문학석사 학위논문

The Effect of Implicit and Explicit Instructions On the Acquisition of English Unaccusatives: Treating Overpassivization Errors

암시적 및 명시적 교수법이 영어 비대격 구문 습득에 미치는 영향: 과수동태화 오류의 교정

2012년 8월

서울대학교 대학원

영어영문학과 영어학 전공

문 수 현

Abstract

The Effect of Implicit and Explicit Instructions On the Acquisition of English Unaccusatives: Treating Overpassivization Errors

Sue-Hyun Mun

Department of English Language and Literature

The Graduate School

Seoul National University

L2 learners have a tendency to accept and overproduce unnatural or ungrammatical passive structures with English unaccusative verbs while they reject and underproduce unaccusative structures. This tendency is known as overpassivization. The purpose of this study is to find out which form-focused instruction, between implicit or explicit methods, better assists L2 learners' acquisition of English unaccusatives. Previous studies comparing the impact of implicit and explicit instruction reported that explicit instruction is more effective than implicit instruction. Yet, such a conclusion is based on data obtained from an improper measure or no measure of implicit knowledge. The current study observes development in both implicit and explicit knowledge using appropriate measures. Also, the complexity of a target structure needs to be carefully analyzed as complex forms are claimed to be better acquired through implicit learning (Reber, 1989, 1993; Krashen, 1982). This study provides systemic

accounts on why the English uanccusative is a complex structure. Lastly, the role of interactional task is discussed in the study.

Twenty-nine Korean university students were assigned to three conditions (implicit, explicit, control) and received instructions for three days. In the implicit group, structural priming and implicit feedback were provided during an interaction task. In the explicit group, metalinguistic explanation and an interaction task were carried out. Before and after the treatment, learners were tested for their explicit and implicit knowledge on English unaccusatives through grammaticality judgment tests and elicited oral production tests. The results showed that implicit and explicit instruction are both beneficial to acquisition of explicit knowledge, while only implicit instruction has a positive impact on acquisition of implicit knowledge. Therefore, the study concludes that implicit instruction is more efficient in assisting learners' acquisition of English unaccusatives.

On the other hand, further analyses on *happen*-type verbs (verbs without transitive counterparts) and *grow*-type verbs (verbs with transitive counterparts) revealed that explicit knowledge of the *grow*-type verbs did not develop under the implicit condition as efficiently as under the explicit condition. This might be due to the difference in complexity each verb type has. The *grow*-type verbs seem to pose more challenges to learners as learning of the *grow*-type requires remapping of form and function while learning of the *happen*-type only involves morphosyntactic knowledge. Thus, it is explicit instruction that facilitates more sophisticated development of explicit knowledge. Another set of analyses on transferability showed that implicit instruction assisted learners to develop some

abstract implicit knowledge that had been applied to new verbs, while explicit instruction did not. In this respect, implicit instruction may have strengths over explicit instruction.

There are three major implications of this study. First, implicit instruction can be more beneficial than explicit instruction in the acquisition of complex structures as Reber (1989, 1993) and Krashen (1982) claimed. Yet, the claim is better supported by observations from implicit knowledge rather than explicit knowledge. Second, learners can acquire some metalinguistic and abstract knowledge through implicit learning. This study supports the view that explicit knowledge can be acquired through implicit instruction, but provides no evidence of implicit knowledge learned through explicit instruction. Third, interaction plays a significant role in making both implicit and explicit instruction more effective. As Long's (1996) interaction hypothesis suggests, interaction boosts L2 learning even when it is combined with form-focused instructions as in this study. Based on the finding, a pedagogic recommendation is made that implicit instruction combined with interaction tasks is most effective in helping L2 learners' acquisition of English unaccusatives.

Keywords: English unaccusatives, overpassivization, implicit instruction, explicit instruction, implicit learning, explicit learning

Student Number: 2009-20018

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Chapter 1. Introduction

1.1. Background of Research

English unaccusative structures are reported to induce overpassivization errors among L2 learners. L2 learners tend to accept and produce ungrammatical passive sentences (**The accident was happened*) while rejecting and avoiding grammatical active sentences (*The temperature increased*) with unaccusative verbs. Previous studies revealed that there are three prominent causes of unaccusative overpassivization: syntactic configuration, L1 interference, and a discourse factor. Due to the unique syntactic configuration of unaccusative verbs, L2 learners inaccurately choose passive forms even when intentionality is not assumed in the context. If learners' L1 does express unaccusativity through unaccusative structures, L1 interference is also predicted to occur. L1 Korean learners, for example, whose language expresses automatic or spontