64 *Results of Individual Verbs in Type B*

	burn	*close*	*drop*	*dry*	*grow*	*open*	*roll*	*separate*	*start*
Pre-test	0.87	0.80	0.93	0.91	0.96	0.96	0.96	0.87	0.93
Post-test 1	0.87	0.96	0.98	0.98	0.98	1.00	1.00	0.96	1.00
Post-test 2	1.00	0.98	1.00	1.00	0.98	0.98	1.00	0.84	1.00

Table 65 *Results of Two-way Repeated Measures of ANOVA* (Tests × individual verbs in Type B)

Source	*SS*	*df*	*MS*	*F*-ratio	*p*-value	partial η^2
A (Tests)	1.08	2	0.54	11.81	.000	.21
s x A	4.03	88	0.03			
B (Verbs)	1.42	4.78	0.30	3.78	.003	.08
s x B	16.58	210.14	0.05			
Interaction (A x B)	1.16	16	0.07	1.75	.034	.04

Note: +p < .10, *p < .05, **p < .01, ***p < .001

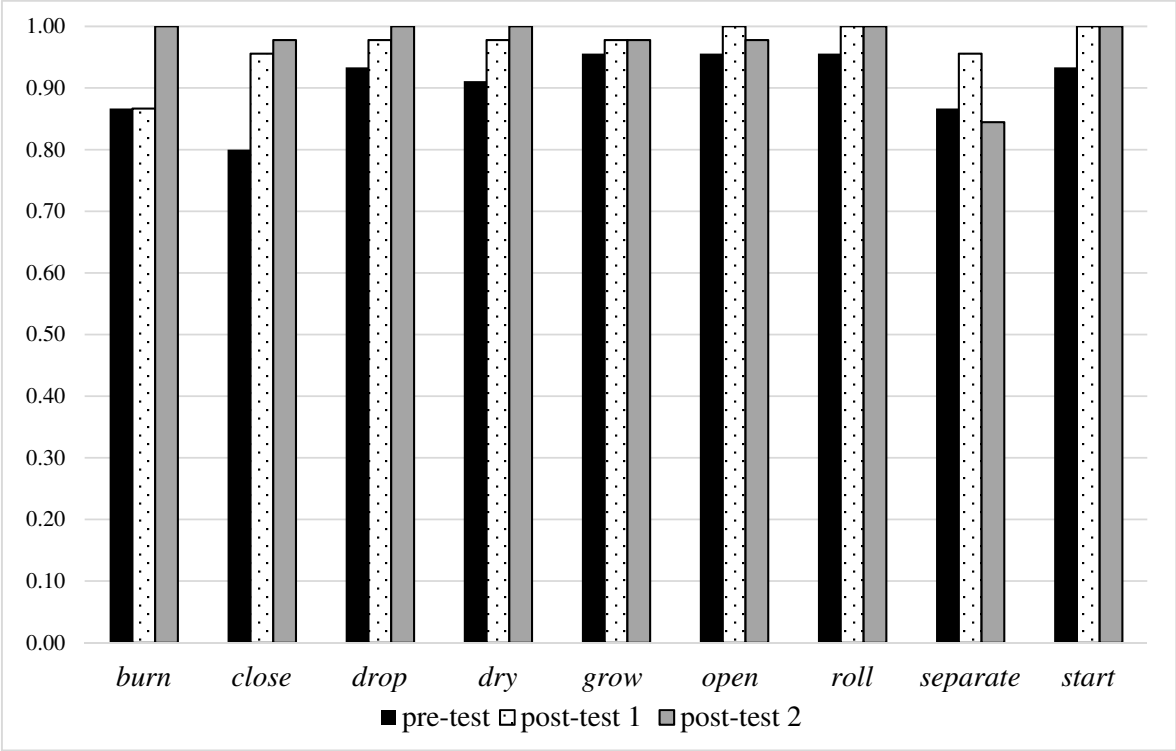


Figure 45. Results of Individual Verbs in Type B for Three GJTs

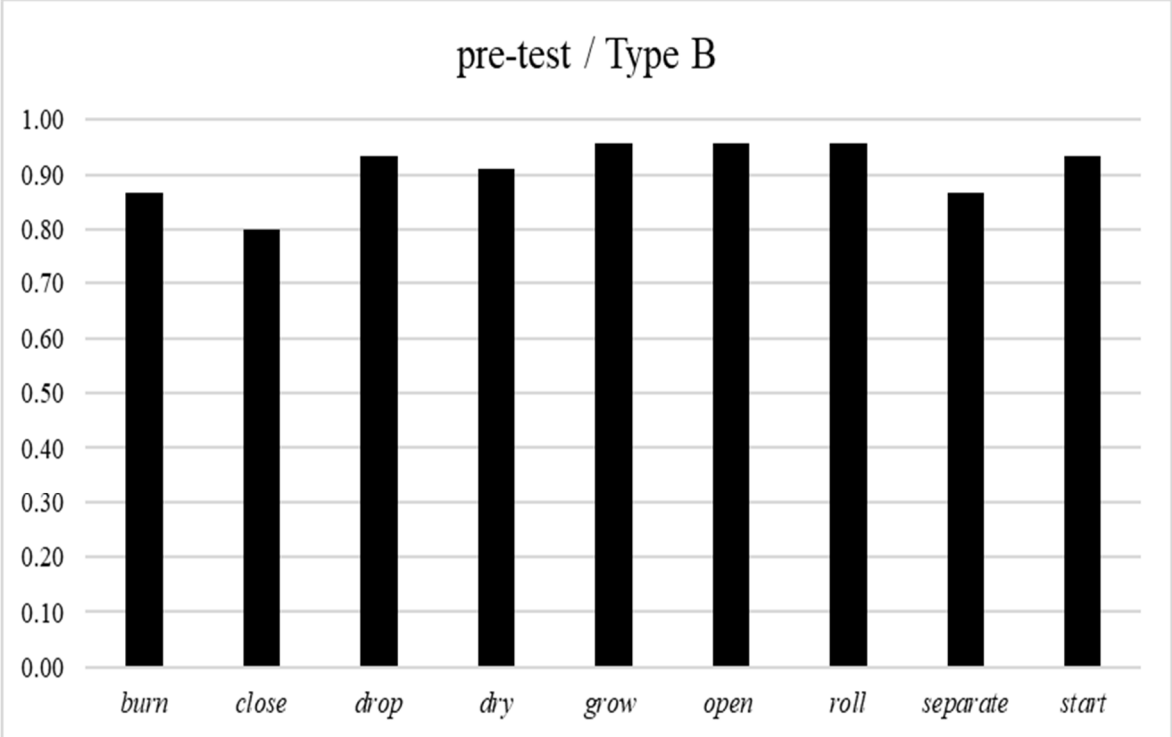


Figure 46. Results of Individual Verbs in Type B at Pre-test

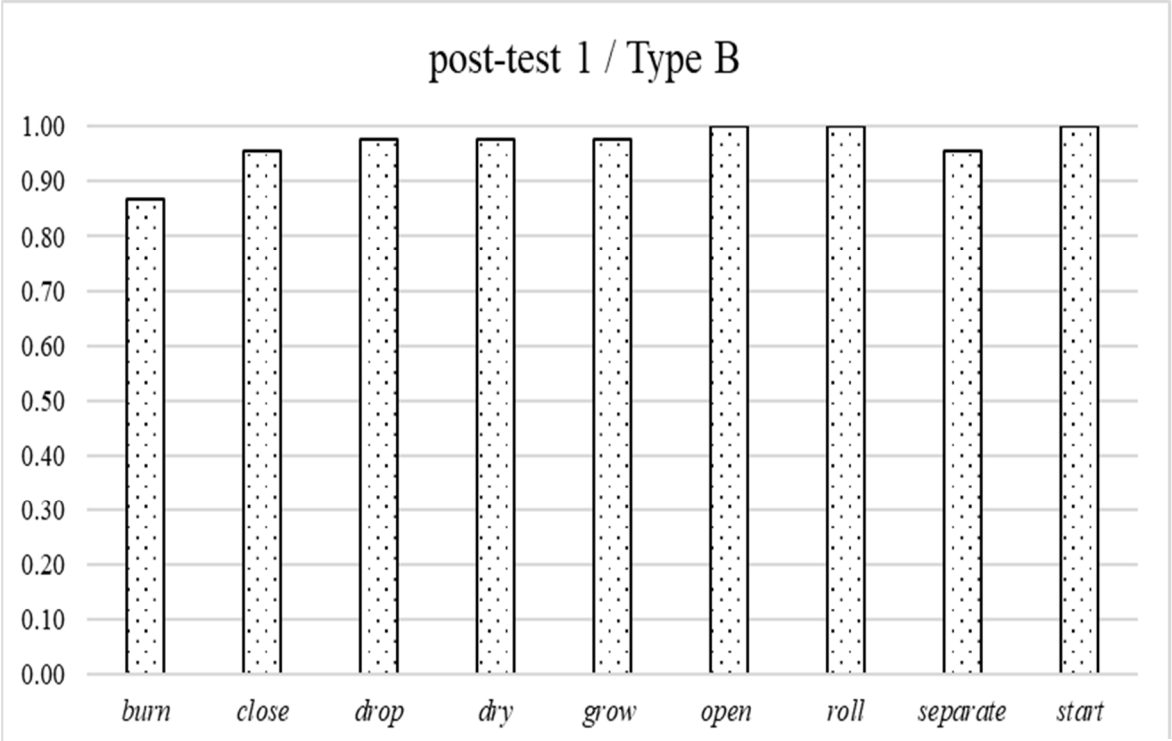


Figure 47 Results of Individual Verbs in Type B at Post-test 1

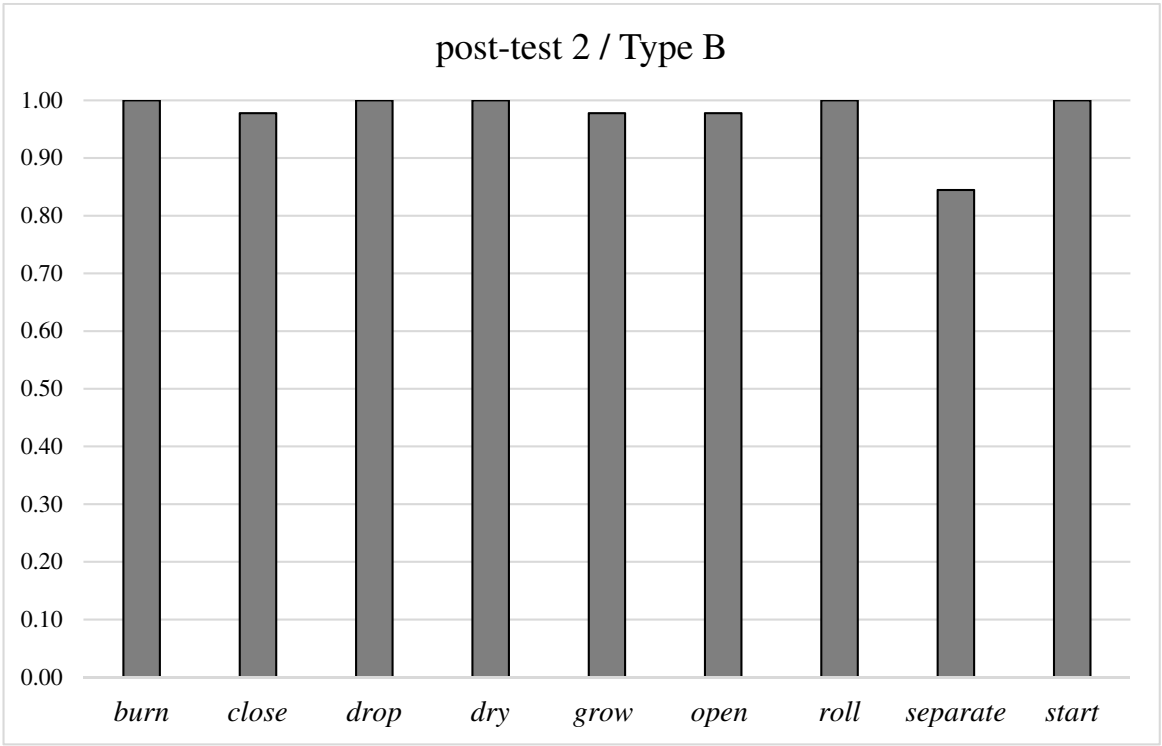


Figure 48. Results of Individual Verbs in Type B at Post-test 1

6.5.3.3 Results for individual verbs in Type C sentences. Let's discuss the results for individual verbs in Type C [-Intransitive, +Animate subject nouns], as shown in Table 66 and Figure 49. A Two-way repeated measures of ANOVA (GJTs: Pre-test, Post-test 2, Post-test 2 × Verbs: *burn, close, drop, dry, grow, open, roll, separate* and *start*) was conducted. The results revealed that respectively, the main effects between three tests and between verbs were statistically significant (Tests: F (2, 88) = 60.84, p <.001, partial η^2 =.58; Verbs: F (4.43, 194.91) = 42.08, p <.001, partial η^2 =.58). Moreover, the interaction effect was statistically significant (F (16, 704) = 6.21, p <.001, partial η^2 =.12). See Table 67.

The simple main effects were subsequently tested. As shown in Table 68, the results revealed that the simple main effects for GJTs (Pre-test, Post-test 1, and Post-test 2) for all individual verbs except *open, roll* and *start* were statistically significant, respectively (*burn*: F (2, 43) = 24.30, p <.001, partial η^2 = .53; *close*: F (2, 43) = 4.65, p =.02, partial η^2 =.18; *drop*: F (2, 43) = 8.68, p =.001, partial η^2 =.29; *dry*: F (2, 43) = 15.99, p <.001, partial η^2 =.43; *grow*: F (2, 43) = 7.82, p =.001, partial η^2 =.27; *separate*: F (2, 43) = 10.34, p <.001, partial η^2 =.32), whereas the simple main effects for GJTs with *open, roll* and *start* were not statistically significant, respectively (*open*: F (2, 43) = 0.19, p =.83, partial η^2 = .01; *roll*: F (2, 43) = 1.00, p =.32, partial η^2 =.02; *start*: F (2, 43) = 3.79, p =.06, partial η^2 =.08) .

As shown in Table 69, based on the Bonferroni's method, multiple comparisons for *burn, close, dry, grow* and *separate* among the three GJTs indicated that the differences in mean scores between the Pre-test and Post-test 1 and between the Pre-test and Post-test 2 were statistically significant, whereas those between Post-test 1 and Post-test 2 were not statistically significant. Regarding the result for *drop*, the difference in mean scores between the Pre-test and Post-test 1 was statistically significant, while those between Post-test 1 and Post-test 2 and the Pre-test and Post-test 2 were not statistically significant. By contrast, multiple comparisons for *open, roll*, and *start* in the three GJTs indicated no statistically significant differences.

These results indicated that for verbs such as *burn, close, drop, dry, grow* and *separate*, the explicit instruction provided in this experiment was effective, and this effect was maintained for at least 13 weeks after the last instruction session. On the other hand, there was no statistical significance between the three GJTs for verbs such as *open, roll* and *start*. This is because, during the Pre-test, the participants did not have difficulty in

interpreting Type C sentences with those verbs (the mean score for the Pre-test; *open*: 0.98, *roll*: 1.00, *start*: 0.96).

Another set of simple main effects were also tested to see whether the differences in mean scores could be observed among individual verbs for each GJT. The results revealed that the simple main effects among individual verbs were statistically significant for the Pre-test, Post-test 1, and Post-test 2, respectively (Pre-test: F (8, 37) = 27.81, p <.001, partial η^2 =.86; Post-test 1: F (6, 39) = 6.71, p <.001, partial η^2 =.51; Post-test 2: F (7, 38) = 8.81, p <.001, partial η^2 =.62).

Multiple comparisons based on the Bonferroni's method were conducted among individual verbs for each GJT. As presented in Figure 50 and Table 70, for Pre-test, the differences in mean scores were statistically significant between *dry, burn, separate* and the remaining individual verbs, respectively (*open, roll, start, close, drop, grow* > *dry* / *open, roll, start, close, drop, grow* > *burn* / *open, roll, start, close, drop, grow* > *separate*). Additionally, the differences in mean scores were statistically significant between *open* and *drop, grow, dry, burn, separate* (*open* > *drop, grow, dry, burn, separate*). These results indicated that on the Pre-test, *open* was the easiest to interpret among the individual verbs, whereas *dry, burn,* and *separate* were the most difficult to interpret.

On the other hand, for Post-test 1 (see Figure 51 and Table 71), the differences in mean scores were statistically significant only between *separate* and *roll, grow, drop, close, open, start*, respectively (*roll, grow*, *drop, close, open, start* < *separate*). This result meant that after the instruction sessions, the verb *separate* in Type C sentences was still the most difficult to interpret among the individual verbs. In contrast, no differential difficulty in interpretation was observed among the rest of the individual verbs in Type C sentences.

Moreover, with Post-test 2 (see Figure 52 and Table 72), *burn, dry*, and *separate* showed statistically significant differences compared to the remaining individual verbs (*burn* < *close*, *roll* / *dry* < *close, roll, grow, open* / *separate* < *close, roll, grow, open, start, drop*). Although there were no statistically significant differences with the verbs *burn* and *dry* compared to the remaining verbs in Post-test 1, after 13 weeks from the last instruction session, the participants seemed to again have difficulty in interpreting the verbs *burn* and *dry* compared to the others. The participants showed difficulty in interpreting the verb *separate* throughout the three GJTs.

For Type C sentences, it was determined that the verbs *dry, burn,* and *separate* were difficult to interpret throughout the three GJTs when compared with the other individual verbs. It is then necessary to consider the reason for this difficulty. For *burn* and *dry* in Type C sentences, it was observed that all of the incorrect answers throughout the three GJTs were revised into the passive form (e.g. *Five people were burned to death* / *Jane's body was dried*). One possibility was that the participants who selected "incorrect" may have regarded the subject nouns in Type C sentences with these verbs to be inanimate (e.g. *five people* for *burn*; *Jane's body* for *dry*) and thus, they may have overused the passive forms since they treated these sentences as Type D sentences [+intransitive, -animate subject nouns]. In other words, the participants may require external objects to cause the verb action. Once the explicit instruction sessions were over, participants initially overcame the tendency to revise these sentences into passive forms. However, after 13 weeks, some participants reverted the previous tendency.

Although explicit instruction was effective for the verb *separate*, Type C sentences with *separate* were more difficult to interpret than others throughout the three GJTs. Hence, it can be considered that the difficulty in interpretation for Type C sentences with *separate* did not stem from either the subject nouns' animacy or the grammatical rules for intransitive usages since the participants learned about those topics through the instruction sessions. Rather, the difficulty may stem from the other factors. Throughout the three GJTs, the participants who chose "incorrect" for Type C sentences with *separate* (e.g. *Mary and Tom separated 10 years ago*) tended to revise them into passive forms (e.g. *Mary and Tom were separated 10 years ago*). One possibility may be due to the influence of L1 morphological patterns. As Kondo (2009) cited, the morpheme of the intransitive verb *-e-* in *hanar-e-ru* (= *separate* in Japanese) may lead to the overuse of passive forms since *-e-* is also used in passive forms in Japanese (e.g. *ie-ga taterar-e-ta* [= *A house was built*]). Since knowledge on L1 morphological patterns was not passed on during the explicit instruction sessions, some participants would revise the sentences into passive forms

To summarize, the results for the individual verbs in Type C sentences indicated that explicit instruction was effective for all individual verbs except *open, roll,* and *start,* since these verbs in Type C sentences were already easy for the participants to interpret, as shown in the Pre-test. Additionally, Type C sentences with *dry, burn* and *separate* were more difficult than the others when compared to the results for the individual verbs. The

participants tended to revise the test sentences into passive forms for *dry* and *burn*, even in Post-test 2. The reason for this may be that they regard the subject noun's animacy to be inanimate and require external objects to cause the verb action. On the other hand, sentences with the verb *separate* were difficult to interpret throughout the three GJTs. This may be due to the influence from the L1 verb morpheme *-e-* patterns, which were not taught in explicit instruction sessions.

Table 66 *Results of Individual Verbs in Type C*

	burn	*close*	*drop*	*dry*	*grow*	*open*	*roll*	*separate*	*start*
Pre-test	0.27	0.82	0.76	0.38	0.76	0.98	0.98	0.22	0.84
Post-test 1	0.87	0.98	1.00	0.84	1.00	0.96	1.00	0.62	0.96
Post-test 2	0.73	1.00	0.89	0.71	0.98	0.98	1.00	0.56	0.96

Table 67 *Results of Two-way Repeated Measures of ANOVA (Tests × individual verbs) in Type C*

Source	*SS*	*df*	*MS*	*F*-ratio	*p*-value	partial η^2
A (Tests)	4.8	1.34	3.59	17.47	.000***	57
s x A	3.57	17.38	0.21			
B (Verbs)	3.67	8	0.46	9.29	.000***	.42
s x B	5.14	104	0.05			
Interaction (A x B)	3.15	16	0.2	3.12	.000***	.19

Note: +$p < .10$, *$p < .05$, **$p < .01$, ***$p < .001$

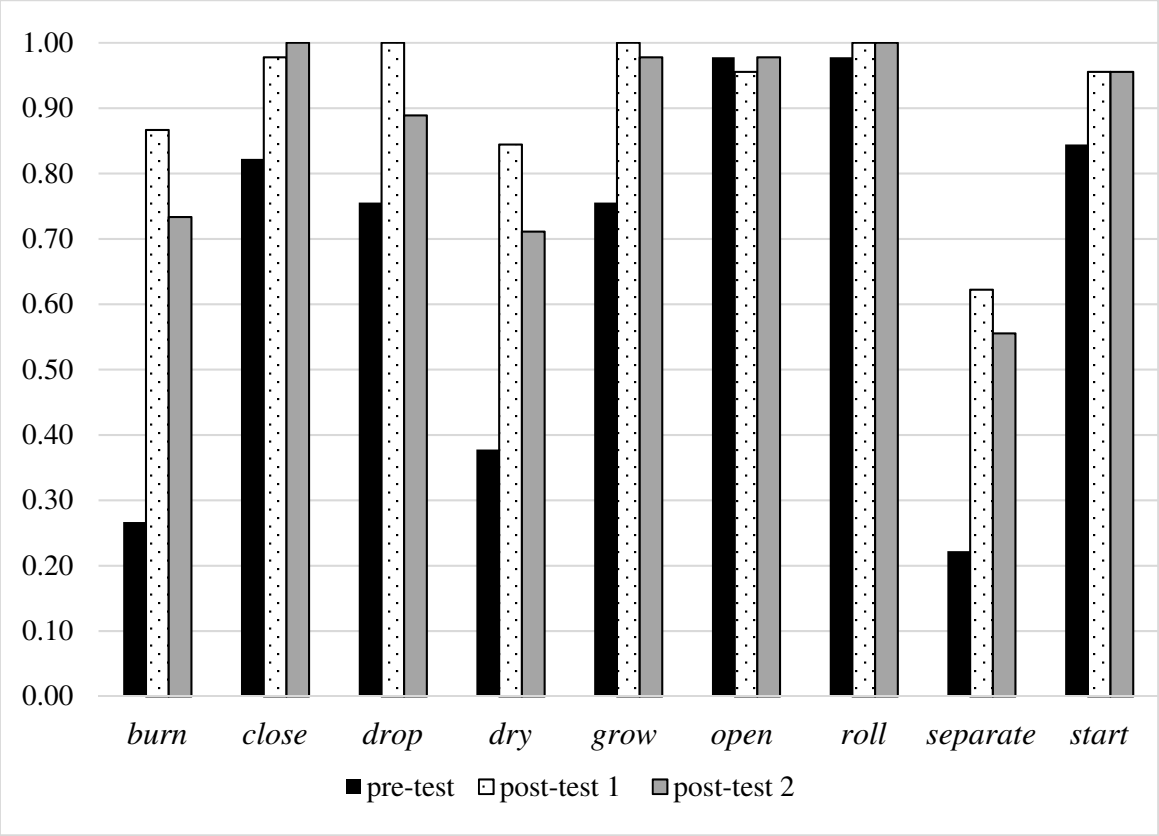


Figure 49. Results of Individual Verbs in Type C for Three GJTs

Table 68 *Results of Simple Main Effect Tests for GJTs of Individual Verbs with Type C Sentences*

verb	*df*	*F*-ratio	*p*-value	partial η^2
burn	2	24.30	.00	.53
close	2	4.65	.02	.18
drop	2	8.68	.001	.29
dry	2	15.99	.000	.43
grow	2	7.82	.001	.27
open	2	0.19	.83	.01
roll	2	1.00	.32	.02
separate	2	10.34	.000	.32
start	2	3.79	.06	.08
error	43			

Table 69 *Results of Multiple Comparisons for GJTs of Individual Verbs with Type C Sentences*

verb	pairs			differences of mean score	*SE*	*p*-value
	Pre-test	<	Post-test 1	-.60*	.09	.000
burn	Pre-test	<	Post-test 2	-.47*	.09	.000
	Post-test 1	=	Post-test 2	.13	.08	.25
	Pre-test	<	Post-test 1	-.16*	.06	.02
close	Pre-test	<	Post-test 2	-.18*	.06	.01
	Post-test 1	=	Post-test 2	.02	.02	.97
	Pre-test	<	Post-test 1	-.24*	.07	.001
drop	Pre-test	=	Post-test 2	-.13	.08	.25
	Post-test 1	=	Post-test 2	-.11	.05	.07
	Pre-test	<	Post-test 1	-.47*	.08	.000
dry	Pre-test	<	Post-test 2	-.33*	.11	.01
	Post-test 1	=	Post-test 2	-.13	.09	.41
	Pre-test	<	Post-test 1	-.24*	.07	.001
grow	Pre-test	<	Post-test 2	-.22*	.07	.01
	Post-test 1	=	Post-test 2	-.02	.02	.97
	Pre-test	=	Post-test 1	.02	.04	1.00
open	Pre-test	=	Post-test2	.00	.03	1.00
	Post-test 1	=	Post-test 2	.02	.04	1.00
	Pre-test	=	Post-test 1	-.02	.02	.97
roll	Pre-test	=	Post-test2	-.02	.02	.97
	Post-test 1	=	Post-test 2	.00	.00	*n.s*
	Pre-test	<	Post-test 1	-.40*	.10	.001
separate	Pre-test	<	Post-test2	-.33*	.08	.000
	Post-test 1	=	Post-test 2	-.07	.07	1.00
	Pre-test	=	Post-test 1	-.11	.06	.17
start	Pre-test	=	Post-test2	-.11	.06	.17
	Post-test 1	=	Post-test 2	.00	.00	*n.s*

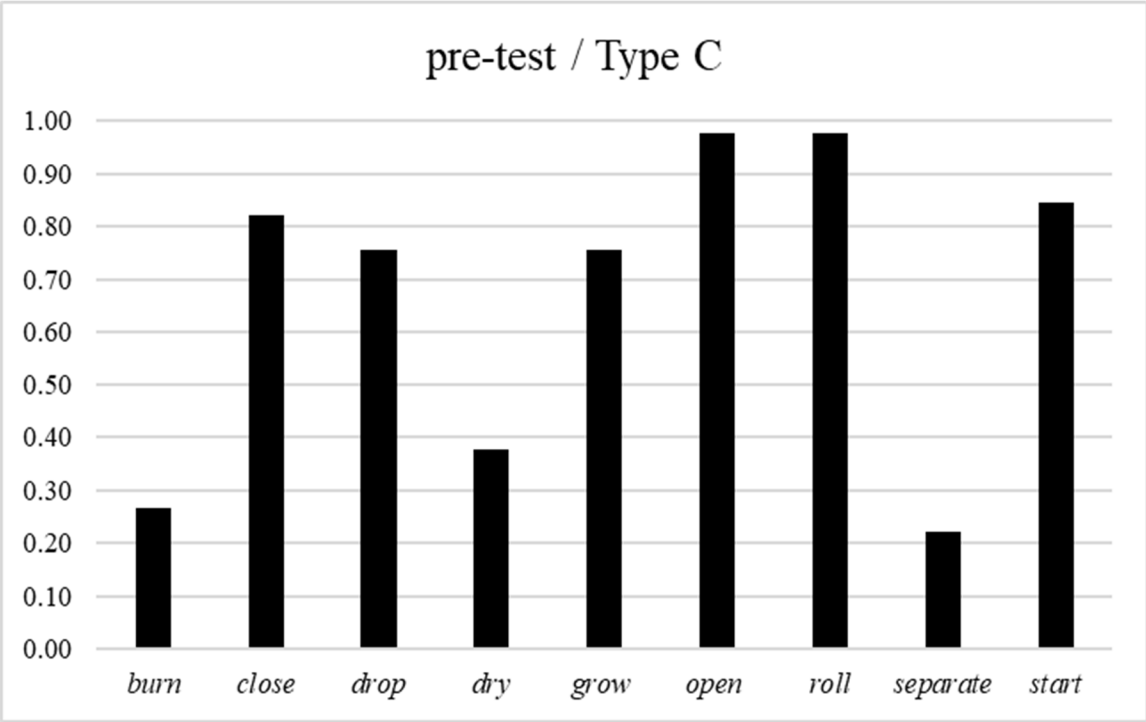


Figure 50 Results of Individual Verbs in Type C at Pre-test

Table 70 *Results of Multiple Comparisons between Individual Verbs in Type C at Pre-test*

	open	*roll*	*start*	*close*	*drop*	*grow*	*dry*	*burn*	*separate*
open									
roll	*n.s*								
start	*n.s*	*n.s*							
close	*n.s*	*n.s*	*n.s*						
drop	.034*	*n.s*	*n.s*	*n.s*					
grow	.034*	*n.s*	*n.s*	*n.s*	*n.s*				
dry	.000***	.000***	.000***	.000***	.002**	.002**			
burn	.000***	.000***	.000***	.000***	.000***	.000***	*n.s*		
separate	.000***	.000***	.000***	.000***	.000***	.000***	*n.s*	*n.s*	

Note: +p < .10, *p < .05, **p < .01, ***p < .001

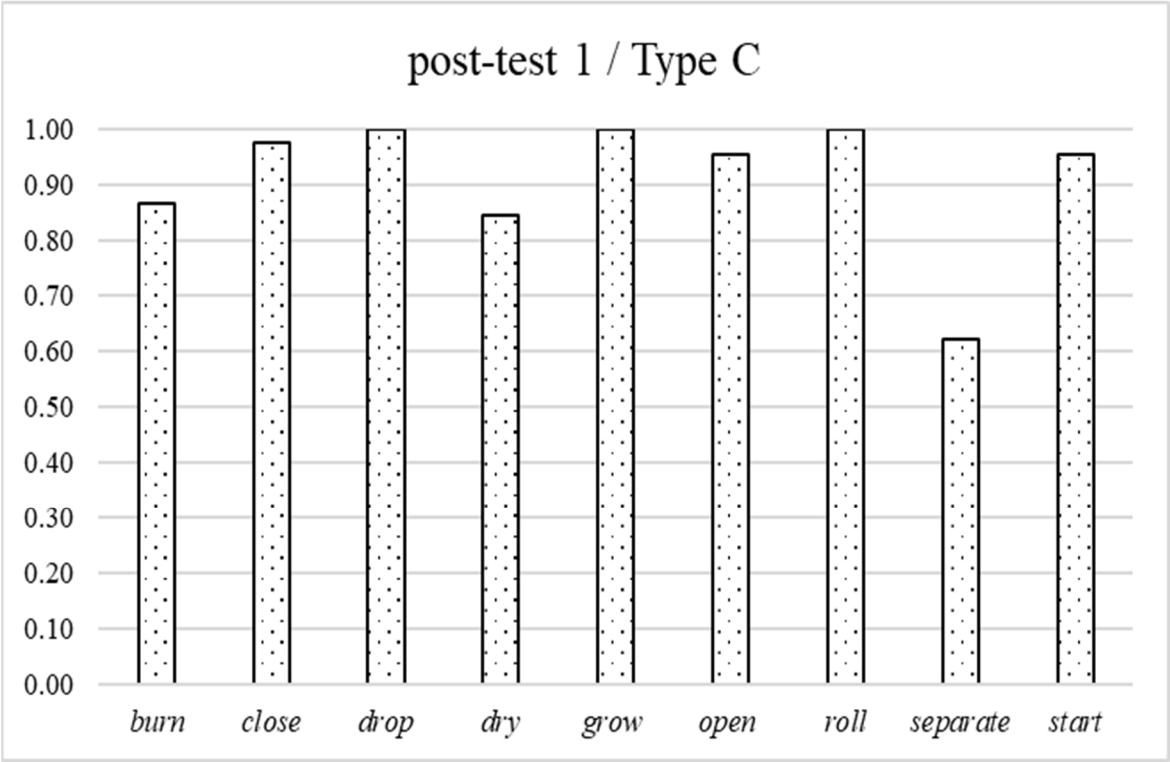


Figure 51 Results of Individual Verbs in Type C at Post-test 1

Table 71 *Results of Multiple Comparisons between Individual Verbs in Type C at Post-test 1*

	roll	*grow*	*drop*	*close*	*open*	*start*	*burn*	*dry*	*separate*
roll									
grow	*n.s*								
drop	*n.s*	*n.s*							
close	*n.s*	*n.s*	*n.s*						
open	*n.s*	*n.s*	*n.s*	*n.s*					
start	*n.s*	*n.s*	*n.s*	*n.s*	*n.s*				
burn	*n.s*	*n.s*	*n.s*	*n.s*	*n.s*	*n.s*			
dry	*n.s*	*n.s*	*n.s*	*n.s*	*n.s*	*n.s*	*n.s*		
separate	.000***	.000***	.000***	.000***	.004**	.010*	*n.s*	*n.s*	

Note: +p < .10, *p < .05, **p < .01, ***p < .001

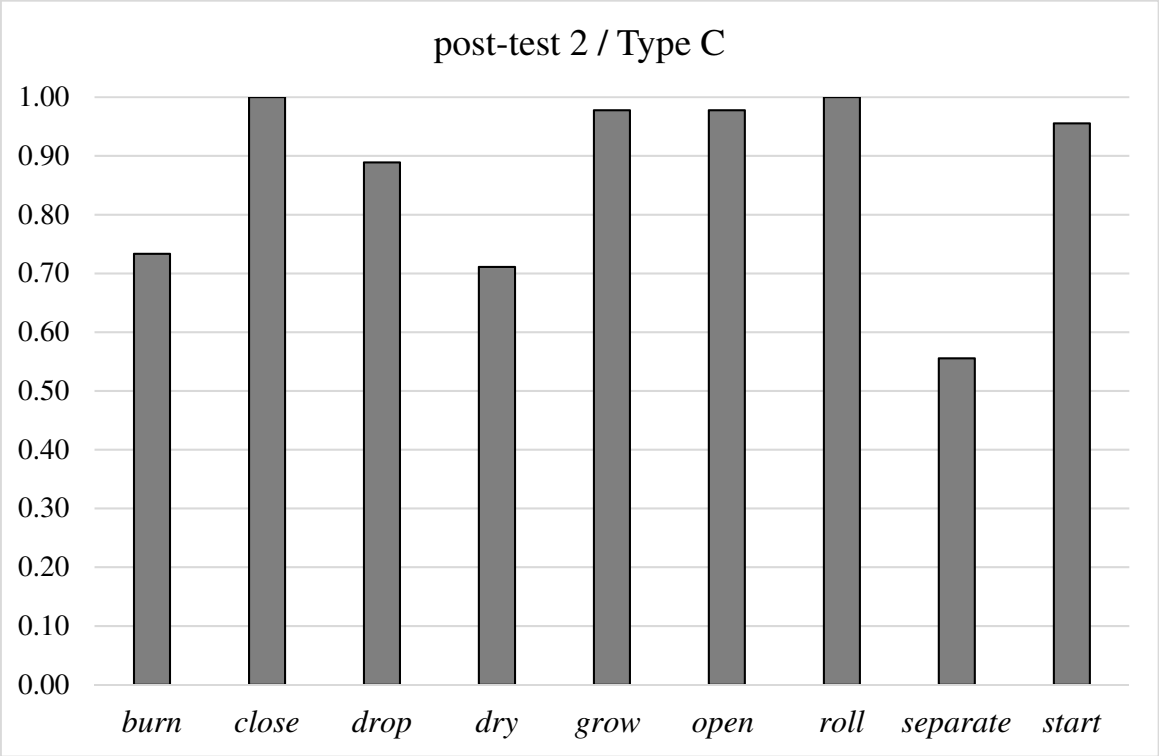


Figure 52 Results of Individual Verbs in Type C at Post-test 2

Table 72 *Results of Multiple Comparisons between Individual Verbs in Type C at Post-test 2*

	close	*roll*	*grow*	*open*	*start*	*drop*	*burn*	*dry*	*separate*
close									
roll	*n,s*								
grow	*n,s*	*n,s*							
open	*n,s*	*n,s*	*n,s*						
start	*n,s*	*n,s*	*n,s*	*n,s*					
drop	*n,s*	*n,s*	*n,s*	*n,s*	*n,s*				
burn	.009**	.009**	*n,s*	*n,s*	*n,s*	*n,s*			
dry	.004**	.004**	.028*	.009**	*n,s*	*n,s*	*n,s*		
separate	.000***	.000***	.000***	.000***	.001**	.021*	*n,s*	*n.s*	

Note: n.s.= not significant, +p < .10, *p < .05, **p < .01, ***p < .001

6.5.3.4 Results for individual verbs in Type D sentences. Let's discuss the results for individual verbs in Type D [-Intransitive, -Animate subject nouns] as shown in Table 73 and Figure 53. A two-way repeated measures of ANOVA (GJTs: Pre-test, Post-test 2, Post-test 2 × Verbs: *burn, close, drop, dry, grow, open, roll, separate* and *start*) was conducted. The results revealed that the main effects between the three tests and between verbs were statistically significant, respectively, as shown in Table 38 (Tests: F (2, 88) = 139.87, p <.001, partial η^2 = .76; Verbs: F (5.56, 244.55) = 7.98, p <.001, partial η^2 =.15). Moreover, the interaction effect was statistically significant (F (9.81, 431.78) = 5.09, p <.001, partial η^2 =.10). See Table 74.

The simple main effects were subsequently tested. As shown in Table 75, the results revealed that the simple main effects for GJTs (Pre-test, Post-test 1, and Post-test 2) for all individual verbs except were statistically significant, respectively (*burn*: F (2, 43) = 13.59, p <.001, partial η^2 = .39; *close*: F (2, 43) = 10.01, p <.001, partial η^2 =.32; *drop*: F (2, 43) = 16.69, p <.001, partial η^2 =.48; *dry*: F (2, 43) = 19.13, p <.001, partial η^2 =.47; *grow*: F (2, 43) = 5.40, p =.01, partial η^2 =.20; *open*: F (2, 43) = 60.53, p <.001, partial η^2 =.74; *roll*: F (2, 43) = 44.75, p <.001, partial η^2 =.68; *separate*: F (2, 43) = 9.48, p <.001, partial η^2 =.31; *start*: F (2, 43) = 5.38, p =.01, partial η^2 =.20). These results indicate that statistically significant differences were observed among three GJTs for all individual verbs in Type D sentences.

As shown in Table 76, with the exception of *roll,* multiple comparisons based on the Bonferroni's method for all individual verbs in the three GJTs indicated that the differences in mean scores between the Pre-test and Post-test 1 and between the Pre-test and Post-test 2 were statistically significant, whereas those between Post-test 1 and Post-test 2 were not statistically significant. Regarding the results for *roll*, the respective differences in mean scores between the Pre-test and Post-test 1, between the Pre-test and Post-test 2 and between Post-test 1 and Post-test 2 were statistically significant. These results indicated that the explicit instruction provided in this experiment was effective for all individual verbs in Type D sentences, and the effect was maintained for at least 13 weeks after the last instruction session.

Another set of simple main effects were also tested to determine whether the differences in mean scores could be observed among individual verbs for each GJT. The results revealed that the simple main effects among individual verbs were statistically

significant on the Pre-test, Post-test 1, and Post-test 2, respectively (Pre-test: F (8, 37) = 12.17, p <.001, partial η^2 =.73; Post-test 1: F (8, 37) = 2.87, p =.01, partial η^2 =.38; Post-test 2: F (8, 38) = 3.94, p =.003, partial η^2 =.42).

Multiple comparisons based on the Bonferroni's method were conducted among individual verbs on each GJT. As presented in Figure 54 and Table 77, the differences in mean scores for the Pre-test were statistically significant between *start* and *dry, drop, roll, open*, respectively (*start* > *dry, drop, roll, open*). Additionally, the differences in mean scores were statistically significant between *open* and the rest of the individual verbs (*start, close, grow, burn, separate, dry, drop, roll* > *open*). These results indicated that, on the Pre-test, *open* was the most difficult to interpret among the individual verbs, while *start* was the easiest. For the results for *open*, 36 out of 45 participants answered that the test sentence (*The can opened easily*) was incorrect, and 35 of them revised it into passive form (*The can was opened easily*). Per analysis, this result reflected the influence of subject noun's animacy; some participants may have thought that the test sentence required the external objects to cause the verb action (*open*) since the inanimate noun "*the can*" could not act on itself.

As presented in Figure 55, no statistically significant differences were observed among individual verbs for the Post-test 1 results, which indicated that the participants had no differential difficulty among individual verbs in Type D sentences due to the immediate effect of explicit instruction. However, for the Post-test 2 results (see Table 78 and Figure 56), statistically significant differences were found between *separate* and *burn, close, roll, start,* respectively, which means that 13 weeks after explicit instruction, participants had difficulty in interpreting Type D sentences with *separate* (*Water and sands separate slowly*). Twelve out of 13 participants who marked the sentence as "incorrect" revised it into passive form (*Water and sands were separated slowly*). This result was also realized in Type C sentences. Since subject nouns or the grammatical rules of intransitive usages were taught through explicit instruction, these factors should have no impact on the participants tendencies to revise intransitive usages with the verb *separate* into passive form. As mentioned in the previous section, 6.4.3, the L1 influence of the verb morpheme *-e-* in *hanar-e-ru* (= *separate* in Japan) may cause over-passivized errors in intransitive usages with *separate,* regardless of the subject noun's animacy (Type C or Type D).

To summarize, the results for individual verbs in Type D sentences indicated that the explicit instruction was effective for all individual verbs, with no differential difficulty observed in Post-test 1. However, on Post-test 2, the sentence with *separate* was difficult to interpret and some participants revised it into the passive form. Combining the results from Type C sentences, results for the verb *separate* may not be due to the influence of animacy or difficulty with grammatical rules in intransitive usages. Rather, these results could reflect the influence of the pattern from L1 verb morpheme *-e-*, which is also used in the passive form in Japanese.

As observed in Section 6.5.2, without explicit instruction, the participants for the Control Group improved the degree to which they comprehended the grammaticality for Type D sentences. In this section, the researcher analyzed and discussed why this result emerged for the Control Group by analyzing individual verb results in Type D sentences, the results for which are presented in Table 79. Wilcoxon signed-rank tests were performed between the individual verb results for the Pre-test and Post-test 2. Only the results for the verb *roll* showed a statistically significant difference between the two GJTs ($p = .007$), while there was no statistically significant difference for the remaining individual verbs. These results indicate that, without explicit instruction, the participants in the Control Group improved the degree to which they comprehended the grammaticality of Type D sentences with the verb *roll*.

Therefore, it is necessary to examine why the participants in Control Group could improve the degree of comprehension Type D sentence with *roll* on Post-test 2. Let's look at the Type D sentences with *roll* used in the GJTs: *The big rock rolled slowly* (Pre-test) and *The car tires rolled slowly* (Post-test 2). The results suggest that the differences in the degree of animacy in sentential subjects used in the Pre-test and Post-test 2 (Pre-test: *The big rock*; Post-test 2; *The car tires*) may affect the participants' grammatical judgement. In other words, the participants might regard the subject nouns *the car tires* on Post-test 2 as Agents since the sentence contains the noun *car* which moves under its own power, i.e. a more animate subject noun. By contrast, they might regard the subject noun *the big rock* on the Pre-test as Theme or Patient since a rock cannot move on its own, i.e. a less animate subject noun. Therefore, the participants tended to judge the grammaticality of *The car tires rolled slowly* on Post-test 2 as correct and the grammaticality of *The big rock rolled slowly* as incorrect. These results indicate that without explicit instruction, the participants in the

Control Group were able to answer Type D sentences on Post-test 2 better than those on the Pre-test.

Table 73 *Results of Individual Verbs in Type D*

	burn	*close*	*drop*	*dry*	*grow*	*open*	*roll*	*separate*	*start*
Pre-test	0.56	0.67	0.40	0.47	0.67	0.20	0.33	0.49	0.82
Post-test 1	0.96	0.93	0.91	0.98	0.91	0.93	0.82	0.87	1.00
Post-test 2	0.98	0.98	0.87	0.87	0.89	0.91	0.98	0.71	0.98

Table 74 *Results of Two-way Repeated Measures of ANOVA*
(Tests × individual verbs in Type D)

Source	*SS*	*df*	*MS*	*F*-ratio	*p*-value	partial η^2
A (Tests)	44.06	2	22.03	139.87	.000	.76
s x A	13.86	88	0.16			
B (Verbs)	8.07	5.56	1.45	7.98	.000	.15
s x B	44.52	244.55	0.18			
Interaction (A x B)	8.85	9.81	0.9	5.09	.000	.10

Note: +$p < .10$, *$p < .05$, **$p < .01$, ***$p < .001$, *n.s* = not significant

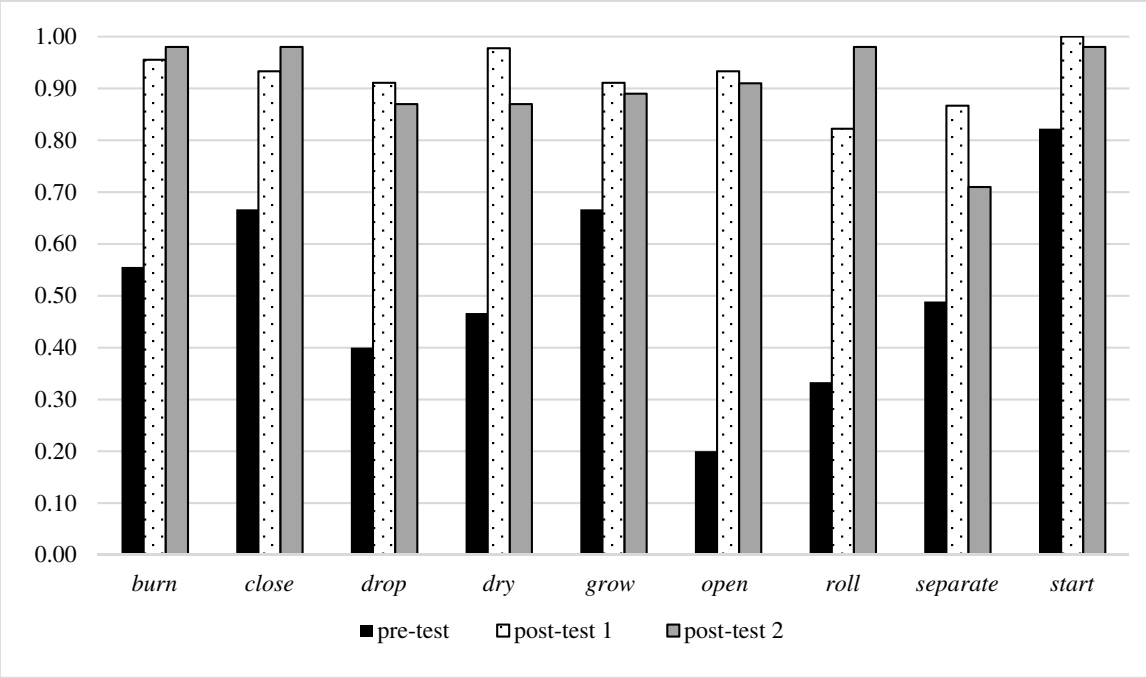


Figure 53 Results of Individual Verbs in Type D for Three GJTs

Table 75 *Results of Simple Main Effect Tests for GJTs of Individual Verbs with Type D Sentences*

verb	*df*	*F*-ratio	*p*-value	partial η^2
burn	2	13.59	.000	.39
close	2	10.01	.000	.32
drop	2	19.69	.000	.48
dry	2	19.13	.000	.47
grow	2	5.40	.01	.20
open	2	60.53	.000	.74
roll	2	44.75	.000	.68
separate	2	9.48	.000	.31
start	2	5.38	.01	.20
error	43			

Table 76 *Results of Multiple Comparisons for GJTs of Individual Verbs with Type D Sentences*

verb	pair			difference of mean scores	*SE*	p-value
	Pre-test	<	Post-test 1	-.40*	.08	.000
burn	Pre-test	<	Post-test 2	-.42*	.08	.000
	Post-test 1	=	Post-test 2	.02	.04	1.00
	Pre-test	<	Post-test 1	-.27*	.07	.001
close	Pre-test	<	Post-test 2	-.31*	.07	.000
	Post-test 1	=	Post-test 2	.04	.04	.97
	Pre-test	<	Post-test 1	-.51*	.09	.000
drop	Pre-test	<	Post-test 2	-.47*	.08	.000
	Post-test 1	=	Post-test 2	-.04	.07	1.00
	Pre-test	<	Post-test 1	-.51*	.08	.000
dry	Pre-test	<	Post-test 2	-.40*	.09	.000
	Post-test 1	=	Post-test 2	-.11	.06	.17
	Pre-test	<	Post-test 1	-.24*	.08	.01
grow	Pre-test	<	Post-test 2	-.22*	.08	.02
	Post-test 1	=	Post-test 2	-.02	.07	1.00
	Pre-test	<	Post-test 1	-.73*	.07	.000
open	Pre-test	<	Post-test 2	-.71*	.08	.000
	Post-test 1	=	Post-test 2	-.02	.05	1.00
	Pre-test	<	Post-test 1	-.48*	.09	.000
roll	Pre-test	<	Post-test 2	-.64*	.07	.000
	Post-test 1	<	Post-test 2	.16*	.06	.02
	Pre-test	<	Post-test 1	-.38*	.09	.000
separate	Pre-test	<	Post-test 2	-.22*	.08	.03
	Post-test 1	=	Post-test 2	-.16	.08	.15
	Pre-test	<	Post-test 1	-.18*	.06	.01
start	Pre-test	<	Post-test 2	-.16	.06	.05
	Post-test 1	=	Post-test 2	-.02	.02	.97

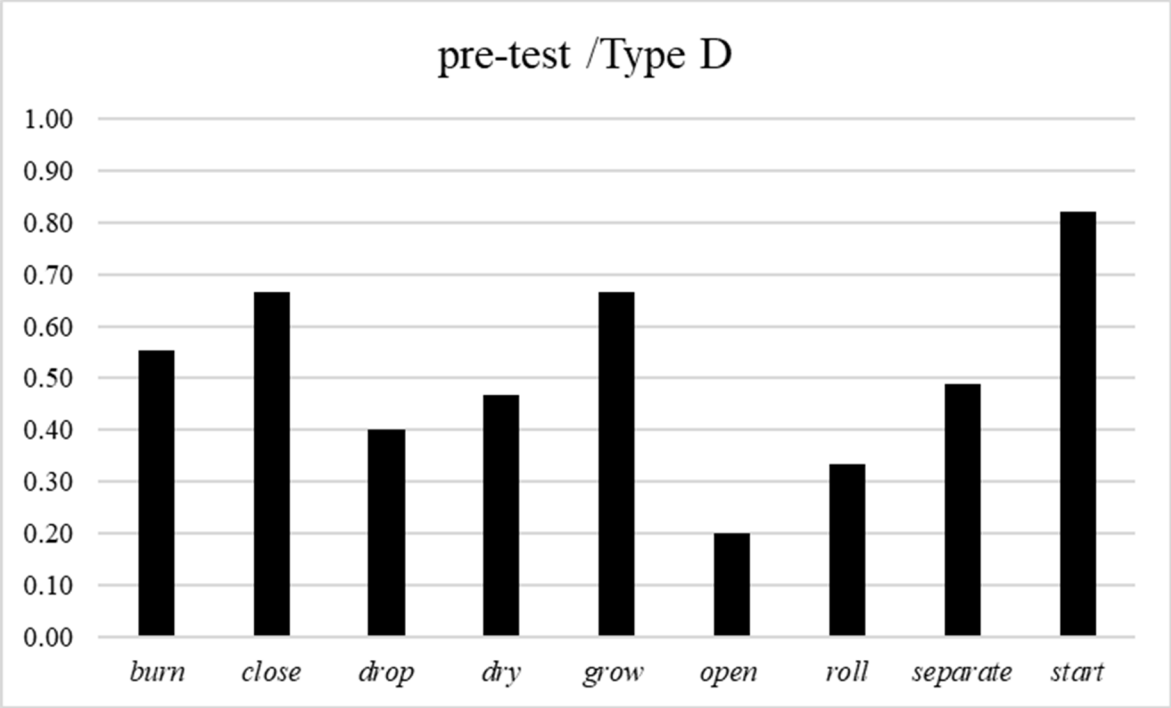


Figure 54 Results of Individual Verbs in Type D at Pre-test

Table 77 *Results of Multiple Comparisons between Individual Verbs in Type D at Pre-test*

	start	*close*	*grow*	*burn*	*separate*	*dry*	*drop*	*roll*	*open*
start									
close	*n,s*								
grow	*n,s*	*n,s*							
burn	*n,s*	*n,s*	*n,s*						
separate	*n,s*	*n,s*	*n,s*	*n,s*					
dry	.005**	*n,s*	*n,s*	*n,s*	*n,s*				
drop	.001***	*n,s*	*n,s*	*n,s*	*n,s*	*n,s*			
roll	.000***	*n,s*	*n,s*	*n,s*	*n,s*	*n,s*	*n,s*		
open	.000***	.000***	.002**	.005**	.014*	.005**	.001***	.000***	

Note: +p < .10, *p < .05, **p < .01, ***p < .001, *n.s* = not significant

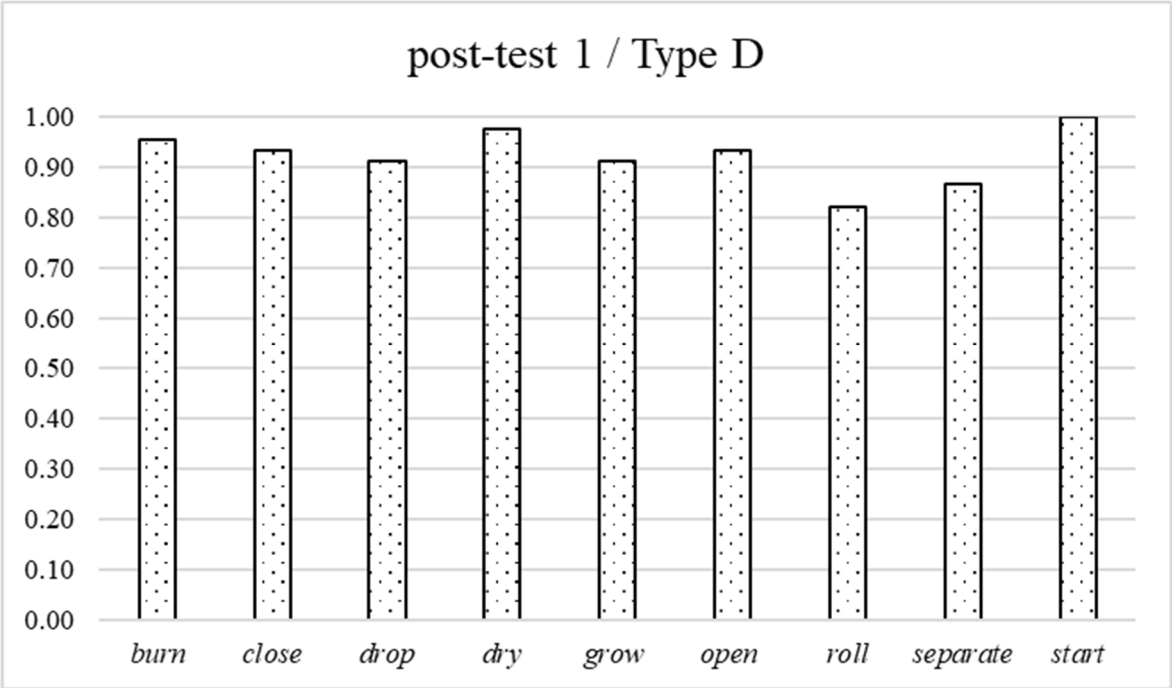


Figure 55 Results of Individual Verbs in Type D at Post-test 1

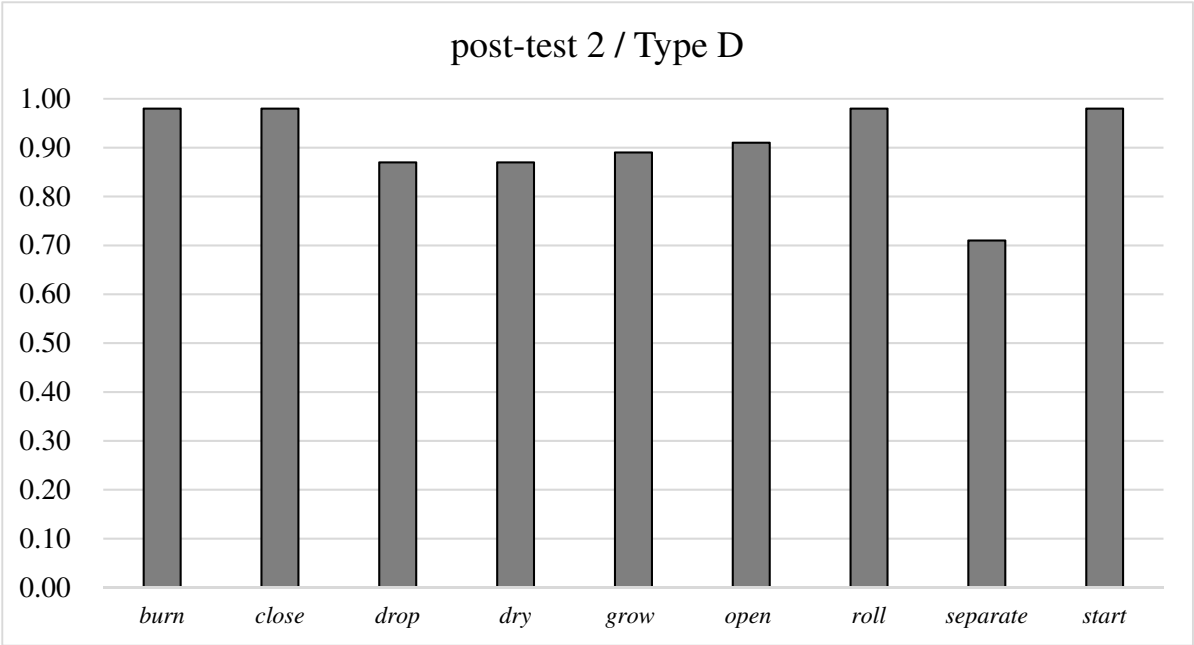


Figure 56 Results of Individual Verbs in Type D at Post-test 2

Table 78 *Results of Multiple Comparisons between Individual Verbs in Type D at Post-test 2*

	burn	*close*	*roll*	*start*	*open*	*grow*	*drop*	*dry*	*separate*
burn									
close	*n.s*								
roll	*n.s*	*n.s*							
start	*n.s*	*n.s*	*n.s*						
open	*n.s*	*n.s*	*n.s*	*n.s*					
grow	*n.s*	*n.s*	*n.s*	*n.s*	*n.s*				
drop	*n.s*	*n.s*	*n.s*	*n.s*	*n.s*	*n.s*			
dry	*n.s*	*n.s*	*n.s*	*n.s*	*n.s*	*n.s*	*n.s*		
separate	.009**	.028*	.009**	.028*	*n.s*	*n.s*	*n.s*	*n.s*	

Note: +p < .10, *p < .05, **p < .01, ***p < .001, n.s = not significant

Table 79 *Results of Individual Verbs in Type D: Control Group*

verb	Pre-test *M*	Post-test 2 *M*	z-value	p-value	effect size (r)
burn	0.41	0.59	1.29	.20	.25
close	0.63	0.59	0.38	.70	.07
drop	0.37	0.37	0.00	1.00	.00
dry	0.63	0.59	0.33	.73	.06
grow	0.56	0.70	1.41	.16	.27
open	0.15	0.30	1.41	.15	.27
roll	0.19	0.56	2.79	.007**	.51
separate	0.44	0.59	1.26	.21	.24
start	0.74	0.81	0.63	.53	.12

Note: z-value & p-value were calculated by *Wilcoxon signed-rank test*

6.5.3.5 Summary of results for individual verbs. To summarize the results for individual verbs, the following points were determined. For transitive usages (Type A and Type B sentences), although the effect of explicit instruction was seen throughout the three GJTs, the differential difficulties among individual verbs were not observed except with some verbs in Type B sentences (*burn*, *close*). This is because the participants did not have difficulty in interpreting Type A and Type B sentences, which created a ceiling effect.

In contrast, for intransitive usages (Type C and Type D sentences), although the effect of explicit instruction was seen on all individual verbs, the differential difficulty in interpretation among them for Type D sentences was observed in all three GJTs except Post-test 1. For Type C sentences, the verbs *burn* and *dry* were difficult to interpret on the Pre-test and this difficulty was observed again in Post-test 2. It is assumed that some participants may have regarded the animate subjects as inanimate subjects, which led to over-passivized Type C sentences. Another finding with Type C sentences was that the verb *separate* was difficult to interpret throughout the three GJTs. The influencing factor here may be that the L1 verb morpheme *-e-* in *hanar-e-ru* (= *separate* in Japanese) affects the interpretation of Type C sentences with *separate*. Because this comparison to L1 was not discussed during the explicit instruction sessions, some JLEs may revise these sentences into the passive form . Likewise, for Type D sentences, *separate* was more difficult to interpret than the rest of the individual verbs on Post-test 2. Thus, regardless of the subject noun's animacy, [+animate] or [-animate], the participants tended to have difficulty with interpreting intransitive usages with *separate* even after the explicit instruction sessions. For Type D sentences, with the exception of *separate*, since no differential difficulty was observed among the individual verbs on Post-test 1 and Post-test 2, one could argue that the explicit instruction was effective for all individual verbs in Type D sentences and the effect was maintained for 13 weeks after the last explicit instruction session.

6.5.4 Individual Learners Results

6.5.4.1 Results of Type D sentences. It is important to note whether all individual participants improved their interpretations of ergative verb structures after a series of explicit instruction sessions. Therefore, in the following analysis, the performance of individual learners is examined. In particular, the analysis focused on the results from Type D sentences

since it was determined that this type was the most difficult to interpret among the four ergative verb structures (Types A to D).

Individual analyses were conducted by comparing the number of correct answers on Type D sentences between the Pre-test and Post-test 1 and between Post-test 1 and Post-test 2, respectively. Let's look at individual analysis by proficiency groups (Elementary and Intermediate) to see if the participants in both proficiency levels increased the numbers of correct answers between tests, irrespective of level. Table 80 and Table 81 summarize the individual results for the Intermediate Group. On Post-test 1 (Table 80), all of the JLEs in Intermediate Group (11 JLEs, 100%) improved their results on Type D sentences from the Pre-test and the result of chi-square test also confirms the statistically significant differences between those who improved their scores, maintained the same scores as the Pre-test, or decreased their scores from the Pre-test ($\chi^2(2) = 22$, $p < .001$, $\varphi = 1.41$). On Post-test 2 (Table 81), two JLEs (18.2%) improved their results on Type D sentences from Post-test 1, seven JLEs (63.2%) maintained the same scores, and scores for two JLEs (18.2%) decreased. No statistically significant difference was observed between those who improved their scores, maintained the same scores as Post-test 1, or decreased their scores ($\chi^2(2) = 4.55$, $p = .10$, $\varphi = .64$).

Table 82 and Table 83 summarize the individual results for the Elementary Group. For Post-test 1 (Table 82), 13 out of 14 JLEs (92.9%) improved their results for Type D sentences from the Pre-test and one JLE (9.1%) maintained the same scores. In contrast, no JLEs' results were worse than those on the Pre-test. The results from the chi-square test also confirmed statistically significant differences between those who improved their scores, maintained the same scores, or decreased their scores from the Pre-test ($\chi^2(2) = 22.43$, $p < .001$, $\varphi = 1.23$). On Post-test 2 (Table 83), two JLEs (13.4%) improved their results on Type D sentences from Post-test 1, six JLEs (42.9%) maintained the same scores, and scores for six JLEs (42.9%) were worse. No statistically significant difference was observed between those who improved their scores, maintained the same scores, or decreased their scores from Post-test 1 ($\chi^2(2) = 2.29$, $p = .32$, $\varphi = .40$).

Therefore, after a series of explicit instruction sessions, both proficiency groups, even those with low English proficiency (Elementary Group), improved or maintained their scores from Pre-test. After 13 weeks, however, some JLEs from both groups were not able to maintain the scores attained on Post-test 1 and some maintained the same scores. The

crucial point is that, after a series of explicit instruction sessions, participants did not appear to have greater difficulty in interpreting Type D sentences on Post-test 1 than on the Pre-test. Instead, all were able to improve or maintain the degree of understanding of Type D sentences. Hence, the individual results suggest that the explicit instruction provided in this study was effective, and none of the JLEs who participated in this study exhibited a poor understanding of Type D sentences after the instruction. However, since some JLEs' comprehension levels decreased between the immediate Post-test 1 and 13 weeks from the last teaching session, it was necessary to further investigate why they did not maintain long-term understanding.

I reviewed the individual learners' results for Type D sentences in detail by focusing on the Elementary Group since 6 out of 14 (42.9%) did not maintain the same scores on Post-test 2 that they achieved on Post-test 1. Figure 57 (Pre-test), Figure 58 (Post-test 1), and Figure 59 (Post-test 2) present the individual learner results for Type D sentences. The participants were presented from top to bottom in the order of higher scores based on the results of the Pre-test ("+" indicates a correct answer and "-" indicates an incorrect answer). *Start* (the left end) had the highest mean score for Type D (the right end), while *open* had the lowest one. In Figure 58, all participants in the Elementary Group answered more than 7 out of 9 questions (77.78%) and gave the correct answer for the sentence with the most difficult verb, *open* (test sentence: *The cashbox opened easily*). On Post-test 2 (Figure 59), all participants in the Elementary Group except S34, S40 and S33 were able to answer more than 7 out of 9 tokens. It appears that the mean score for Type D sentences in the Elementary Group decreased due to the results of these three learners on Post-test 2: S34 (score: 5); S40 (score: 5); and S33 (score: 4). The common test sentences to which these three participants responded incorrectly contained the verbs *separate* (test sentence: *Water and sands separate slowly)* and *open* (test sentence: *The cashbox opened easily*). Therefore, those who were unable to maintain the same level of grammatical knowledge from Post-test 1 to Post-test 2 may have been influenced by L1 morphological patterns for the verb *separate* and subject noun animacy for the verb *open*, in addition to their low English proficiency.

These results can be supported by the participants' comments following Post-test 2: "*My understanding verb transitivity and intransitivity is not good, and I could not overcome this struggle* (S40)*", "In this class, I learned to distinguish between verb transitivity and*

intransitivity, of which I had a shallow understanding (S34)*," "Since I did not study English for a while (during new year's holiday), my skills have deteriorated* (S30)*."*

Therefore, although the explicit instruction provided in this study was effective and all the participants in the Elementary Group improved or maintained their understanding on Post-test 1, some JLEs like S34, S40, and S33 scored poorly on Post-test 2. For future studies, it is necessary to consider low-proficiency learners' needs when redesigning the contents of metalinguistic explanations and exercises.

Table 80 *Results of Individual Learners at Pre-test & Post-test 1 on Type D sentences: Intermediate Group (n =11)*

Test			Number of the participants	%
Pre-test	<	Post-test 1	11	100.0%
Pre-test	=	Post-test 1	0	0.0%
Pre-test	>	Post-test 1	0	0.0%
SUM			11	100.0%

Table 81 *Results of Individual Learners at Post-test 1 & Post-test 2 on Type D sentences: Intermediate Group (n =11)*

Test			Number of the participants	%
Post-test 1	<	Post-test 2	2	18.2%
Post-test 1	=	Post-test 2	7	63.6%
Post-test 1	>	Post-test 2	2	18.2%
SUM			11	100.0%

Table 82 *Results of Individual Learners at Pre-test & Post-test 1 on Type D sentences: Elementary Group (n =14)*

Test			Number of the participants	%
Pre-test	<	Post-test 1	13	92.9%
Pre-test	=	Post-test 1	1	9.1%
Pre-test	>	Post-test 1	0	0.0%
SUM			14	100.0%

Table 83 *Results of Individual Learners at Post-test 1 & Post-test 2 on Type D sentences: Elementary Group (n =14)*

Test			Number of the participants	%
Post-test 1	<	Post-test 2	2	15.4%
Post-test 1	=	Post-test 2	6	42.9%
Post-test 1	>	Post-test 2	6	42.9%
SUM			14	100.0%

No	Pre-test *start*	*grow*	*close*	*burn*	*separate*	*dry*	*drop*	*roll*	*open*	SUM
S30	+	-	+	+	+	+	+	+	+	8
S6	+	+	+	-	+	+	+	+	-	7
S38	+	-	+	+	+	+	-	+	+	7
S15	+	+	+	-	+	+	+	-	-	6
S36	+	-	+	+	+	+	-	-	+	6
S34	+	+	+	+	+	-	-	-	-	5
S41	+	+	-	+	+	-	-	-	+	5
S21	+	+	-	+	-	+	-	-	-	4
S32	+	+	-	-	-	+	+	-	-	4
S40	+	+	+	-	-	+	-	-	-	4
S24	+	+	-	-	-	-	+	-	-	3
S44	-	-	+	+	+	-	-	-	-	3
S31	+	+	-	-	-	-	-	-	-	2
S33	+	-	+	-	-	-	-	-	-	2

Figure 57. Individual learner results for Type D sentences on Pre-test: Elementary Group

No	Post-test 1 *start*	*grow*	*close*	*burn*	*separate*	*dry*	*drop*	*roll*	*open*	SUM
S30	+	+	+	+	+	+	+	+	+	9
S6	+	+	+	+	+	+	+	+	+	9
S38	+	-	+	+	+	+	-	+	+	7
S15	+	+	+	+	+	+	-	+	+	8
S36	+	+	+	+	-	+	+	+	+	8
S34	+	+	+	+	+	+	-	-	+	7
S41	+	+	+	+	+	+	+	+	+	9
S21	+	+	+	+	+	+	+	+	+	9
S32	+	+	+	+	+	+	+	+	+	9
S40	+	+	+	+	+	+	+	+	+	9
S24	+	+	+	+	+	+	+	+	+	9
S44	+	+	+	+	+	+	-	+	+	8
S31	+	+	+	+	+	+	+	+	+	9
S33	+	+	-	+	-	+	+	+	+	7

(Note: + indicates a correct answer attained on Post-test 1)

Figure 58. Individual learner results for Type D sentences on Post-test 1: Elementary Group

No	Post-test 2									SUM
	start	*grow*	*close*	*burn*	*separate*	*dry*	*drop*	*roll*	*open*	
S30	+	+	+	+	+	+	+	+	+	9
S6	+	+	+	+	+	+	+	+	+	9
S38	+	+	+	+	+	-	-	+	+	7
S15	+	+	+	+	+	+	-	+	+	8
S36	+	+	+	+	+	+	+	+	+	9
S34	+	-	+	-	-	+	+	+	-	5
S41	+	+	+	+	+	+	+	+	-	8
S21	+	+	+	+	-	+	+	+	+	8
S32	+	+	+	+	+	+	+	+	+	9
S40	+	-	+	+	-	+	-	+	-	5
S24	-	+	-	+	+	+	+	+	+	7
S44	+	+	+	+	+	+	+	+	+	9
S31	+	+	+	+	+	+	+	+	+	9
S33	+	+	+	+	-	-	-	-	-	4

(Note: + indicates a correct answer attained on Post-test 2)

Figure 59. Individual learner results for Type D sentences on Post-test 2: Elementary Group

6.5.4.2 Results of cluster analysis. Let us further examine the results of individual learners by focusing on the individual verb results on Type D sentences. Based on the Pre-test results for Type D sentences, the participants in the Experimental Group could be divided into three groups through a cluster analysis. They are Cluster 1 (n = 8), Cluster 2 (n = 10) and Cluster 3 (n = 27). For cluster analysis, I employed the Ward method with the squared Euclidean distance technique (See Table 84 & Appendicies H). The individual verbs and the results are presented in the order of difficulty based on the results of Pre-test (the easiest: *start*, the most difficult: *open*).

The Pre-test results of Cluster 1 demonstrated the statistically significant differences with those of Cluster 2 and Cluster 3 (Cluster 1 & 2: $U = 2$, $p < .001$, $r = .81$, Cluster 1& 3: $U = 33.50$, $p = .002$, $r = .51$), and also a statistically significant difference was found between the results of Cluster 2 and Cluster 3 ($U = 40.00$, $p = .001$, $r = .54$). Thus, the results of the participants in Cluster 1 were significantly lower than those belonging to Cluster 2 and Cluster 3. In particular, the participants in Cluster 1 experienced more difficulty in interpreting the usage of the verb *start* (the verbs for which the JLEs gave the highest score among Type D sentences) than that in Cluster 2 and 3. By contrast, the results of the participants in Cluster 2 were significantly higher than those belonging to Cluster 1 and Cluster 3. Then, I analyze the results of Type D by the participants on each cluster.

Table 84 *Results of Each Cluster on Type D sentences (Pre-test)*

	Cluster 1 (n=8)	Cluster 2 (n=10)	Cluster 3 (n=27)	Statistical significances
start	0.00	1.00	1.00	Cluster 1<2, 1<3
grow	0.38	0.50	0.81	
close	0.50	1.00	0.59	Cluster 1<2, >-3
burn	0.38	0.70	0.56	
separate	0.63	0.90	0.30	Cluster 2>3
dry	0.25	0.80	0.41	
drop	0.38	0.50	0.37	
roll	0.38	0.20	0.37	
open	0.00	0.80	0.04	Clusters 1<2,2>3
SUM	2.88	6.40	4.44	Clusters 1<2, 1<3. 2>3

The results of Cluster 1. Let us examine the results of each cluster. As for Cluster 1, Table 85 and Figure 60 show the individual verb results for three tests. On Pre-test, the participants in Cluster 1 may not have understood the intransitive structures well irrespective of the degree of inanimacy of subject nouns. Compared with the other two clusters, their overall score for Type D sentences was lower, and most importantly, all of them could not answer Type D sentences with *start* and *open* (e.g., *start: The meeting will start at 8:30, open: The can opened easily*). The subject *the meeting* denotes the existence of people so that the interpretation of the sentence like *the meeting will start at 8:30* was the easiest among other Type D sentences, whereas the subject *the can* does not denote the existence of people so that the sentence like *the can opened easily* was the most difficult for them. The Wilcoxon signed-rank test was conducted between the results of each test. After a series of explicit instructions, they could correctly answer most of Type D sentences immediately after instructions (p =.03) and 13 weeks after instructions (p =.03). In particular, the statistically significant differences were observed between Pre-test and Post-test 1 and Pre-test and Post-test 2 for the verbs *start* (p =.03) and *open* (p =.03), respectively. Thus, all of them could interpret type D sentences that included *start* and *open* correctly after instructions.

Thus, the participants in Cluster 1 did not seem to utilize the information of animacy on subject nouns for the interpretation of Type D sentences. Rather, they seemed to use an alternative strategy that cannot be explained using the animacy factor. After instructions, they could answer Type D sentences and maintain their awareness for 13 weeks.

Results of Cluster 2. As for Cluster 2, Table 86 and Figure 61 show the individual verb results for three tests. Compared with Cluster 1 and 3, the overall test score on Type D sentences was higher and all the participants in Cluster 2 could correctly interpret Type D sentences with *start* and *close* (e.g., *start*: *The meeting will start at 8:30, close*: *The museum closes at 9 p.m. on Sundays*), which are the easy ones among them. Furthermore, 80% of them could correctly interpret Type D sentences that included *open* (*open: The window opened easily*), which is the most difficult sentence. The subjects *the meeting* and *the museum* denote the existence of people, while the subject *the can* does not denote the existence of people. Thus, the participants in Cluster 2 can understand intransitive usages correctly irrespective of the degree of animacy information available on subject nouns. However, it should be noted that they had difficulty in answering Type D sentences with *roll* (*roll*: *The big roll moved slowly*), which are the most difficult ones for them. It seems that

Table 85 *Individual Verb Results of Cluster 1 for Three Tests*

	Pre-test	Post-test 1	Post-test 2	Statistical Significances
start	0.00	0.88	1.00	Pre-test < Post-test 1 Pre-test < Post-test 2
grow	0.38	0.88	0.88	-
close	0.50	1.00	1.00	-
burn	0.38	1.00	1.00	-
separate	0.63	0.88	0.63	-
dry	0.25	0.75	0.75	-
drop	0.38	0.75	1.00	-
roll	0.38	1.00	1.00	-
open	0.00	0.88	1.00	Pre-test < Post-test 1 Pre-test < Post-test 2
SUM	2.88	8.00	8.25	Pre-test < Post-test 1 Pre-test < Post-test 2

Note: Wilcoxon signed-rank test was used for the pairwise comparisons, p<.05

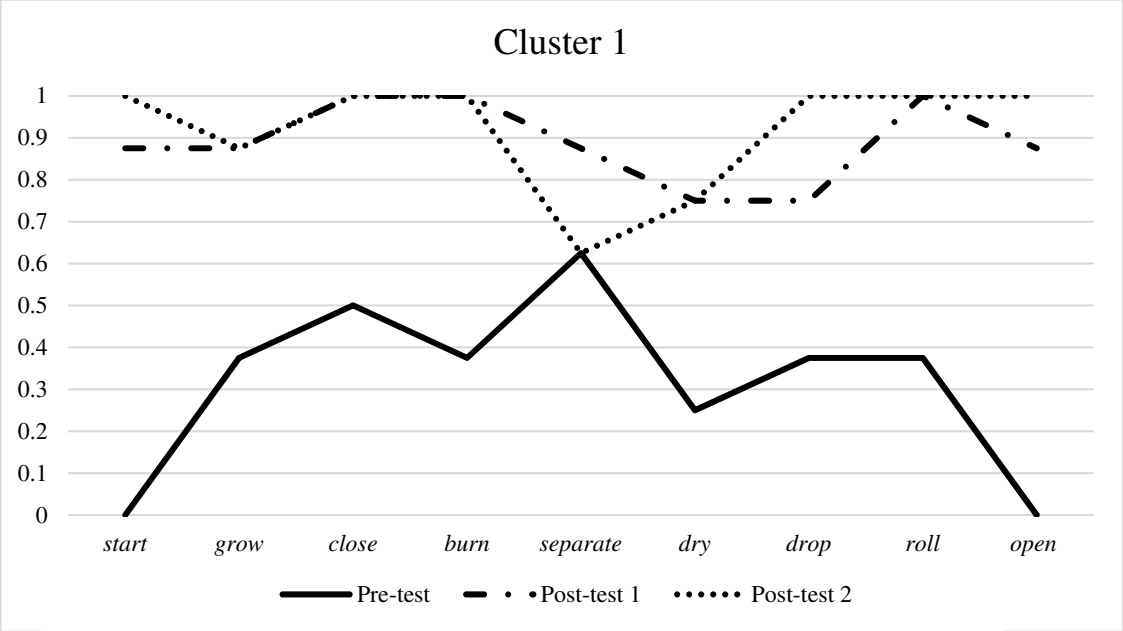


Figure 60. Individual verb results of Cluster 1 for three tests

the reason for this difficulty is not animacy information but something else.

The Wilcoxon signed-rank test was conducted between the results of each test. After a series of explicit instructions, they could correctly answer most of Type D sentences immediately after instructions (p =.02) and 13 weeks after instructions (p =.02). When examining the results of individual verb tests, the statistical differences were not observed between Pre-test and Post-test 1 and Pre-test and Post-test 2 for all the individual verbs except *roll* on Type D sentences. The test results for *start, close, searpate, dry* and *open* on Type D sentences seem to indicate the ceiling effect. Thus, after a series of instructions, the participants in Cluster 2 could correctly answer all the individual verbs in Type D sentences.

These results indicate that the participants belonging to Cluster 2 do not entirely depend on animacy information available on subject nouns and thus, they seemed to have no difficulty in interpreting during Pre-test. They only have difficulty in answering Type D sentence with *roll*. After receiving explicit instructions, they seemed to realize that the inanimate subject nouns (*the big rock*) of verb *roll* also can be the sentential subjects. This awareness was maintained for 13 weeks after instructions. Thus, the participants in Cluster 2 seem to use an alternative strategy and do not use animacy information on subject nouns.

Results of Cluster 3. As for Cluster 3, Table 87 and Figure 62 show the individual verb results for three tests. As in the results of Cluster 2, the overall score on Type D sentences was higher than that of Cluster 1 on Pre-test. Additionally, all the participants in Cluster 3 could correctly answer the Type D sentence with *start*, the easiest among them. However, they had difficulty in interpreting the Type D sentences with *separate, dry*, *drop, roll*, and *open*, which are difficult sentences. Thus, the participants in Cluster 3 could understand intransitive usages correctly but seemed to depend on the animacy information on subject nouns.

The Wilcoxon signed-rank test was conducted between the results of each test. After a series of explicit instructions, they could correctly answer most of Type D sentences immediately after instructions (p <.001) and 13 weeks after instructions (p <.001). When examining the test results for individual verbs, the statistical differences were observed between Pre-test and Post-test 1 and Pre-test and Post-test 2 for all the individual verbs except *start* and *grow* on Type D sentences. The results for *start* and *grow* on Type D sentences seem to indicate the ceiling effect. Thus, after a series of instructions, the participants in Cluster 3 could correctly answer all the individual verbs on Type D sentences.

The participants belonging to Cluster 3 seem to depend on the animacy information on subject nouns and thus, they seemed to have the similar tendency that was observed in the overall results of Type D sentences in Pre-test. However, after receiving the explicit instructions, they seemed to realize that the inanimate subject nouns can also be the sentential subjects. This awareness was maintained for 13 weeks after the instructions.

To summarize, the results of cluster analysis for the test results of Type D sentences reveal that the participants in Cluster 1 and Cluster 2 did not seem to utilize the animacy information on subject nouns when interpreting Type D sentences. They are different from the participants in Cluster 3. It seems difficult to determine the reason behind their interpretation from the perspective of animacy of subject nouns. Hence, it may be due to other factors that are not considered in this study, such as learner factors. Further investigation is necessary to study the effects of learner factors on the interpretation of Type D sentences.

Table 86 *Individual Verb Results of the Participants in Cluster 2 for Three Tests*

	Pre-test	Post-test 1	Post-test 2	Statistical Significances
start	1.00	1.00	1.00	-
grow	0.50	0.90	1.00	-
close	1.00	1.00	1.00	-
burn	0.70	1.00	1.00	-
separate	0.90	0.90	0.90	-
dry	0.80	1.00	0.90	-
drop	0.50	0.80	0.80	-
roll	0.20	1.00	1.00	Pre-test < Post-test 1 Pre-test < Post-test 2
open	0.80	1.00	1.00	-
SUM	6.40	8.60	8.60	Pre-test < Post-test 1 Pre-test < Post-test 2

Note: Wilcoxon signed rank test was used for the pairwise comparisons, p<.05

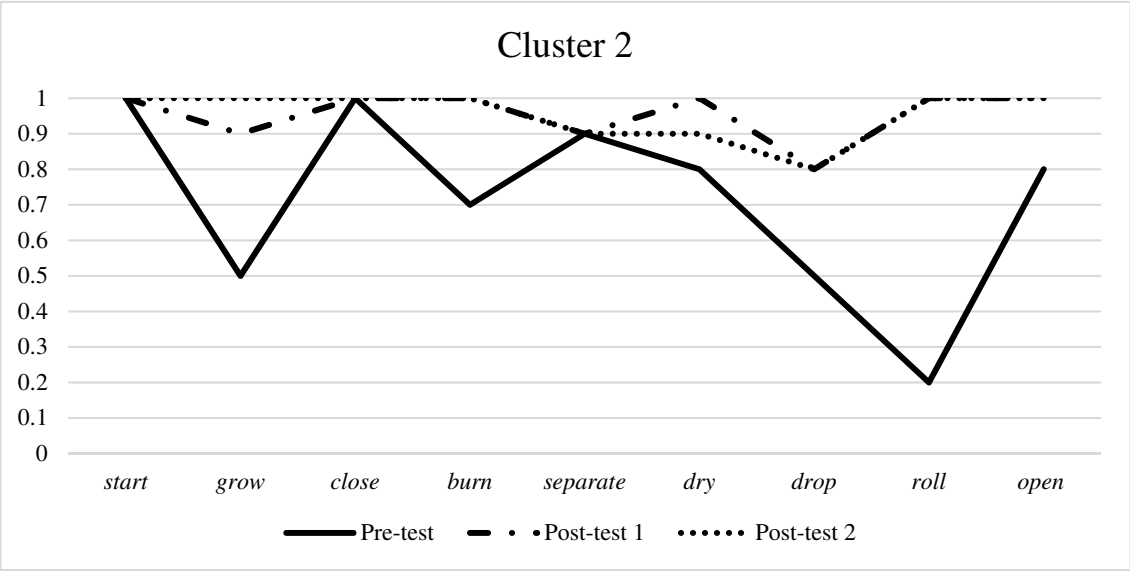


Figure 61. Individual verb results of the participants in Cluster 2 for three tests

Table 87 *Individual Verb Results of the Participants in Cluster 3 for Three Tests*

	Pre-test	Post-test 1	Post-test 2	Statistical Significances
start	1.00	0.96	0.96	-
grow	0.81	0.93	0.81	-
close	0.59	0.93	0.96	Pre-test < Post-test 1
burn	0.56	1.00	0.96	Pre-test < Post-test 1 Pre-test < Post-test 2
separate	0.30	0.81	0.63	Pre-test < Post-test 1 Pre-test < Post-test 2
dry	0.41	0.96	0.89	Pre-test < Post-test 1 Pre-test < Post-test 2
drop	0.37	0.85	0.85	Pre-test < Post-test 1 Pre-test < Post-test 2
roll	0.37	0.93	0.96	Pre-test < Post-test 1 Pre-test < Post-test 2
open	0.04	0.96	0.85	Pre-test < Post-test 1 Pre-test < Post-test 2
SUM	4.44	8.33	7.89	Pre-test < Post-test 1 Pre-test < Post-test 2

Note: Wilcoxon signed rank test was used for the pairwise comparisons, p<.05

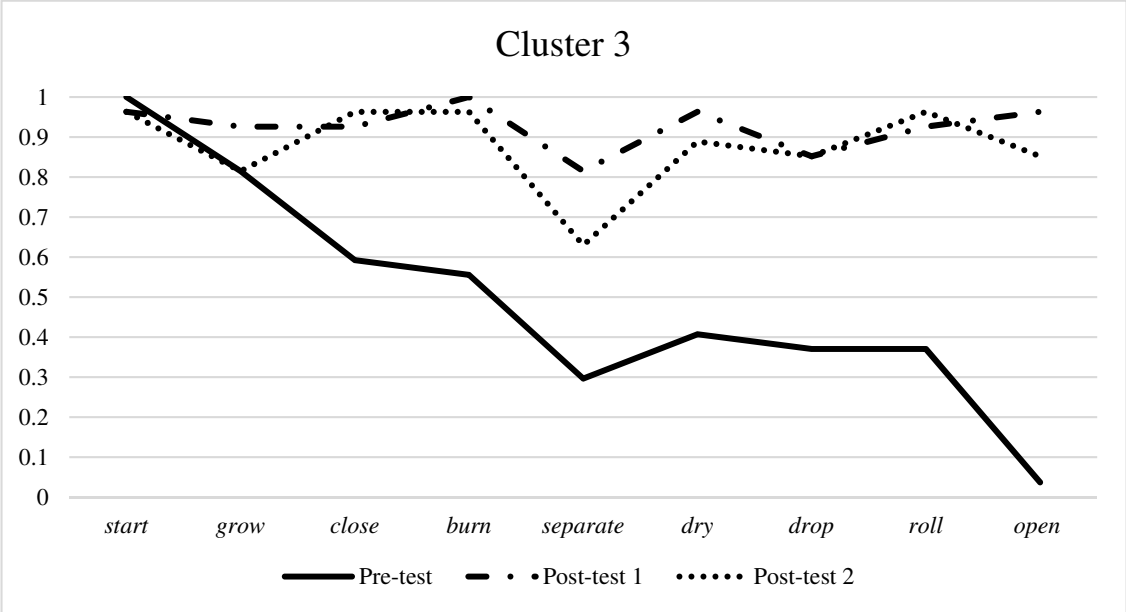


Figure 62. Individual verb results of the participants in Cluster 3 for three tests

6.6 Summary

Study 2 was conducted to examine the effect of explicit instruction on ergative verb structures for JLEs as based on the findings from Study 1. More precisely, the purpose of Study 2 is to present the most effective English grammar instruction method for JLE acquisition of English verb transitivity and intransitivity in L2 classrooms in Japan. Two research predictions were tested for Study 2 in (72).

(72) Research Predictions for Study 2

(a) explicit instruction should be effective and thus, JLEs can improve their degree of comprehension of ergative verb usages.

(b) the effect will last for at least thirteen weeks after a series of instruction sessions

By referring to grammatical and learner factors for which explicit instruction can be effective, as proposed by Shirahata (2015), as an instructor, I explicitly taught the university JLEs that ergative verbs can be used both transitively and intransitively, and that both animate and inanimate nouns can be placed in a subject position. Three explicit instruction sessions were conducted for 45 university JLEs over three consecutive weeks. The JLEs' grammatical comprehension was tested through GJTs that took place before, a week after, and 13 weeks after the sessions.

To summarize the results obtained in Study 2, the overall group results show that the explicit instruction provided in this experiment can be effective and its positive effect maintained at least for 13 weeks. These results are also observed when compared with the Control Group. Therefore, the research predictions were proven appropriate. The explicit grammar instructions including materials shown in 6.4.3 were effective for the interpretation of English ergative verb structures.

However, in reviewing the results for proficiency groups (Elementary and Intermediate), the longitudinal efficiency of explicit instructions was different. Compared to the JLEs with a higher proficiency (Intermediate), JLEs with a lower proficiency (Elementary) may have difficulty in retaining the grammatical knowledge of ergative verb structures 13 weeks after instruction. Therefore, the differences in English proficiency levels may be detected depending on whether the learners can retain their grammatical knowledge for a long period (13 weeks in this study).

As for the results of the test sentences (Type A to D), the explicit instruction was effective for all the four test sentence types and the effect was maintained for 13 weeks. It should be emphasized that the comprehension of Type D sentences ([+intransitive] usages and [-animate] subject nouns) – the most difficult type of test sentences –improved, and the effect lasted for 13 weeks. These results were also confirmed in a comparison with the Control Group. In comparing the results between types, explicit instruction was shown to be effective for improving the understanding of subject noun animacy since participants enhanced their degree of understanding of the sentences with [-animate] subject nouns at same level as [+animate] nouns. On the other hand, the Control Group did not improve their degree of understanding of animacy, as they still had difficulty in understanding Type D sentences. With regards to understanding verb transitivity and intransitivity, although the degree of understanding intransitive usages improved, compared with transitive usages, participants still had difficulties even after instruction. Therefore, the explicit instructions provided in this experiment may promote both the comprehension of lexical-semantic properties of animacy in subject nouns and transitive and intransitive usages of ergative verbs. However, there is a limitation in that even with explicit instruction, participants were unable to improve their degree of comprehension of intransitive usages at the same level as that for transitive usages.

When reviewing results by proficiency levels, the effects of explicit instructions were also confirmed in both high and low English proficiency groups (Intermediate and Elementary). However, one important point is that the JLEs with lower proficiencies found it more difficult to retain their comprehension of the Type D sentences to the same extent as JLEs with higher proficiencies. Except for the results for Type D sentences, no statistically significant differences in other sentence types (Type A, B and C) were observed between the Intermediate and Elementary Groups. These results suggest that it is necessary to further emphasize the characteristics of Type D sentences when providing explicit instructions, especially for low-proficiency learners.

Individual verb results also reveal the effectiveness of explicit instruction for all individual verbs in all test sentence types. It should be noted that results for several individual verbs produced a ceiling effect. After a series of explicit instructions, no differential difficulty among individual verbs was observed with transitive usages, except for *burn* and *close* in Type B sentences.

On the contrary, as for intransitive usages, differential difficulties among individual verbs were observed on all three GJTs in Type C sentences, even though the explicit instruction was effective for all individual verbs in Type C sentences. On the Pre-test, the verbs *burn, dry,* and *separate* were found to be more difficult that other verbs to interpret and, yet after instruction, only the sentence with *separate* (*Mary and Tom separated 10 years ago*) was found to be difficult, which was also observed in Type D sentences (*Water and sands separate slowly*). Other intransitive usages in Type D sentences did not exhibit any statistically significant differences among individual verbs immediately after instruction, even though, on the Pre-test, some individual verbs were found to be difficult to interpret compared with others (*dry, drop, roll*, and *open*). However, only the interpretation of the sentence with *separate* exhibited a statistically significant difference compared to others after 13 weeks. Therefore, providing explicit instructions did not appear to lead to differential difficulty among individual verbs.

Difficulties with Type C and Type D sentences that included *separate* appeared to be due to the influence of the L1 verb morpheme *-e-* (*hanar-e-ru* in Japanese, which is equivalent to *separate*), and not due to the influence of the individual verbs themselves. Since the influence of L1 morphological patterns was not explained through explicit instruction, the verb *separate* in both Type C and Type D sentences was difficult to interpret throughout the three GJTs; some JLEs may revise it into passive forms. Therefore, it may be necessary to provide metalinguistic explanations on the influence of L1 morphological patterns with regards to JLEs' tendencies to revise the intransitive sentences into passive forms, such as in the case found with *separate*.

I also scrutinized the individual learner results by focusing Type D sentences. JLEs' understanding of Type D sentences did not deteriorate after instruction in either proficiency group. The important point is that explicit instruction is effective for not only JLEs with high-proficiency, but also those with lower proficiency. These results suggest that teachers should proactively use metalinguistic explanations with some exercises in L2 classrooms for English ergative verb structures, since even low-proficiency university students can understand and promote their degree of understanding. However, it was also determined that the scores of three JLEs in the low-proficiency group decreased remarkably on Post-test 2, and none of them could correctly respond to the sentences with *separate* and *open*. This indicates that it is necessary to reconsider how the contents and methods of explicit grammar

instruction should be administrated for low-proficiency learners to maintain their grammatical knowledge in the long-term. However, it should be noted that some JLEs did not intend to use animacy with subject nouns when interpreting Type D sentences on the Pre-test. They appeared to be affected by learner factors, but their interpretations improved following instruction.

Therefore, to answer the third purpose of this dissertation, Study 2 reveals that the explicit instruction provided in this experiment is effective for enhancing the "noticing" and "comprehension" of both transitive and intransitive usages of ergative verbs in the process of L2 acquisition. Explicit instruction was conducted from two perspectives: (a) the syntactic perspective, i.e. explicit instruction that focuses on participants noticing the syntactic structures of ergative verb usages in English; and (b) the semantic perspective, i.e. explicit instruction that allows the participants to notice the lexical-semantic characteristics of the subject nouns. In particular, through the process of "noticing" and "comprehension," JLEs need to learn that both animate and inanimate nouns can be placed on the subjects in intransitive usages. In particular, they came to realize that Type D sentences were grammatically correct even though the subjects are inanimate and did not cause the verb action alone.

Throughout a series of explicit instruction sessions, the university JLEs were able to retain the grammatical knowledge of ergative verb structures. In other words, it can be considered that they were able to "notice" and "comprehend" the correct syntactic structures of ergative verbs and the lexical-semantic characteristics of subject nouns (i.e. animacy). According to the L2 acquisition process proposed by Shirahata (2017) (See Figure 3 in Chapter 4), after the JLEs were able to process the stages of both "noticing" and "comprehension," by repeating and reinforcing both stages through a series of explicit instruction sessions, they were able to reach the important stages of L2 acquisition: "internalization" and "automatization (acquisition)."

I conclude that the research predictions proposed in Study 2 were proved appropriate: (a) explicit instruction should be effective and thus, the JLEs can improve their degree of comprehension for ergative verb usages, and (b) the effect will last for at least thirteen weeks after the series of instruction sessions. Therefore, it can be claimed that the results obtained from Study 2 prove the validity of the assumptions proposed by Shirahata (2015), as presented again below in (73) and (74). The assumptions shown in (73) for the grammatical

items and (74) for L2 learners are applicable to the development of ergative verb usages in this study.

(73) Explicit instruction is effective on those grammatical items that:

a. have simple internal rules
b. mainly convey simple lexical meanings
c. have concepts and/or grammatical structures similar to those found in the learner's L1
d. have not been sufficiently taught up to high school

(74) Explicit instruction is effective for L2 learners who:

a. have good cognitive and/or analytical abilities to understand the instructor's grammatical explanations
b. are proficient enough in English understand the target language's grammatical rules

(Adapted from Shirahata, 2015, p.182)

Based on the findings in Study 2, I would like to propose the grammar instruction that should be used in an L2 classroom environment. Under the Japanese educational system, one teacher provides instruction in front of students. In such an environment, it is unrealistic for teachers to allow students realize their errors individually (Focus-on-form) or to offer them considerable input (Input Hypothesis). By contrast, the explicit grammar instruction highlighted in Study 2 can be an effective method. As discussed in Chapter 4, even though explicit grammar instruction itself is not brand-new, its efficacy should be reconsidered and proactively introduced in L2 classrooms in the university.

In L2 university classrooms, I propose that a brief segment of grammar instruction (10 to 20 minutes) should be conducted in every single English class for the following four reasons. First, it is crucial to maximize the effectiveness of English learning in the limited time that students are exposed to English (maximum two classes per week). Teaching and learning grammar rules using learners' metalinguistic knowledge does not take much time and once the grammar rules have been explained, the JLEs can store them as acquired knowledge. Second, when considering the developmental stage of university students, due

to their high cognitive ability, it is easy for university JLEs, unlike junior and senior high school students, to understand grammatical terms. Third, by considering the English education received during school, it is necessary to provide explicit explanations of grammatical rules. A final important fact is that undergraduate-level English education may be the last opportunity JLEs have to attain explicit explanation in grammatical rules from teachers. Thus, grammar instruction enables university JLEs to supplement the grammatical knowledge that they have not fully acquired up to senior high school. This makes grammar instruction in university L2 classrooms in Japan indispensable.

Finally, several points should be considered to promote the validity of Study 2's findings. First, the contents of metalinguistic explanations for some example sentences should be reconsidered to include the metalinguistic explanations influenced by L1 morphological patterns *-e-*, especially for the verb *separate*. Second, Study 2's replication study should be conducted using English ergative verbs that were not tested in this study. Also, the effect of instruction should be tested for long-term (more than 13 weeks after instructions). Third, explicit instruction on other grammatical items should be conducted to confirm whether the conditions for the effectiveness of explicit instruction proposed by Shirahata (2015), as shown in (73) and (74), apply to both English ergative structures as well as other items. Fourth, learner factors which affect the interpretation of Type D sentences should be investigated since some JLEs did not seem to utilize the animacy on subject nouns. Finally, the influence of explicit grammar instruction towards learner's grammatical knowledge and its learning process should be further scrutinized by focusing on both implicit and explicit grammatical knowledge. In recent applied linguistics research, it has been reported that explicit grammatical knowledge gained through explicit learning appears to affect the development of implicit grammatical knowledge (Suzuki & Dekeyser, 2017). Thus, by measuring learners' explicit and implicit grammatical knowledge, we will be able to unravel the details of grammatical knowledge transformation in L2 learners who received explicit grammar instruction.

Chapter 7
Conclusion

This dissertation had three objectives. The first was to examine how university JLEs who have received English-language education for six years over both junior and senior high school levels, acquire English verbs with both transitive and intransitive forms. Based on the empirical acquisition data collected from the JLEs, the second was to investigate the factors that caused difficulties for these students in the acquisition of transitivity and intransitivity of English verbs. The third objective was to demonstrate that the explicit grammar instruction administered to the JLEs was effective in making them acquire transitivity and intransitivity of English verbs in L2 classrooms. To achieve these goals, this dissertation utilized English ergative verbs in two kinds of empirical experiments, Study 1 and Study 2, in an L2 classroom environment. In the concluding chapter, I summarize my findings as revealed from pursuing these objectives, and then propose the points that need to be investigated in future research.

Regarding the first and second objectives, I based the theoretical framework of L2 acquisition of ergative verb structures by JLEs on the keystones of L1 transfer as well as the influence of animacy on subject nouns, known as the Agent First principle (Jackendoff, 2002). With respect to L1 transfer, it was predicted that JLEs would have little difficulty in interpreting English ergative verb structures since Japanese has their equivalents. As far as the influence of animacy on subject nouns was concerned, it was predicted that they would correctly interpret a sentence with an animate subject as grammatical, and incorrectly interpret a sentence with an inanimate subject as ungrammatical.

In *Study 1: L2 Acquisition of Ergative Verb Structures by JLEs* in Chapter 5, I administered the GJT for university JLEs. The results refuted the first prediction from the perspective of L1 transfer. The JLEs had difficulty in correctly judging intransitive usages as compared to transitive usages. However, the second prediction, regarding the influence of animacy on subject nouns, was supported. The JLEs were more often correct in judging the grammaticality of the sentences with [+animate] subject nouns as compared to those with [-animate] subject nouns. In particular, they had difficulties with Type D sentences ([+intransitive] & [-animate] subject nouns). It can be said that the JLEs, especially elementary learners, tend to apply the Agent First principle (Jackendoff, 2002) rather than

applying their L1 equivalents, since they might think that the thematic role of subject nouns is Agent, not Theme or Patient. As far as I am aware, the utilization of the Agent First principle by L2 learners has not been examined or discovered in L2 acquisition of ergative verb structures. Hence, this is a novel and significant discovery regarding factors that affect L2 acquisition.

Based on Study 1's findings, the third objective was measured in *Study 2: Longitudinal Study on Explicit Instruction on Ergative Verb Structures* in Chapter 6. I administered a series of explicit grammar instructions for English ergative verb structures to the JLEs. Their grammatical comprehension was tested through GJTs thrice: before the instruction sessions, a week after, and 13 weeks after. The results indicate that the explicit instruction was effective and the effect was maintained for 13 weeks. This effect was observed for all types of test sentences, including Type D ([+intransitive] & [-animate] subject nouns), the most difficult type. After receiving the instructions, the JLEs had the metalinguistic knowledge that both animate and inanimate subject nouns can be subject nouns, and that the thematic role of Agent cannot be assigned to subject nouns in intransitive usages. Thus, it can be concluded that the materials and procedures used in explicit grammar instructions were effective in promoting an understanding of English ergative verb usages by JLEs. Moreover, the assumptions proposed by Shirahata (2015) shown in (73) and (74) in Chapter 6 are valid for the development of ergative verb usages.

Based on the findings from Study 1 and Study 2, this dissertation successfully presents the effectiveness of explicit grammar instruction for English ergative verb structures in L2 classrooms. This is because both the contexts and methods used in the explicit grammar instructions were created based on theoretical backgrounds, and were tested to collect empirical data. In Study 1, based on linguistic theories, the L2 acquisition of ergative verb structures by JLEs was examined. Then, in Study 2, based on the empirical data collected from Study 1 as well as findings from applied linguistics, a series of explicit grammar instructions were given and the effect was observed and maintained for 13 weeks. The explicit grammar instructions proposed in this dissertation are innovative in that they were formulated within the framework of a cross-curricular approach to Subject Development.

Finally, I present the tasks needed to be undertaken in future research. One crucial point is that replication studies for both Study 1 and 2 are necessary to promote the validity of the results obtained from this dissertation. Future research should control the conditions

of learners and materials used in the experiment. First, since the English proficiency levels of the participants in this dissertation were limited, future research should also include JLEs whose proficiency levels were not tested here, such as beginner to elementary, or high-intermediate to advanced level learners. Second, since limited kinds of ergative verbs were tested in this study (15 kinds of ergative verbs for Study 1 and 9 kinds for Study 2), the target ergative verbs should be alternated with those not tested in this dissertation. Likewise, the animacy of sentential subject nouns should be carefully controlled.

Another crucial point to consider is the kind of learner factors that affected the results of Study 1 and Study 2. A series of cluster analyses in both studies reveal that there are some participants who did not utilize the animacy of subject nouns when judging grammaticality. Since this dissertation scrutinized L2 acquisition of ergative verb structures in terms of linguistic and cognitive contexts only, learner factors are still a pending issue. Future research should therefore consider looking into learner factors as well.

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Appendices A: Study 1: A vocabulary translation test

単語テスト

学籍番号

氏名

（問題）以下の英単語に対応する日本語訳を各空欄に書きなさい。

	English	日本語		English	日本語
1	begin		11	mix	
2	break		12	open	
3	burn		13	roll	
4	close		14	turn	
5	decrease		15	separate	
6	drop		16	shut	
7	dry		17	start	
8	grow		18	spread	
9	increase		19	stop	
10	match				

Appendices B: Study 1: Test sentences used in GJT

1	**begin**	
Type		Test sentence　他動詞（DP1-V-DP2）
A	状況・場面	Emily は毎朝午前 8 時半にオフィスに着きます。そして、
	[+animate]	Emily begins her work at 9 a.m.
B	状況・場面	私達の会社は業績不振でした。そこで、
	[-animate]	Our company began a new business.
		Test sentence　自動詞（DP-V-(PP)）
C	状況・場面	前回の英語の授業では 9 ページまで学習が終わりました。そこで、
	[+animate]	The English teacher began at page 10.
D	状況・場面	この学校の 1 日の始まりは早いです。
	[-animate]	The first class begins at 7 o'clock.

2	**burn**	
Type		Test sentence　他動詞（DP1-V-DP2）
A	状況・場面	私の家の隣に住む男は、大変なことをしてしまいました。
	[+animate]	The man burned his house.
B	状況・場面	私達の街は戦時中に大きな被害を受けました。なぜなら
	[-animate]	A lot of bombs from the airplane burned our city.
		Test sentence　自動詞（DP-V-(PP)）
C	状況・場面	ホテルから出火しました。そして、
	[+animate]	Ten people burned to death in a hotel fire.
D	状況・場面	ものには、「燃えやすい物」と「燃えにくい物」があります。
	[-animate]	Dry paper burns easily.

3	**close**	
Type		Test sentence　他動詞（DP1-V-DP2）
A	状況・場面	今日は、昼間は暖かかったのですが、夜になって急に寒くなってきました。そこで Ann は、
	[+animate]	Ann closed the windows in the early evening.
B	状況・場面	岩が崩れて道路に落ちました。その結果、
	[-animate]	Several rocks closed the road for two days.
		Test sentence　自動詞（DP-V-(PP)）
C	状況・場面	夜 22 時頃、ドラッグストアへ買い物にでかけたところ、店員が次のように言いました。
	[+animate]	We will close in five minutes.

D	状況・場面	この美術館は、日曜日は夜遅くまで絵を見ることができます。なぜなら、
	[-animate]	The museum closes at 9 p.m. on Sundays.

4	**decrease**	
Type		Test sentence　他動詞（DP1-V-DP2）
A	状況・場面	最近、John は悩みの種がなくなり、穏やかな気分になりました。なぜなら、
	[+animate]	John decreased his stress.
B	状況・場面	食物繊維（food fiber）は体に良いです。なぜなら、(fat:脂肪)
	[-animate]	Food fiber decreases fat in the blood.
		Test sentence　（NP-V-(PP)）
C	状況・場面	この国では、最近頻繁にテロが続きました。そのため、
	[+animate]	The foreign tourists have decreased rapidly in number.
D	状況・場面	水の消費量（consumption）は、季節によって異なります。例えば、
	[-animate]	Water consumption decreases during the winter.

5	**drop**	
Type		Test sentence　他動詞（DP1-V-DP2）
A	状況・場面	Ann は引っ越しで、重いデスクトップのコンピューターを一人で運んでいました。そして、
	[+animate]	Ann dropped her computer.
B	状況・場面	アメリカとイランは敵対関係です。
	[-animate]	A U.S bomber dropped bombs in Iran.
		Test sentence　（DP-V-(PP)）
C	状況・場面	少年が家の屋根に登って遊んでいました。ところが、
	[+animate]	The boy dropped nearly 5 meters into a net.
D	状況・場面	リンゴ園の方向に強い風が吹き荒れました。そして、翌日行ってみると、
	[-animate]	Many apples dropped during the night.

6	**die**	
Type		Test sentence　他動詞（DP1-V-DP2）
A	状況・場面	３歳の太郎くんはお風呂からあがりました。そして、
	[+animate]	Taro’s mother dries his hair.
B	状況・場面	太陽が出ている時に、洗濯物を干します。なぜなら、

	[-animate]	The strong sunlight dries the clothes.
		Test sentence　自動詞　（DP-V-(PP)）
C	状況・場面	Jane は水分も取らずに砂漠の中を長時間歩きました。そのため、
	[+animate]	Jane's body dried.
D	状況・場面	洗濯で洗ったばかりの服を着ようと思い、お母さんに聞いてみたところ、
	[-animate]	"Your clothes will soon dry. Wait for a moment. "

7	**grow**	
Type		Test sentence　他動詞（DP1-V-DP2）
A	状況・場面	私の叔父の趣味は、園芸です。そして、
	[+animate]	My uncle grows vegetables in his farm.
B	状況・場面	この農場は有名です。なぜなら、
	[-animate]	The farm grows good grapes for wine.
		Test sentence　自動詞（DP-V-(PP)）
C	状況・場面	私は甥の Nick に 1 年ぶりに会って驚きました。なぜなら、
	[+animate]	Nick has grown rapidly since I saw him last time.
D	状況・場面	果物には適した環境があります。（climate：気候）
	[-animate]	Strawberries and oranges grow in warm climates.

8	**increase**	
Type		Test sentence 他動詞（DP1-V-DP2）
A	状況・場面	大学で日本語を専攻している Sarah は、夏休みに日本に短期留学しました。その結果、
	[+animate]	Sarah increased her Japanese expressions.
B	状況・場面	Sam は最近嬉しいことがありました。なぜなら、
	[-animate]	The company increased his salary.
		Test sentence　自動詞（DP-V-(PP)）
C	状況・場面	空き地に公団住宅が建ちました。その結果、
	[+animate]	People in this area have increased rapidly in number.
D	状況・場面	夕ご飯の時間になり、お母さんは John を何度も呼びましたが、返事がありませんでした。そのため、
	[-animate]	Her degree of anger increased.

9	**mix**	
Type		Test sentence　他動詞（DP1-V-DP2）

A	状況・場面	家庭科の調理実習で、子ども達はクッキーを作ることになりました。そこで、
	[+animate]	The children mixed the butter and sugar together.
B	状況・場面	朝食用に、ミキサー（blender）でフルーツジュースを作りました。
	[-animate]	The blender mixed different kinds of fruits.
		Test sentence　自動詞（DP-V-(PP)）
C	状況・場面	転校してきたばかりの太郎は、同じクラスの仲間と仲良くできるか不安でした。しかし、しばらくすると、
	[+animate]	Taro mixed well in the class.
D	状況・場面	水が入ったコップの水に油を入れると、油は表面に浮きます。
	[-animate]	Oil and water don’t mix.

10	**open**	
Type		Test sentence　他動詞　（DP1-V-DP2）
A	状況・場面	Mary は部屋を閉めきっていて暑かったです。なので、
	[+animate]	Mary opened the window.
B	状況・場面	その会社は、従業員の数が増えました。そこで、
	[-animate]	The company opened the new office.
		Test sentence　自動詞　（DP-V-(PP)）
C	状況・場面	有名なラーメン屋の前に行列が沢山できていたので、店長さんは従業員に言いました。
	[+animate]	“We will open earlier than usual.”
D	状況・場面	缶詰を開けたいので、缶切りを買ってきました。その結果、
	[-animate]	The can opened easily.

11	**roll**	
Type		Test sentence　他動詞（DP1-V-DP2）
A	状況・場面	Tom は仲間とボーリングをしています。そして、彼の番が来ました。
	[+animate]	Tom rolled a ball.
B	状況・場面	製紙工場では、製紙した紙を出荷するために次の作業が必要です。
	[-animate]	The machine rolls papers.
		Test sentence 自動詞（DP-V-(PP)）

C	状況・場面	Emi は体育の時間にマット運動で前転をしています。
	[+animate]	Emi can roll quickly.
D	状況・場面	地震で道に落ちてきた岩を動かさなければなりませんでした。
	[-animate]	The big rock rolled slowly.

12	**turn**	
Type		Test sentence　他動詞（DP1-V-DP2）
A	状況・場面	Jim は出勤するために急いで車に乗りました。そして、
	[+animate]	Jim turned the car key.
B	状況・場面	花子さんは、学校でどのように水車が回るのかを勉強しました。（wheel：輪）
	[-animate]	The pressure of the water turned the wheel.
		Test sentence 自動詞（DP-V-(PP)）
C	状況・場面	太郎は宿題を出すために田中先生を探していると、後ろで田中先生の声が聞こえました。そこで、
	[+animate]	Taro turned to Mr. Tanaka quickly.
D	状況・場面	家の中に入ろうとしましたが・・・。
	[-animate]	My key wouldn’t turn.

13	**separate**	
Type		Test sentence　（DP1-V-DP2）
A	状況・場面	教師は教室内で二人の男子がケンカをしているのを見つけました。そこで、
	[+animate]	Their teacher separated these fighting boys.
B	状況・場面	私の働いているビルからは、すぐ隣のビルが見えません。なぜなら、
	[-animate]	The high wall separates two buildings.
		Test sentence 自動詞（DP-V-(PP)）
C	状況・場面	妹の Mary と兄の Tom は、お互いどこに住んでいるのかわかりません。なぜなら、
	[+animate]	Mary and Tom separated 10 years ago.
D	状況・場面	水と油を一緒に混ぜると面白いことがわかります。なぜなら、
	[-animate]	Oil and water separate quickly.

14	**start**	
Type		Test sentence　他動詞　（DP1-V-DP2）
A	状況・場面	Mary は、今日は沢山宿題があります。そこで、

	[+animate]	Mary started her homework at 5 o'clock.
B	状況・場面	その企業は、順調に利益が上がっています。そのため、
	[-animate]	The company will start a new business next month.
		Test sentence 自動詞（DP-V-(PP)）
C	状況・場面	クラス遠足に行くため、朝６時に集合の予定でしたが、全員早く集まりました。そこで、
	[+animate]	The students started earlier.
D	状況・場面	いつもは９時に出社ですが、今日は８時半から出社しています。なぜなら、
	[-animate]	The meeting will start at 9 a.m.

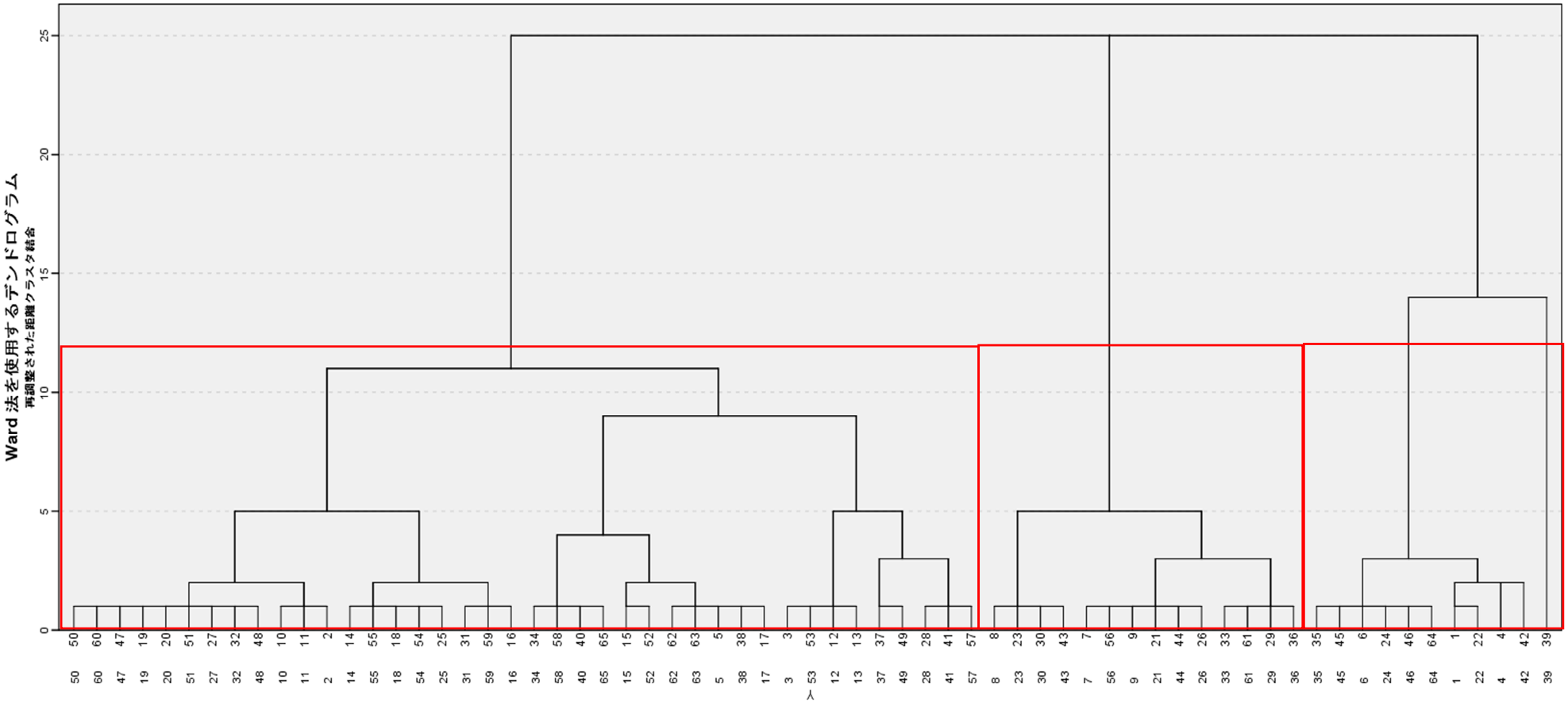
15	**stop**	
Type		Test sentence　他動詞（DP1-V-DP2）
A	状況・場面	兄弟がケンカを始めました。そこへお母さんの Mary がやってきました。
	[+animate]	Mary stopped the fight.
B	状況・場面	大きな交差点で交通事故が発生しました。そのため、
	[-animate]	The accident stopped the traffic on the street.
		Test sentence 自動詞（DP-V-(PP)）
C	状況・場面	Hanako は、ジョギング中に蛇を見つけました。そして、
	[+animate]	Hanako stopped suddenly.
D	状況・場面	今朝７時に起きるようとしましたができませんでした。そして、その原因がわかりました。なぜなら、
	[-animate]	My alarm clock stopped.

Appendices C: Study 1: Raw data

Participants	OQPT	Proficiency	Type A	Type B	Type C	Type D
S1	23	Elementary	9	12	11	12
S2	25	Elementary	14	15	13	9
S3	25	Elementary	12	14	14	8
S4	27		10	9	10	10
S5	26		13	14	11	10
S6	32	Intermediate	11	11	10	10
S7	27		15	15	14	12
S8	31	Intermediate	14	11	14	10
S9	29	Intermediate	15	15	15	13
S10	26		15	15	14	9
S11	23	Elementary	15	15	13	10
S12	23	Elementary	12	12	13	6
S13	26		13	15	14	4
S14	26		15	15	10	5
S15	30	Intermediate	13	15	12	12
S16	19	Elementary	15	14	12	1
S17	26		14	12	11	9
S18	25	Elementary	14	15	11	7
S19	30	Intermediate	15	15	12	9
S20	25	Elementary	15	15	12	7
S21	29	Intermediate	15	14	14	14
S22	22	Elementary	10	13	13	12
S23	20	Elementary	14	10	14	11
S24	31	Intermediate	11	12	11	12
S25	28	Intermediate	14	15	12	7
S26	29	Intermediate	14	15	15	15
S27	24	Elementary	15	14	12	8
S28	24	Elementary	13	11	12	6
S29	29	Intermediate	13	15	14	12
S30	27		14	12	15	11
S31	27		14	13	11	4
S32	31	Intermediate	15	14	12	9
S33	29	Intermediate	13	13	14	12
S34	25	Elementary	14	15	9	10
S35	29	Intermediate	12	12	11	9

S36	23	Elementary	11	15	15	15
S37	27		13	13	9	4
S38	27		13	13	11	9
S39	24	Elementary	15	4	14	5
S40	28	Intermediate	13	14	8	12
S41	15	Elementary	13	11	11	6
S42	24	Elementary	9	13	9	8
S43	26		13	13	15	9
S44	27		14	14	13	13
S45	23	Elementary	12	12	11	10
S46	28	Intermediate	12	12	11	13
S47	27		15	15	12	8
S48	29	Intermediate	15	14	11	8
S49	19	Elementary	13	12	8	4
S50	29	Intermediate	15	15	12	8
S51	23	Elementary	15	15	12	6
S52	23	Elementary	13	15	12	10
S53	26		12	14	13	6
S54	31	Intermediate	14	15	11	6
S55	32	Intermediate	15	15	11	5
S56	27		15	15	14	12
S57	23	Elementary	12	10	12	7
S58	29	Intermediate	15	15	10	10
S59	25	Elementary	15	13	10	4
S60	29	Intermediate	15	15	12	8
S61	27		12	13	14	13
S62	25	Elementary	13	12	12	11
S63	21	Elementary	12	12	13	11
S64	26		12	11	9	13
S65	33	Intermediate	13	15	10	12

Appendices D: Study 1: Cluster Dendrogram



Appendices E: Study 2: worksheets for students

（配布資料: 1st session）

動詞の分類 ―自動詞と他動詞の区別にもとづいて―

① 他動詞と自動詞とは何でしょうか？ 下記の答えに書きましょう

【他動詞】（答え： ）

【自動詞】（答え： ）

② 自動詞・他動詞にもとづく動詞の分類は１～３の用に分類することができます

１．他動詞用法のみに使われる

２．自動詞用法のみに使われる

３．他動詞・自動詞用法両方に使われる

１～３の例文を見てみましょう

１．主に他動詞用法として使われる

他動詞用法の正しい文： The army **destroyed** the town. (軍隊が街を壊した)

他動詞用法の非文：*The town destroyed.（街が壊した）（The town was destroyed）

(↑destroy の後ろに目的語がないため非文です)

(注：*非文・・・文法的に正しくない文(文頭に*のマークを付けています))

２．主に自動詞用法として使われる

自動詞用法の正しい文：Ann **arrive** at the airport by taxi. (アンはタクシーで空港に着いた)

自動詞用法の非文：*Ann arrived the airport by taxi.（アンはタクシーで空港を着いた？）

(↑arrive は後ろに目的語をとることができないため非文です)

３．他動詞・自動詞用法両方に使われる自他両用動詞（能格動詞）を用いた文

他動詞用法：Mary opened the window. (メアリーは窓を開けた)

自動詞用法：The can opened easily. （缶が簡単に開いた）

☺ １～３の分類にもとづいて、例文カードをもう一度分類してみましょう ☺

③　主に他動詞用法で使われる動詞・主に自動詞用法で使われる動詞・自動詞と他動詞用法で使われる動詞の例と例文をみてみましょう。同時に日本語訳もみてみましょう。

１．主に他動詞用法として使われる

(黒色下線は目的語)

（文の構造）主語　＋　**動詞**　＋　目的語

主に他動詞として使われる動詞：destroy, bring, introduce, hate, respect, use, know　など

（例文と対応する日本語）

accept　(～を受け入れる)：Hanako **accepted** a job offer. (ハナコは仕事のオファー**を受けれた**)
*Yuko **accepted**.　（ユウコが受け入れた？（何を？））

destroy　(～を壊す)　：The army **destroyed** the town. (軍隊が街を壊した)
*The town **destroyed**. (街が壊した？) (The town was destroyed は Ok)

bring　(～をもたらす)：Tom **brought** some flowers to me. (トムは私に花**を持ってきた**)
*John **brought** kindly to my house. (ジョンは親切に家に持ってきた（何を？）)

introduce　（～を紹介する）：Mr. Suzuki **introduced** our new classmate. (鈴木先生は転校生**を紹介した**)
*A famous doctor **introduced**.　（有名な医者は紹介した（何を？））
(A famous doctor was introduced　は ok)

hate　（～を嫌う）　：Taro **hates** cats.　（太郎は猫**を嫌う**）
*Mary **hates**.　(メアリーは嫌う（何を？）)

respect　(～を尊敬する)：The students **respects** Mr. Smith. (生徒達はスミス先生**を尊敬している**)
*Many people **respect**. (多くの人々が尊敬する(誰を？))

use　(~を使う)　：The chef **uses** his new knife. (シェフは新しい自分のナイフ**を使う**)
*I cannot **use**.　（私は使うことができない（何を？））

kick　（～を蹴る）　：Jiro **kicked** a soccer ball. (次郎はサッカーボール**を蹴った**)
*Jiro **kicked**.　（次郎は蹴った（何を？））
*A soccer ball **kicked**.　（サッカーボールは蹴った？）
(A soccer ball was kicked　は OK)

(次のページへ続きます)

主に自動詞用法で使われる動詞・自動詞と他動詞用法で使われる動詞をみてみましょう

２．主に自動詞用法として使われる

文の構造：　主語　＋　**動詞**

主に自動詞として使われる動詞：　*appear, arrive, come, die, fall, occur, stand,*
cough, dive, depend, laugh, listen

（例文と対応する日本語）

appear (現れる)：The stars **appeared**. (星が**現われた**)
*The polar bear **appeared** the water pool. (ホッキョクグマがプールを現れた？)

arrive（着く）：The train **arrived** at the station. (電車が駅に**着いた**)
*Ann **arrived** the airport by taxi.　(アンはタクシーで空港を着いた？)

die　（死ぬ）：My dog **died**. (私の犬が**死んだ**)
*The disease **died** my dog.　（病気は私の犬を死んだ？）

come　(来る)：Tom **came** to Mary's house this afternoon.　（トムは午後にメアリーの家に**来た**）
*Tom **came** Mary's house this afternoon.　（トムは午後にメアリーの家を来た？）

fall　（落ちる）：The snow was **falling**.　（雪が**落ちていた**）
*The children were **falling** the snow.　（子どもは雪を落ちていた？）

occur　(起こる)：The car accident **occurred**.　（車の事故が**起こった**）
*Lucy **occurred** the car accident.

stand（立つ）：The church **stands** on the hill.　（教会は丘の上に建っている）
*The mother **stood** her baby on the floor.　（母は床に赤ちゃんを立つ？（立たせる））

dive　（飛び込む）：Children **dived** into a swimming pool.　（子ども達はプールに飛び込んだ）
*Children **dived** a swimming pool.　（子ども達はプールを飛び込んだ？）

depend　（頼る）：Children **depend** on their parents.　（子ども達は親に頼る）
*Children **depend** their parents.　（子ども達は親を頼る？）

laugh　(笑う)　：John **laughed** at a funny story. (John は面白い話で**笑った**)
*John **laughed** a funny story.　（John は面白い話を笑った？）

listen　（聴く）：Tom **listened** to the radio.　（Tom はラジオを**聴いた**）
*Tom **listened** the radio.　（Tom はラジオを聴いた）

３．**他動詞・自動詞**用法両方に使われる

(文の構造) **他動詞**用法： 主語 ＋ 動詞 ＋ 目的語
自動詞用法： 主語 ＋ 動詞

自動詞他動詞の両方で使われる動詞： *burn, close, drop, dry, grow, open, roll, separate, start*

burn （～を燃やす・燃える）：他動詞用法 The strange man **burned** newspapers at the park.
(見知らぬ男が公園で新聞紙**を燃やした**)
自動詞用法 Dry paper **burn** easily.
(乾いた紙は簡単に**燃える**)

close（～を閉める・閉まる）：他動詞用法 Ann **closed** the windows.
（Ann は窓**を閉めた**）
自動詞用法 The supermarket **closes** at 9 p.m.
（スーパーは午後 9 時に**閉まる**）

drop（～を落とす・落ちる）：他動詞用法 Ann **dropped** her computer.
(Ann はコンピューター**を落とした**)
自動詞用法 Many apples **dropped** during the night.
（夜の間に、沢山のリンゴが**落ちた**）

dry （～を乾かす・乾く）：他動詞用法 The strong sunlight **dries** the clothes.
(強い日光が服**を乾かした**)
自動詞用法 Your clothes will soon **dry**.
（あなたの服はすぐに**乾く**でしょう）

grow（～を育てる・育つ）：他動詞用法 The farm **grows** good grapes for wine.
（その農場ではワインのための良いブドウ**を育てている**）
自動詞用法 Strawberries and oranges **grow** in warm climates.
（イチゴとオレンジは暖かい気候の中で**育つ**）

open（ ～を開ける・開く）：他動詞用法 Mary **opened** the window.
（Mary は窓**を開けた**）
自動詞用法 The can **opened** easily.
（その缶は簡単に**開いた**）

roll（ ～を回す・回る）：他動詞用法 Tom **rolled** a ball.
(Tom はボール**を回した**)
自動詞用法 The big rock **rolled** slowly.
（その大きな岩はゆっくり**回った**）

separate（～を離す・離れる）：他動詞用法　Their teacher **separated** the fighting boys.
（彼らの先生は喧嘩をしている少年たち**を離した**）
自動詞用法　Oil and water **separate** quickly.
（油と水は素早く**離れる**）

start（ ～を始める・始まる）：他動詞用法　Mary **started** her homework at 5 o'clock.
（Mary は 5 時に宿題**を始めた**）
自動詞用法　The meeting will **start** at 8:45.
（そのミーティングは 8:45 に**始まる**だろう）

④　自動詞はさらに２種類に分けることができます
下の例文グループ A とグループ B を見て下さい
A と B の違いは何でしょうか？ペアで話し合って下に違いを書いてみましょう

グループ A
appear (現れる)：The stars **appeared**. (星が**現われた**)
arrive（着く）：The train **arrived** at the station. (電車が駅に**着いた**)
die　（死ぬ）：My dog **died**. (私の犬が**死んだ**)

グループ B
laugh　(笑う)：John **laughed** at a funny story. (John は面白い話で**笑った**)
listen　（聴く）：Tom **listened** to the radio.　（Tom はラジオを**聴いた**）

それでは、答えを確認してみましょう
（　　）に正しい答えを記入しましょう

グループ A.（答え　　）自動詞
例　*appear, arrive, come, die, fall, occur, stand, bloom*

appear (現れる)：The stars **appeared**. (星が**現われた**)
arrive（着く）：The train **arrived** at the station. (電車が駅に**着いた**)
die　（死ぬ）：My dog **died**. (私の犬が**死んだ**)

グループ B.（答え　　）自動詞
例　*cough, cooperate, despair, dive, depend, laugh, listen*

laugh　(笑う)：John **laughed** at a funny story. (John は面白い話で**笑った**)
listen　（聴く）：Tom **listened** to the radio.　（Tom はラジオを**聴いた**）

グループ A と**グループ B** の**自動詞**は、主語の性質も異なります
主語の性質の違いとは何でしょうか？例文を参考にペアで話し合ってみましょう
「　」内に答えを書きましょう

グループ A：（　　）**自動詞**

（例）
appear (現れる)：The stars **appeared**. (星が**現われた**)
arrive（着く）：The train **arrived** at the station. (電車が駅に**着いた**)
die　（死ぬ）：My dog **died**. (私の犬が**死んだ**)
↓
主語：The stars, the train, my dog　は、

「　(答え)　」

グループ B。（　　）**自動詞**

（例）
laugh　(笑う)：John **laughed** at a funny story. (John は面白い話で**笑った**)
listen　（聴く）：Tom **listened** to the radio.　（Tom はラジオを**聴いた**）
↓
主語：John, Tom は、
「　(答え)　」

（配布資料: 2nd session）　A

英語の自他両用動詞（自動詞・他動詞の文どちらも可）の構造

【１．　前回の復習】

ペアワーク　例文カードを「文法的に正しい文」と「文法的に正しくない文」に分けましょう

①　他動詞と自動詞の違い

他動詞　・・・（動詞の後ろに）目的語がある　（構造：主語＋動詞＋目的語）

↕

自動詞　・・・（動詞の後ろに）目的語がない　（構造：主語＋動詞）

②　自動詞・他動詞にもとづく動詞の３分類

１．主に他動詞用法として使われる

他動詞用法の正しい文：　The army **destroyed** the town.（軍隊が街を壊した）
他動詞用法の非文：*The town destroyed.（街が壊した）（The town was destroyed）
（↑destroy の後ろに目的語がないため非文です）

（注：*非文・・・文法的に正しくない文(文頭に*のマークを付けています)）

２．主に自動詞用法として使われる

自動詞用法の正しい文：Ann **arrive** at the airport by taxi.　（アンはタクシーで空港に着いた）
自動詞用法の非文：*Ann arrived the airport by taxi.（アンはタクシーで空港を着いた？）
（↑arrive は後ろに目的語をとることができないため非文です）

３．他動詞・自動詞用法両方に使われる　自他両用動詞（能格動詞）を用いた文

他動詞用法：Mary opened the window.（メアリーは窓を開けた）
自動詞用法：The can opened easily.　（缶が簡単に開いた）

ペアワーク　「文法的に正しい文」の例文カードを上の３つのグループに分けましょう

【２　他動詞・自動詞用法両方に使われる 自他両用動詞（能格動詞）を用いた文 について】

［ 練習問題 ］ ペアワーク☺　：　「自動詞用法」・「他動詞用法」の文の復習をしましょう。
他動詞・自動詞用法両方に使われる 自他両用動詞（能格動詞）を用いた文を作る練習をします。
下の１～１８の問題をペアで順番に解きましょう。
【A さんが問題を読む】と書かれている問題では、A さんが【状況・場面】・【問題】を読んでください。
B さんは、【問題】の日本語に対応する英文を A さんに話して伝えましょう。
【答え】で主語の名詞だけ示してありますので、B さんは、主語に続く文を答えてください。
A さんは、B さんの答えが正しいか否かを判断し、正しい答えを伝えてください。
【B さんが問題を読む】も同様に行ってください。

あなたは「A さん」です

１.【A さんが読む】
【状況・場面】　私の家の隣に住む John は、大変なことをしてしまいました。
【日本語】　John は家を燃やしました。
【答え】　John burned his house.

２.【A さんが読む】
【状況・場面】　ものには、「燃えやすい物」と「燃えにくい物」があります。
【日本語】　乾いた紙は簡単に燃えます。
【答え】　Dry paper burns easily.

３.【B さんが読む】
【状況・場面】　今日は、昼間は暖かかったのですが、夜になって急に寒くなってきました。そこで太郎は、
【日本語】　太郎は窓を閉めました。
【答え】A さん　Taro _____.

４.【B さんが読む】
【状況・場面】　この図書館は、金曜日は夜遅くまで本を読むことができます。なぜなら、
【日本語】　この図書館は、金曜日は夜９時に閉まります。
【答え】A さん　The library_____.

５.【A さんが読む】
【状況・場面】　次郎は引っ越しで、重いデスクトップのコンピューターを一人で運んでいました。
そうしたところ、

【日本語】　次郎はコンピュータを落としました。

【答え】　Jiro dropped his computer.

6．【A さんが読む】

【状況・場面】　ミカン園の方向に強い風が吹き荒れました。そして、翌日行ってみると、

【日本語】　夜の間に、多くのミカンが落ちました。

【答え】　Many oranges dropped during the night.

7．【B さんが読む】

【状況・場面】　2 歳のケンくんはお風呂からあがりました。そして、

【日本語】　ケンのお母さんが彼の髪の毛を乾かしました。

【答え】A さん　Ken's mother＿＿＿＿＿＿＿＿＿＿.

8．【B さんが読む】

【状況・場面】　洗ってもらったばかりの靴をはこうと思い、お母さんに聞いてみたところ、

【日本語】　″あなたの靴はもうすぐ乾くよ。もう少しまって。″

【答え】A さん　″Your shoes ＿＿＿＿＿＿＿＿＿＿. Wait for a moment″

9．【A さんが読む】

【状況・場面】　私の父の趣味は、園芸です。そして、

【日本語】　私の父は自分の農場で野菜を育てます。

【答え】　My father grows vegetables on his farm.

１０．【A さんが読む】

【状況・場面】　果物には適した環境があります。（climate：気候）

【日本語】　バナナは温かい気候で育ちます。

【答え】　Bananas grow in warm climates.

１１．【B さんが読む】

【状況・場面】　Sam は長時間部屋を閉めきっていて暑かったです。なので、

【日本語】　Sam は窓を開けました。

【答え】A さん　Sam＿＿＿＿＿＿＿＿＿＿.

１２．【B さんが読む】

【状況・場面】　宅急便で届いた箱を開けたいので、はさみを持ってきました。その結果、

【日本語】　　箱は簡単に開きました。

【答え】A さん　The box＿＿＿＿＿＿＿＿＿＿.

１３．【A さんが読む】

【状況・場面】　John は仲間とボーリングをしています。そして、彼の番が来ました。

【日本語】　　John はボールを回しました。

【答え】　　John rolled a ball.

１４．【A さんが読む】

【状況・場面】　交通事故でトラックから外れたタイヤをみんなで動かしました。

【日本語】　　車のタイヤはゆっくり回りました。

【答え】　　The car tire rolled slowly.

１５．【B さんが読む】

【状況・場面】　お母さんは家で兄弟がケンカをしているのを見つけました。そこで、

【日本語】　　彼らのお母さんはケンカをしている兄弟を離しました。

【答え】A さん　Their mother＿＿＿＿＿＿＿＿＿＿＿＿＿＿.

１６．【B さんが読む】

【状況・場面】　油と水を一緒にかきまぜてみたところ、面白いことがわかります。なぜなら、

【日本語】　　油と水は素早く離れます。

【答え】A さん　Oil and water＿＿＿＿＿＿＿＿＿＿＿＿＿＿.

１７．【A さんが読む】

【状況・場面】　Emily は、今日は沢山宿題があります。そこで、

【日本語】　　Emily は 4 時に宿題を始めました。

【答え】　　Emily started her homework at 4 o'clock.

１８．【A さんが読む】

【状況・場面】　いつもは８時に登校ですが、今日は 7 時半に登校しています。なぜなら、

【日本語】　　１時間目が８時に始まります。

【答え】　　The first class will start at 8 a.m.

（配布資料: 2nd session）　B

英語の自他両用動詞（自動詞・他動詞の文どちらも可）の構造

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（↑destroy の後ろに目的語がないため非文です）

（注：*非文・・・文法的に正しくない文(文頭に*のマークを付けています)）

２．主に自動詞用法として使われる

自動詞用法の正しい文：Ann **arrive** at the airport by taxi.　（アンはタクシーで空港に着いた）
自動詞用法の非文：*Ann arrived the airport by taxi.（アンはタクシーで空港を着いた？）
（↑arrive は後ろに目的語をとることができないため非文です）

３．他動詞・自動詞用法両方に使われる　自他両用動詞（能格動詞）を用いた文

他動詞用法：Mary opened the window.（メアリーは窓を開けた）
自動詞用法：The can opened easily.　（缶が簡単に開いた）

ペアワーク😊　「文法的に正しい文」の例文カードを上の３つのグループに分けましょう

【２　他動詞・自動詞用法両方に使われる 自他両用動詞（能格動詞）を用いた文 について】

［ 練習問題 ］ ペアワーク☺　：　「自動詞用法」・「他動詞用法」の文の復習をしましょう。
他動詞・自動詞用法両方に使われる 自他両用動詞（能格動詞）を用いた文を作る練習をします。
下の１～１８の問題をペアで順番に解きましょう。
【A さんが問題を読む】と書かれている問題では、A さんが【状況・場面】・【問題】を読んでください。
B さんは、【問題】の日本語に対応する英文を A さんに話して伝えましょう。
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A さんは、B さんの答えが正しいか否かを判断し、正しい答えを伝えてください。
【B さんが問題を読む】も同様に行ってください。

あなたは「B さん」です

１.【A さんが読む】
【状況・場面】　私の家の隣に住む John は、大変なことをしてしまいました。
【日本語】　John は家を燃やしました。
【答え】B さん　John＿＿＿＿＿＿＿＿＿＿.

２.【A さんが読む】
【状況・場面】　ものには、「燃えやすい物」と「燃えにくい物」があります。
【日本語】　乾いた紙は簡単に燃えます。
【答え】B さん　Dry paper＿＿＿＿＿＿＿＿＿＿

３.【B さんが読む】
【状況・場面】　今日は、昼間は暖かかったのですが、夜になって急に寒くなってきました。そこで太郎は、
【日本語】　太郎は窓を閉めました。
【答え】　Taro closed the windows.

４.【B さんが読む】
【状況・場面】　この図書館は、金曜日は夜遅くまで本を読むことができます。なぜなら、
【日本語】　この図書館は、金曜日は夜９時に閉まります。
【答え】　The library closes at 9 p.m. on Fridays.

５.【A さんが読む】
【状況・場面】　次郎は引っ越しで、重いデスクトップのコンピューターを一人で運んでいました。
そうしたところ、

【日本語】　次郎はコンピュータを落としました。

【答え】B さん　Jiro＿＿＿＿＿＿＿＿＿＿＿＿＿＿＿＿

6．【A さんが読む】

【状況・場面】　ミカン園の方向に強い風が吹き荒れました。そして、翌日行ってみると、

【日本語】　夜の間に、多くのミカンが落ちました。

【答え】B さん　Many oranges＿＿＿＿＿＿＿＿＿＿＿＿.

7．【B さんが読む】

【状況・場面】　2 歳のケンくんはお風呂からあがりました。そして、

【日本語】　ケンのお母さんが彼の髪の毛を乾かしました。

【答え】　Ken's mother dried his hair.

8．【B さんが読む】

【状況・場面】　洗ってもらったばかりの靴をはこうと思い、お母さんに聞いてみたところ、

【日本語】　"あなたの靴はもうすぐ乾くよ。もう少しまって。"

【答え】　"Your shoes will soon dry. Wait for a moment"

9．【A さんが読む】

【状況・場面】　私の父の趣味は、園芸です。そして、

【日本語】　私の父は自分の農場で野菜を育てます。

【答え】B さん　My father＿＿＿＿＿＿＿＿＿＿＿＿＿＿＿＿.

１０．【A さんが読む】

【状況・場面】　果物には適した環境があります。（climate：気候）

【日本語】　バナナは温かい気候で育ちます。(warm climate:温かい気候)

【答え】B さん　Bananas＿＿＿＿＿＿＿＿＿＿＿＿＿＿＿＿.

１１．【B さんが読む】

【状況・場面】　Sam は長時間部屋を閉めきっていて暑かったです。なので、

【日本語】　Sam は窓を開けました。

【答え】　Sam opened the window.

１２．【B さんが読む】

【状況・場面】　宅急便で届いた箱を開けたいので、はさみを持ってきました。その結果、

【日本語】　　箱は簡単に開きました。

【答え】　　The box opened easily.

１３．【A さんが読む】

【状況・場面】　John は仲間とボーリングをしています。そして、彼の番が来ました。

【日本語】　　John はボールを回しました。

【答え】B さん　John＿＿＿＿＿＿＿＿＿＿＿＿＿＿.

１４．【A さんが読む】

【状況・場面】　交通事故でトラックから外れたタイヤをみんなで動かしました。

【日本語】　　車のタイヤはゆっくり回りました。

【答え】B さん　The car tire＿＿＿＿＿＿＿＿＿＿＿＿＿＿.

１５．【B さんが読む】

【状況・場面】　お母さんは家で兄弟がケンカをしているのを見つけました。そこで、

【日本語】　　彼らのお母さんはケンカをしている兄弟を離しました。

【答え】　　Their mother separated the fighting brothers.

１６．【B さんが読む】

【状況・場面】　油と水を一緒にかきまぜてみたところ、面白いことがわかります。なぜなら、

【日本語】　　油と水は素早く離れます。

【答え】　　Oil and water separate quickly.

１７．【A さんが読む】

【状況・場面】　Emily は、今日は沢山宿題があります。そこで、

【日本語】　　Emily は 4 時に宿題を始めました。

【答え】B さん　Emily＿＿＿＿＿＿＿＿＿＿＿＿＿＿＿＿＿＿.

１８．【A さんが読む】

【状況・場面】　いつもは８時に登校ですが、今日は 7 時半に登校しています。なぜなら、

【日本語】　　１時間目が８時に始まります。

【答え】B さん　The first class ＿＿＿＿＿＿＿＿＿＿＿＿＿＿＿＿＿＿.

他動詞・自動詞用法両方に使われる 自他両用動詞（能格動詞）を用いた文 の構造

練習問題にでてきた動詞（　　）は、すべて「自他両用動詞（能格動詞）」です。
自動詞用法・他動詞用法、どちらの用法でも使われます。

自他両用動詞の文の構造：　**他動詞**用法：　主語　＋　動詞　＋　目的語
　　自動詞用法：　主語　＋　動詞

自動詞他動詞の両方で使われる動詞：　*burn, close, drop, dry, grow, open, roll, separate, start*
mix, begin, decrease, increase, turn, stop

英語の自他両用動詞を日本語で考えてみましょう！

↓

日本語にも英語に対応する自動詞・他動詞用法があります

動詞　burn　は、他動詞用法では「～を燃やす」と使われ、自動詞用法「燃える」と使われます。
例文は下のようになります。

burn　（～を燃やす・燃える）

他動詞用法　構造：主語＋動詞＋目的語
　　英語：The strange man **burned** newspapers at the park.
　　日本語：見知らぬ男が公園で新聞紙**を燃やした**

自動詞用法　　構造：主語＋動詞
　　英語：Dry paper **burn** easily.
　　日本語：乾いた紙は簡単に**燃える**

注意！自動詞用法は「文法的に誤り」で、受動態の文にする人が多い傾向があります。
自動詞用法も、受動態の文も「文法的に正しい」ので、ご注意ください！

それでは、練習問題の答えを確認しましょう

練習問題　１番と２番

動詞：separate（～を離す・離れる）

1.　他動詞用法

【問題】　　二人の男子の先生は、喧嘩をしている二人(the fighting boys)**を離しました**。

【答え】　　Their teacher **separated** the fighting boys

２．自動詞用法

【問題】　　水と油は素早く**離れます**。(主語：Oil and water，動詞：separate)

【答え】　　Oil and water **separate** quickly.

以下、練習問題の答えとして、動詞の例文と日本語訳を提示します。

close（～を閉める・閉まる）：他動詞用法　Ann **closed** the windows.
（Ann は窓**を閉めた**）
自動詞用法　The supermarket **closes** at 9 p.m.
（スーパーは午後 9 時に**閉まる**）

drop（～を落とす・落ちる）：他動詞用法　Ann **dropped** her computer.
(Ann はコンピューター**を落とした**)
自動詞用法　Many apples **dropped** during the night.
（夜の間に、沢山のリンゴが**落ちた**）

dry　（～を乾かす・乾く）：他動詞用法　The strong sunlight **dries** the clothes.
(強い日光が服**を乾かした**)
自動詞用法　Your clothes will soon **dry**.
（あなたの服はすぐに**乾く**でしょう）

grow（～を育てる・育つ）：他動詞用法　The farm **grows** good grapes for wine.
（その農場ではワインのための良いブドウ**を育てている**）
自動詞用法　Strawberries and oranges **grow** in warm climates.
（イチゴとオレンジは暖かい気候の中で**育つ**）

open（　～を開ける・開く）：他動詞用法　Mary **opened** the window.
（Mary は窓**を開けた**）
自動詞用法　The can **opened** easily.
（その缶は簡単に**開いた**）

roll（　～を回す・回る）：他動詞用法　Tom **rolled** a ball.
(Tom はボール**を回した**)
自動詞用法　The big rock **rolled** slowly.
（その大きな岩はゆっくり**回った**）

separate（～を離す・離れる）：他動詞用法　Their teacher **separated** the fighting boys.
（彼らの先生は喧嘩をしている少年たち**を離した**）
自動詞用法　Oil and water **separate** quickly.
（油と水は素早く**離れる**）

start（ ～を始める・始まる）：他動詞用法　Mary **started** her homework at 5 o'clock.

（Mary は 5 時に宿題**を始めた**）

自動詞用法　The meeting will **start** at 8:45.

（そのミーティングは 8:45 に**始まる**だろう）

(配布資料：2nd session)

（今日のまとめ）

他動詞・自動詞用法両方に使われる 自他両用動詞（能格動詞）を用いた文 の構造

練習問題にでてきた動詞（***burn, close, drop, dry, grow, open roll, separate, start***）は、
すべて「自他両用動詞（能格動詞）」です。
自動詞用法・他動詞用法、どちらの用法でも使われます。

自他両用動詞の文の構造： **他動詞**用法： 主語 ＋ 動詞 ＋ 目的語
自動詞用法： 主語 ＋ 動詞

自動詞他動詞の両方で使われる動詞： ***burn, close, drop, dry, grow, open, roll, separate, start***
mix, begin, decrease, increase, turn, stop

英語の自他両用動詞を日本語で考えてみましょう
↓
日本語にも英語に対応する自動詞・他動詞用法があります

動詞 burn は、他動詞用法では「～を燃やす」と使われ、自動詞用法「燃える」と使われます。
例文は下のようになります。

burn （～を燃やす・燃える）

他動詞用法 構造：主語＋動詞＋目的語
英語：The strange man **burned** newspapers at the park.
日本語：見知らぬ男が公園で新聞紙**を燃やした**

自動詞用法 構造：主語＋動詞
英語：Dry paper **burn** easily.
日本語：乾いた紙は簡単に**燃える**

注意！自動詞用法は「文法的に誤り」で、受動態の文にする人が多い傾向があります。

(例)　The can opened easily.

↓

この文は「文法的に誤り」で、
The can was opened easily. が正しいと答える人がとても多いです。

The can opened easily. / The can was opened easily の両方とも
自動詞用法も、受動態の文も**「文法的に正しい」**ので、ご注意ください！

それでは、練習問題の答えを確認しましょう

練習問題　１番と２番

Burn（～を燃やす・燃える）：他動詞用法:　John **burned his house**.
(John は家**を燃やした**)

自動詞用法:　Dry paper **burns** easily.
（乾いた紙は簡単に**燃える**）

練習問題　３番と４番

close（～を閉める・閉まる）：他動詞用法　Taro **closed** the windows.
（Taro は窓**を閉めた**）

自動詞用法　The library **closes** at 9 p.m on Fridays.
(図書館は、金曜日は午後９時に**閉まる**)

練習問題　５番と６番

drop（～を落とす・落ちる）：他動詞用法　Jiro **dropped** her computer.
(Jiro はコンピューター**を落とした**)

自動詞用法　Many oranges **dropped** during the night.
（夜の間に、沢山のミカンが**落ちた**）

練習問題　７番と８番

dry　（～を乾かす・乾く）：他動詞用法　Ken's mother **dried** his hair.
(Ken のお母さんが彼の髪の毛**を乾かした**)

自動詞用法　Your shoes will soon **dry**.
（あなたの服はすぐに**乾く**でしょう）

練習問題　９番と１０番

grow（～を育てる・育つ）：他動詞用法　My father **grows vegetables** in his farm.
（その農場ではワインのための良いブドウ**を育てている**）

自動詞用法　Bananas **grow** in warm climates.
（バナナは暖かい気候の中で**育つ**）

練習問題　１１番と１２番

open（ ～を開ける・開く）：他動詞用法　Sam **opened** the window.
（Sam は窓**を開けた**）
自動詞用法　The box **opened** easily.
（その箱は簡単に**開いた**）

練習問題　１３番と１４番

roll（ ～を回す・回る）：他動詞用法　John **rolled** a ball.
(John はボール**を回した**)
自動詞用法　The car tire **rolled** slowly.
（その車のタイヤはゆっくり**回った**）

練習問題　１５番と１６番

separate（～を離す・離れる）：他動詞用法　Their mother **separated** the fighting brothers.
（彼らの母親は喧嘩をしている兄弟たち**を離した**）
自動詞用法　Oil and water **separate** quickly.
（油と水は素早く**離れる**）

練習問題　１７番と１８番

start（ ～を始める・始まる）：他動詞用法　Emily **started** her homework at 5 o'clock.
（Emily は 5 時に宿題**を始めた**）

自動詞用法　The first class will **start** at 8 a.m.
（１時間目の授業は 8 時に**始まる**だろう）

（配布資料: 3rd session）　A

英語の自他両用動詞（自動詞・他動詞の文どちらも可）を使った文の主語の特徴

【３．　前回の復習】

①　他動詞と自動詞の違い

他動詞　・・・（動詞の後ろに）目的語がある　（構造：主語＋動詞＋目的語）

↕

自動詞　・・・（動詞の後ろに）目的語がない　（構造：主語＋動詞）

②　自動詞・他動詞にもとづく動詞の 3 分類

１．主に他動詞用法として使われる

他動詞用法の正しい文：　The army **destroyed** the town. (軍隊が街を壊した)
他動詞用法の非文：*The town destroyed.（街が壊した）(The town was destroyed)

２．主に自動詞用法として使われる

自動詞用法の正しい文：Ann **arrive** at the airport by taxi.　(アンはタクシーで空港に着いた)
自動詞用法の非文：*Ann arrived the airport by taxi.（アンはタクシーで空港を着いた？）
（↑arrive は後ろに目的語をとることができないため非文です）

３．他動詞・自動詞用法両方に使われる 自他両用動詞（能格動詞）を用いた文

自他両用動詞の文の構造：　**他動詞**用法：　主語　＋　動詞　＋　目的語
自動詞用法：　主語　＋　動詞

他動詞用法：Mary opened the window. (メアリーは窓を開けた)
自動詞用法：The can opened easily.　（缶が簡単に開いた）

前回の練習で使った動詞（***burn, close, drop, dry, grow, open roll, separate, start***）は、
すべて「自他両用動詞（能格動詞）」です。自動詞用法・他動詞用法、どちらの用法でも使われます。

英語の自他両用動詞を日本語で考えてみましょう

↓

日本語にも英語に対応する自動詞・他動詞用法があります　burn　（～を燃やす・燃える）

【２種類の自動詞の違い】

㋮　下の例文①と②を表す絵をそれぞれ描きましょう（時間制限あり：３分）

①　Taro **laughed** at Mr. Tanaka's joke.

②　Ann **listened** to the music.

ペアワーク①㋮　「ペアの人が描いた絵と英文」を「自分が描いた絵と英文」を見比べてみましょう。
A さんが描いた絵に使われた動詞 laugh, listen と
B さんが描いた絵に使われた動詞 fall, arrive には、どんな違いがあると思いますか？
ペアの人と一緒に考えてみましょう！

それでは、答えを確認してみましょう
（　　）に正しい答えを記入しましょう

Laugh, listen などの動詞は.（　　）自動詞
例　*cough, cooperate, despair, dive, depend, laugh, listen*

laugh　(笑う)：John **laughed** at a funny story. (John は面白い話で**笑った**)
listen　（聴く）：Tom **listened** to the radio.　（Tom はラジオを**聴いた**）

Fall, arrive などの動詞は（　　）　自動詞
例　*appear, arrive, come, die, fall, occur, stand, bloom*

appear (現れる)：The stars **appeared**. (星が**現われた**)
arrive（着く）：The train **arrived** at the station. (電車が駅に**着いた**)
die　（死ぬ）：My dog **died**. (私の犬が**死んだ**)

（配布資料: 3rd session） B

英語の自他両用動詞（自動詞・他動詞の文どちらも可）を使った文の主語の特徴

【４． 前回の復習】

① 他動詞と自動詞の違い

他動詞 ・・・（動詞の後ろに）目的語がある （構造：主語＋動詞＋目的語）

↕

自動詞 ・・・（動詞の後ろに）目的語がない （構造：主語＋動詞）

② 自動詞・他動詞にもとづく動詞の 3 分類

１．主に他動詞用法として使われる

他動詞用法の正しい文： The army **destroyed** the town.（軍隊が街を壊した）
他動詞用法の非文：*The town destroyed.（街が壊した）（The town was destroyed）

２．主に自動詞用法として使われる

自動詞用法の正しい文：Ann **arrive** at the airport by taxi. （アンはタクシーで空港に着いた）
自動詞用法の非文：*Ann arrived the airport by taxi.（アンはタクシーで空港を着いた？）
（↑arrive は後ろに目的語をとることができないため非文です）

３．他動詞・自動詞用法両方に使われる 自他両用動詞（能格動詞）を用いた文

自他両用動詞の文の構造： **他動詞**用法： 主語 ＋ 動詞 ＋ 目的語
自動詞用法： 主語 ＋ 動詞

他動詞用法：Mary opened the window.（メアリーは窓を開けた）
自動詞用法：The can opened easily. （缶が簡単に開いた）

前回の練習で使った動詞（***burn, close, drop, dry, grow, open roll, separate, start***）は、
すべて「自他両用動詞（能格動詞）」です。自動詞用法・他動詞用法、どちらの用法でも使われます。

英語の自他両用動詞を日本語で考えてみましょう

↓

日本語にも英語に対応する自動詞・他動詞用法があります　例：burn　（～を燃やす・燃える）

【２種類の自動詞の違い】

下の例文①と②を表す絵をそれぞれ描きましょう（時間制限あり：３分）

① The snow was **falling.**

② The train **arrived** at the airport.

ペアワーク①㋁　ペアの人が描いた絵と英文を自分が描いた絵と英文を見比べてみましょう。

A さんが描いた絵に使われた動詞 laugh, listen と

B さんが描いた絵に使われた動詞 fall, arrive には、どんな違いがあると思いますか？

ペアの人と一緒に考えてみましょう！

それでは、答えを確認してみましょう

（　　）に正しい答えを記入しましょう

Laugh, listen などの動詞は.（　　）自動詞

例　*cough, cooperate, despair, dive, depend, laugh, listen*

laugh　(笑う)：John **laughed** at a funny story. (John は面白い話で**笑った**)

listen　（聴く）：Tom **listened** to the radio.　（Tom はラジオを**聴いた**）

Fall, arrive などの動詞は（　　）自動詞

例　*appear, arrive, come, die, fall, occur, stand, bloom*

appear (現れる)：The stars **appeared.** (星が**現われた**)

arrive（着く）：The train **arrived** at the station. (電車が駅に**着いた**)

die　（死ぬ）：My dog **died**. (私の犬が**死んだ**)

laugh, listen などの自動詞との fall arrive などの自動詞は、主語の性質も異なります

ペアワーク②㋁　「ペアの人が描いた絵と英文」を「自分が描いた絵と英文」を見比べてみましょう。
A さんが描いた絵に使われた英文の主語　Taro　と　Ann
B さんが描いた絵に使われた英文の主語　The snow　と　Ann
の役割は、どんな違いがあると思いますか？
ペアの人と一緒に考えてみましょう！

Laugh, listen など（自発的・意図的・生理的な動き・行い・ふるまいを表す）自動詞

（例）
laugh　(笑う)：Taro **laughed** at Mr. Tanaka's Joke (John は田中さんのジョークで**笑った**)
listen　（聴く）：Ann **listened** to the radio. (Ann はラジオを**聴いた**)
↓
主語：Taro, Ann　は、
「　(答え)　」

Fall, arrive など（存在・生成・消滅などの「様子」を表す　）自動詞

（例）
Fall　(落ちる): The snow was falling.　(雪が**落ちていた**)
appear (現れる)：The stars **appeared**. (星が**現われた**)
arrive（着く）：Ann　**arrived** at the station. (Ann が空港に**着いた**)
die　（死ぬ）：My dog **died**. (私の犬が**死んだ**)
↓
主語：The snow, Ann などは、
「(答え)　」

「自他両用動詞の自動詞用法」はこちらの種類の自動詞

“The box opened easily.” の主語 The box の役割も上と同じです

他動詞用法・自動詞用法両方が使われる動詞（open, close, separate, roll など）

の文の「**主語**」に注目しましょう！

他動詞用法　**Sam** opened the window.　（Sam は窓**を開けた**）

The company opened the new office. (その会社は新しいオフィスを開けた)

自動詞用法　**We** will open earlier than usual.　（私達はいつもよりも早く開くだろう）

The box opened easily.　（その箱は簡単に**開いた**）

ペアワーク　上の２つの例文の主語（**Sam, the company, we, the box**）を
何かの基準で、２グループ A と B に分類しましょう。
どんな分け方ができるでしょうか？

【グループ A】

主語の例

【グループ B】

主語の例

ペアワーク😆　**例文カード**を見てください。**他動詞**用法・**自動詞**用法の文があります。
例文カードに書かれている主語を　有生名詞［+animate］か　無生名詞［-animate］
かで分類してみましょう！

主語を有生名詞［+animate］と無生名詞［-animate］に分けて気づいたことも話しましょう！

他動詞用法・**自動詞**用法ともに、
主語は有生名詞[+animate] ,無生名詞 [-animate]の名詞がなることができます

↓

主語が有生名詞[+animate]　の文	主語が無生名詞 [-animate]
Sam opened the window. **We** will open earlier than usual.	**The company** opened the new office. **The box** opened easily.

＜ 注意！＞

自動詞用法で、主語が**無生物名詞[-animate]**のとき　「例 The box opened easily」

↓

文法的に正しくない文であると判断する人が多いですが、文法的に正しい文です

1st session

動詞の分類

―自動詞と他動詞の区別にもとづいて―

他動詞と自動詞

他動詞と自動詞の違いとは何でしょうか？

答え

他動詞 ➡ （動詞の後ろに）目的語がある

自動詞 ➡ （動詞の後ろに）目的語がない

ペアワーク

ビニール袋の中にある例文カードにある各動詞を、他動詞・自動詞に分類してみましょう！

自動詞・他動詞の区別に基づく動詞の分類

1. 主に他動詞用法として使われる
2. 主に自動詞用法として使われる
3. 他動詞・自動詞用法両方に使われる

それでは、それぞれ例文をみてみましょう

1. 主に他動詞用法として使われる

正しい文： The army **destroyed** the town. (軍隊が街を壊した)

非文：*The town destroyed. （街が壊した）
(The town was destroyed)

（↑ destroyの後ろに目的語がないため非文です）

(注：*非文・・・文法的に正しくない文(文頭に*のマークを付けています))

2. 主に自動詞用法として使われる

正しい文：Ann **arrive** at the airport by taxi.
(アンはタクシーで空港に着いた)

非文：*Ann arrived the airport by taxi.
（アンはタクシーで空港を着いた？）

（↑ arriveは後ろに目的語をとることができないため非文です）

3. 他動詞・自動詞用法両方に使われる

他動詞用法：Mary opened the window.
（メアリーは窓を開けた）

自動詞用法：The can opened easily.
（缶が簡単に開いた）

ペアワーク

例文カードを、これら3つの分類に基づいて、
もう一度分けてみましょう！

1. 主に他動詞用法として使われる

Yuko accepted the present.

The army destroyed the town.

John brought his umbrella.

A doctor introduced new medicine.

2. 主に自動詞用法として使われる

The snow was falling.

The students laughed at Mr. Tanaka's joke.

The polar bear appeared at the water pool.

Ann arrived at the airport by taxi.

Ann listened to her teacher's advice.

3. 他動詞・自動詞用法両方に使われる

The man burned his house.
Dry paper burns easily.
Ann closed the windows in the early evening.
The museum closes at 9 p.m. on Sundays.
Ann dropped her computer.
Many apples dropped during the night.
Mary opened the window.
The can opened easily.
Tom rolled a ball.
The big rock rolled slowly.

accept （～を受け入れる）

Hanako **accepted** a job offer.
(ハナコは仕事のオファーを受け入れれた)

*Yuko **accepted**.
（ユウコが受け入れた？（何を？））

destroy （～を壊す）

The army **destroyed** the town. (軍隊が街を壊した)

*The town **destroyed**. (街が壊した？)

(The town was destroyedはOk)

bring （～をもたらす）

Tom **brought** some flowers to me. (トムは私に花を持ってきた)

*John **brought** kindly to my house. (ジョンは親切に家に持ってきた（何を？）)

introduce （～を紹介する）

Mr. Suzuki **introduced** our new classmate.
(鈴木先生は転校生**を紹介した**)

*A famous doctor **introduced**. （有名な医者は紹介した（何を？）
(A famous doctor was introduced はok)

hate （～を嫌う）

Taro **hates** cats. （太郎は猫**を嫌う**）

*Mary **hates**. （メアリーは嫌う（何を？））

respect （～を尊敬する）

The students **respects** Mr. Smith. (生徒達はスミス先生**を尊敬している**)

*Many people **respect**. (多くの人々が尊敬する(誰を？))

use （~を使う）

The chef **uses** his new knife. (シェフは新しい自分のナイフ**を使う**)

*I cannot **use**. （私は使うことができない（何を？））

kick （～を蹴る）

Jiro **kicked** a soccer ball. (次郎はサッカーボール**を蹴った**)

*Jiro **kicked**. （次郎は蹴った（何を？））
*A soccer ball **kicked**. （サッカーボールは蹴った？）
(A soccer ball was kicked はOK)

come (来る)

Tom **came** to Mary's house this afternoon.
（トムは午後にメアリーの家に**来た**）

*Tom **came** Mary's house this afternoon.
（トムは午後にメアリーの家を来た？）

2. 主に自動詞用法として使われる

文の構造： 主語 ＋ **動詞**

主に自動詞として使われる動詞：
appear, arrive, come, die, fall, occur, stand,
cough, dive, depend, laugh, listen

appear (現れる)

The stars **appeared**. (星が**現われた**)

*The polar bear **appeared** the water pool.
(ホッキョクグマがプールを現れた？)

arrive（着く）

The train **arrived** at the station. (電車が駅に**着いた**)

*Ann **arrived** the airport by taxi. (アンはタクシーで空港を着いた？)

die （死ぬ）

My dog **died**. (私の犬が**死んだ**)

*The disease **died** my dog. （病気は私の犬を死んだ？）

fall （落ちる）

The snow was **falling**. （雪が**落ちていた**）

*The children were **falling** the snow. （子どもは雪を落ちていた？）

occur (起こる)

The car accident **occurred**. （車の事故が**起こった**）

*Lucy **occurred** the car accident.
(Lucyは自動車事故を起こった？)

laugh (笑う)

John **laughed** at a funny story.
(Johnは面白い話で**笑った**)

*John **laughed** a funny story.
(Johnは面白い話を笑った？)

listen （聴く）

Tom **listened** to the radio.
（Tomはラジオを**聴いた**）

*Tom **listened** the radio.
（Tomはラジオを聴いた）

stand（立つ）

The church **stands** on the hill.
（教会は丘の上に建っている）

*The mother **stood** her baby on the floor.
（母は床に赤ちゃんを立つ？（立たせる））

3. 他動詞・自動詞用法両方に使われる

(文の構造)
他動詞用法： 主語 ＋ 動詞 ＋ 目的語
自動詞用法： 主語 ＋ 動詞

自動詞他動詞の両方で使われる動詞：
burn, close, drop, dry, grow, open, roll, separate, start

burn （～を燃やす・燃える）

他動詞用法　The strange man **burned** newspapers at the park.
(見知らぬ男が公園で新聞紙**を燃やした**)

自動詞用法　Dry paper **burn** easily.
(乾いた紙は簡単に**燃える**)

close（～を閉める・閉まる）

他動詞用法　Ann **closed** the windows.
（Annは窓**を閉めた**）

自動詞用法　The supermarket **closes** at 9 p.m.
（スーパーは午後９時に**閉まる**）

drop（～を落とす・落ちる）

他動詞用法　Ann **dropped** her computer.
(Annはコンピューター**を落とした**)

自動詞用法　Many apples **dropped** during the night.
（夜の間に、沢山のリンゴが**落ちた**）

dry （～を乾かす・乾く）

他動詞用法　The strong sunlight **dries** the clothes.
(強い日光が服**を乾かした**)

自動詞用法　Your clothes will soon **dry**.
（あなたの服はすぐに**乾く**でしょう）

grow（～を育てる・育つ）

他動詞用法　The farm **grows** good grapes for wine.
(その農場ではワインのための良いブドウ**を育てている**)

自動詞用法　Strawberries and oranges **grow** in warm climates.
（イチゴとオレンジは暖かい気候の中で**育つ**）

open（～を開ける・開く）

他動詞用法　Mary **opened** the window.
(Maryは窓**を開けた**)

自動詞用法　The can **opened** easily.
（その缶は簡単に**開いた**）

roll（～を回す・回る）

他動詞用法　Tom **rolled** a ball.
(Tomはボール**を回した**)

自動詞用法　The big rock **rolled** slowly.
(その大きな岩はゆっくり**回った**)

separate（～を離す・離れる）

他動詞用法　Their teacher **separated** the fighting boys.
（彼らの先生は喧嘩をしている少年たち**を離した**）

自動詞用法　Oil and water **separate** quickly.
（油と水は素早く**離れる**）

start（～を始める・始まる）

他動詞用法　Mary **started** her homework at 5 o'clock.
（Maryは5時に宿題**を始めた**）

自動詞用法　The meeting will **start** at 8:45.
（そのミーティングは8:45に**始まる**だろう）

みなさん、自動詞・他動詞についての理解が深まりましたか？

動詞に対応する日本語を考えてみると、
これらの動詞に対する理解が深まります。

2nd session

動詞の分類 2

―自動詞と他動詞の区別にもとづいて―

前回の復習 ☆彡

ペアワーク

例文カードを

「文法的に正しい文」と

「文法的に正しくない文」に

分けましょう

Answers (9文 20～28 が非文法的)

The polar bear appeared the water pool.
Ann arrived the airport by taxi.
The children were falling the snow.
The students laughed Mr. Tanaka's joke.
Ann listened her teacher's advice.
Yuko accepted.
The town destroyed.
John brought kindly to my house.
A famous doctor introduced

他動詞と自動詞

他動詞と自動詞の違いとは何でしょうか？

答え

他動詞 ➡ (動詞の後ろに)目的語がある

自動詞 ➡ (動詞の後ろに)目的語がない

自動詞・他動詞の区別に基づく動詞の分類

1. 主に他動詞用法として使われる
2. 主に自動詞用法として使われる
3. 他動詞・自動詞用法両方に使われる

1. 主に他動詞用法として使われる

正しい文： The army **destroyed** the town. (軍隊が街を壊した)

非文：*The town destroyed. (街が壊した)
(The town was destroyed)

(↑ destroyの後ろに目的語がないため非文です)

(注：*非文・・・文法的に正しくない文(文頭に*のマークを付けています))

2. 主に自動詞用法として使われる

正しい文：Ann **arrive** at the airport by taxi.
(アンはタクシーで空港に着いた)

非文：*Ann arrived the airport by taxi.
(アンはタクシーで空港を着いた？)

(↑ arriveは後ろに目的語をとることができないため非文です)

3. 他動詞・自動詞用法両方に使われる

他動詞用法：Mary opened the window.
（メアリーは窓を開けた）

自動詞用法：The can opened easily.
（缶が簡単に開いた）

ペアワーク

「文法的に正しい文」の例文カードを
３つのグループに分けましょう

- 主として自動詞として使われる
- 主として他動詞として使われる
- 自動詞・他動詞両方に使われる

主として自動詞として使われる

The snow was falling.

The students laughed at Mr. Tanaka's joke.

The polar bear appeared at the water pool.

Ann arrived at the airport by taxi.

Ann listened to her teacher's advice.

主として他動詞として使われる

Yuko accepted the present.

The army destroyed the town.

John brought his umbrella.

A doctor introduced new medicine.

自動詞・他動詞両方に使われる

The man burned his house.
Dry paper burns easily.
Ann closed the windows in the early evening.
The museum closes at 9 p.m. on Sundays.
Ann dropped her computer.
Many apples dropped during the night.
Mary opened the window.
The can opened easily.
Tom rolled a ball.
The big rock rolled slowly.

ここまでは、前回の復習でした。

今日は・・・

他動詞・自動詞用法両方に使われる
自他両用動詞（能格動詞）を
用いた文について
理解を深めましょう

ペアワーク

- 他動詞・自動詞用法両方に使われる 自他両用動詞（能格動詞）を用いた文を作る練習をします。
- 下の１～１８の問題をペアで順番に解きましょう。
- 【Aさんが問題を読む】と書かれている問題

Aさん：【状況・場面】・【問題】を読んでください。
Bさん：【問題】の日本語に対応する英文を、Aさんに話して伝えましょう。
【答え】で主語の名詞だけ示してありますので、
Bさんは、主語に続く文を答えてください。
Aさん：Bさんの答えが正しいか否かを判断し、正しい答えを伝えてください。

- 【Bさんが問題を読む】も同様に行ってください。

例えば・・・

1.【Aさんが読む】

【状況・場面】 私の家の隣に住むJohnは、大変なことをしてしまいました。

【日本語】 Johnは家を燃やしました。

【答え】Bさん John .

英文は、Bさんが答えます

練習問題にでてきた動詞

burn, close, drop, dry, grow, open roll, separate, start

すべて「自他両用動詞（能格動詞）」です。

自動詞用法・他動詞用法、どちらの用法でも使われます。

自他両用動詞の文の構造： **他動詞**用法： 主語 ＋ 動詞 ＋ 目的語

自動詞用法： 主語 ＋ 動詞

自動詞他動詞の両方で使われる動詞

burn, close, drop, dry, grow, open, roll, separate, start, mix, begin, decrease, increase, turn, stop

等、他にも沢山存在します

日本語を活用しましょう！

英語の自他両用動詞を日本語で考えてみましょう

↓

日本語にも英語に対応する自動詞・他動詞用法があります

動詞　burn（～を燃やす・燃える）

他動詞用法「～を燃やす」/ 自動詞用法「燃える」

他動詞用法　構造：主語＋動詞＋目的語

英語：The strange man **burned** newspapers at the park.

日本語：見知らぬ男が公園で新聞紙**を燃やした**

自動詞用法　構造：主語＋動詞

英語：Dry paper **burn** easily.

日本語：乾いた紙は簡単に**燃える**

注意！

The can opened easily.

↓

この文は「**文法的に誤り**」で、

The can was opened easily. が正しいと答える人がとても多いです。

The can opened easily. / The can was opened easilyの両方とも

自動詞用法も、受動態の文も「**文法的に正しい**」ので、ご注意！

練習問題１・２　burn （～を燃やす・燃える）

他動詞用法　John **burned** newspapers at the park.

(Johnが公園で新聞紙**を燃やした**)

自動詞用法　Dry paper **burn** easily.

(乾いた紙は簡単に**燃える**)

練習問題３・４　close（～を閉める・閉まる）

他動詞用法　Taro **closed** the windows.

（Taroは窓**を閉めた**）

自動詞用法　The library **closes** at 9 p.m.

(図書館は午後９時に**閉まる**)

練習問題５・６　drop（～を落とす・落ちる）

他動詞用法　Jiro **dropped** her computer.
(Jiro はコンピューターを落とした)

自動詞用法　Many oranges **dropped** during the night.
（夜の間に、沢山のミカンが落ちた）

練習問題７・８　dry （～を乾かす・乾く）

他動詞用法　Ken's mother **dries** his hair.
(ケンのお母さんが彼の髪を乾かした)

自動詞用法　Your shoes will soon **dry**.
（あなたの靴はすぐに乾くでしょう）

練習問題９．１０　grow（～を育てる・育つ）

他動詞用法　My father **grows** vegetables in his farm.
(私の父は自分の農場で野菜を育てている)

自動詞用法　Bananas **grow** in warm climates.
（バナナは暖かい気候の中で育つ）

練習問題11 ・12　open（ ～を開ける・開く）

他動詞用法　Sam **opened** the window.
(Samは窓を開けた)

自動詞用法　The box **opened** easily.
（その箱は簡単に開いた）

練習問題13・14　roll（ ～を回す・回る）

他動詞用法　John **rolled** a ball.
(Johnはボールを回した)

自動詞用法　The car tire **rolled** slowly.
(その車のタイヤはゆっくり回った)

練習問題15・16　separate（～を離す・離れる）

他動詞用法　Their mother **separated** the fighting brothers.
（彼らの母親は喧嘩をしている兄弟たちを離した）

自動詞用法　Oil and water **separate** quickly.
（油と水は素早く離れる）

練習問題17・18　start（ ～を始める・始まる)

他動詞用法　Emily **started** her homework at 5 o'clock.
（Emilyは5時に宿題を始めた）

自動詞用法　The first class will **start** at 8 a.m.
（１時間目の授業は8時に始まるだろう）

自動詞・他動詞についての理解がさらに深まりましたか？

動詞に対応する日本語を考えてみると、
これらの動詞に対する理解が深まります。

3rd session

動詞の分類 3

－自動詞と他動詞の区別にもとづいて－

英語の自他両用動詞
（自動詞・他動詞の文どちらも可）を使った

文の主語の特徴

2 種類の自動詞の違い

下の例文①と②を表す絵をそれぞれ描きましょう

（時間制限あり：３分）

Aさん・Bさん、それぞれ違う絵を描きます

Aさん

TARO LAUGHED AT MR. TANAKA'S JOKE.　ANN LISTENED TO THE MUSIC.

Bさん

THE SNOW WAS FALLING.　THE TRAIN ARRIVED AT THE AIRPORT.

ペアワーク①

「ペアの人が描いた絵と英文」を「自分が描いた絵と英文」を見比べてみましょう。

Aさんが描いた絵に使われた動詞laugh, listenと
Bさんが描いた絵に使われた動詞fall, arriveには、
どんな違いがあると思いますか？
ペアの人と一緒に考えてみましょう！

Laugh, listenなどの動詞は.

（自発的・意図的・生理的な動き・行い・ふるまい）を表す自動詞

例　*cough, cooperate, despair, dive, depend, laugh, listen*

laugh（笑う）:
John **laughed** at a funny story. (Johnは面白い話で笑った)

listen（聴く）:
Tom **listened** to the radio.（Tomはラジオを聴いた）

Fall, arrive などの動詞は

↓

（　存在・生成・消滅などの「様子」を表す　）自動詞

例　*appear, arrive, come, die, fall, occur, stand, bloom*

appear (現れる):

The stars **appeared**. (星が**現われた**)

arrive（着く）:

The train **arrived** at the station. (電車が駅に**着いた**)

die（死ぬ）:

My dog **died**. (私の犬が**死んだ**)

laugh, listenなどの自動詞

fall arriveなどの自動詞

↓

主語の性質も異なります

ペアワーク②

「ペアの人が描いた絵と英文」を
「自分が描いた絵と英文」を見比べてみましょう。

Aさんが描いた絵に使われた英文の主語　Taro　と　Ann
Bさんが描いた絵に使われた英文の主語　The snow と Ann
の役割は、どんな違いがあると思いますか？

ペアの人と一緒に考えてみましょう！

Laugh, listenなど
（自発的・意図的・生理的な動き・行い・ふるまいを表す）自動詞

laugh　(笑う): Taro **laughed** at Mr. Tanaka's Joke (Johnは田中さんのジョークで**笑った**)

listen（聴く）: Ann **listened** to the radio. (Annはラジオを**聴いた**)

↓

主語：Taro, Ann は、

「 (答え) 動詞の動きを行う人や物体 」

Fall, arriveなど
（存在・生成・消滅などの「様子」を表す　）自動詞

Fall (落ちる): The snow was falling.　(雪が**落ちていた**)

appear (現れる): The stars **appeared**. (星が**現われた**)

arrive（着く）: Ann **arrived** at the station. (Annが空港に**着いた**)

die（死ぬ）: My dog **died**. (私の犬が**死んだ**)

↓

主語：The snow, Annなどは、

「(答え)　動詞の動きを受ける物体や人 」

自他両用動詞の自動詞用法

The box **opened** easily.　（その箱は簡単に**開いた**）

↓

（存在・生成・消滅などの「様子」を表す　）自動詞

主語　The box：動詞の動きを受ける物体（人）

今日のポイント！

他動詞用法・自動詞用法両方が使われる
動詞（open, close, separate, rollなど）の文の

「主語」に注目しましょう！

「主語」に注目しましょう！

他動詞用法　Sam opened the window.（Samは窓を開けた）

The company opened the new office.（その会社は新しいオフィスを開けた）

自動詞用法　We will open earlier than usual.（私達はいつもよりも早く開くだろう）

The box opened easily.　（その箱は簡単に開いた）

ペアワーク

上の２つの例文の主語

（Sam, the company, we, the box）を

何かの基準で、２グループAとBに分類しましょう。

どんな分け方ができるでしょうか？

グループA

Sam　と　we

↓

有生名詞 [+animate]

グループB

the company, the box

↓

無生名詞 [-animate]

ペアワーク

例文カードを見てください。他動詞用法・自動詞用法の文があります。

例文カードに書かれている主語を
有生名詞 [+animate]（○）　か
無生名詞 [-animate]（×）
かで分類してみましょう！

主語を有生名詞 [+animate] と無生名詞 [-animate]に分けて気づいたことも話しましょう！

答え

１つの動詞につき、
有生名詞が主語の文・・・2文
無生名詞が主語の文・・・2文

例　動詞　burn

有生名詞	無生名詞
The man burned his house.	A lot of bombs burned our city.
Ten people burned to death in a hotel fire.	Dry paper burns easily.

今日の重要ポイント！

他動詞用法・自動詞用法ともに、
主語は有生名詞[+animate],無生名詞[-animate]
名詞がなることができます

間違えが多い

自動詞用法・主語が無生物名詞[-animate]

例　The box opened easily

文法的に正しくない文であると判断する人が多いですが、

文法的に正しい文です

Appendices G: Study 2: Raw data

Experimental			Pre-test				Post-test 1				Post-test 2			
Participants	OQPT	Proficiency	Type A	Type B	Type C	Type D	Type A	Type B	Type C	Type D	Type A	Type B	Type C	Type D
S1	30	Intermediate	8	9	5	5	9	9	8	9	9	8	7	9
S2	32	Intermediate	9	8	5	3	9	9	7	9	9	9	8	9
S3	28		9	9	3	4	9	9	7	8	9	9	7	7
S4	25		8	9	4	4	9	9	9	9	9	9	9	9
S5	26		9	9	5	2	9	9	7	9	9	9	6	7
S6	22	Elementary	8	8	4	7	8	9	7	9	9	9	6	9
S7	28		7	9	4	8	9	9	9	9	9	9	9	9
S8	30	Intermediate	7	8	8	7	9	9	9	9	9	9	9	9
S9	25		8	9	6	6	9	9	9	9	9	9	9	9
S10	24		9	9	7	6	9	9	8	8	9	9	8	9
S11	31	Intermediate	4	6	3	4	9	7	7	5	9	8	9	9
S12	24		9	9	5	3	9	9	8	9	9	9	7	8
S13	32	Intermediate	9	9	6	3	9	9	9	9	9	9	9	9
S14	28		9	7	5	5	9	9	8	9	9	9	8	8
S15	20	Elementary	8	8	9	6	9	9	9	8	9	8	9	8
S16	25		8	7	8	4	9	9	9	9	9	9	9	9
S17	30	Intermediate	9	9	7	7	9	9	9	9	9	9	9	9
S18	27		9	9	7	5	9	9	9	8	8	9	8	8
S19	25		8	9	4	2	9	9	6	9	9	9	8	8
S20	27		8	8	2	4	9	9	9	9	9	9	7	9
S21	23	Elementary	9	8	6	4	9	9	8	9	9	8	6	8
S22	27		9	9	7	4	9	9	8	9	9	9	8	8
S23	31	Intermediate	9	8	5	2	9	9	8	6	9	9	8	8
S24	18	Elementary	7	6	6	3	9	9	9	9	8	8	6	7
S25	37	Intermediate	7	8	8	6	9	9	9	9	9	9	9	9
S26	27		9	9	7	6	9	9	9	6	8	8	8	8
S27	30	Intermediate	4	8	5	4	9	9	8	9	9	9	7	8
S28	30	Intermediate	7	5	7	5	9	9	8	8	8	8	6	8
S29	24		8	7	4	4	9	9	9	8	9	9	7	6
S30	21	Elementary	9	9	8	8	9	9	9	9	9	9	8	9
S31	20	Elementary	9	8	6	2	9	8	8	9	9	9	8	9
S32	20	Elementary	8	7	6	4	9	6	9	9	9	9	8	9
S33	22	Elementary	9	8	6	2	8	8	7	7	8	9	7	4
S34	22	Elementary	8	8	8	5	9	9	8	7	7	8	6	5
S35	31	Intermediate	9	9	7	4	9	8	9	8	9	9	8	9
S36	16	Elementary	9	8	8	6	9	9	8	8	9	9	9	9

S37	28		8	8	8	6	9	9	9	9	9	9	9	9
S38	16	Elementary	9	9	6	7	9	9	8	7	9	9	8	7
S39	25		7	7	7	4	9	9	9	8	9	9	8	8
S40	20	Elementary	8	9	5	4	9	8	9	9	9	8	7	5
S41	17	Elementary	8	8	8	5	9	9	9	9	9	9	7	8
S42	28		9	8	7	3	8	7	7	5	9	9	9	9
S43	27		6	8	7	7	9	7	7	9	9	8	9	9
S44	21	Elementary	9	9	6	3	9	9	8	8	9	9	8	9
S45	29		9	9	5	4	9	9	7	8	9	9	7	8

Control		Pre-test				Post-test 2			
Participants	OQPT	Type A	Type B	Type C	Type D	Type A	Type B	Type C	Type D
S1	28	7	9	7	5	9	9	7	9
S2	27	8	8	9	8	7	9	8	8
S3	20	7	4	7	4	9	6	6	2
S4	26	6	6	8	5	8	5	8	8
S5	24	9	9	6	3	9	7	6	3
S6	28	9	9	5	1	8	9	4	3
S7	28	9	7	7	4	9	9	7	7
S8	24	9	9	7	3	9	8	7	6
S9	29	9	8	6	7	8	9	6	7
S10	34	7	7	6	6	9	8	7	6
S11	20	8	8	9	4	9	9	7	7
S12	26	9	7	6	6	8	7	7	5
S13	21	6	7	8	4	8	8	7	6
S14	29	9	6	6	5	9	9	4	1
S15	24	4	8	5	2	8	4	7	4
S16	25	9	8	5	3	8	9	7	3
S17	20	8	9	4	2	8	8	6	2
S18	30	8	8	5	2	6	5	5	3
S19	28	9	9	6	4	8	9	7	7
S20	26	9	9	6	4	9	9	5	3
S21	24	9	9	9	5	8	9	8	7
S22	21	9	8	8	4	8	9	7	7
S23	18	7	5	6	4	6	6	6	3
S24	28	8	8	6	3	8	6	5	4
S25	24	7	7	8	4	7	5	3	7
S26	29	7	8	6	5	7	7	8	5
S27	27	7	5	5	4	6	7	6	5

Appendicies H: Study 2: Cluster Dendrogram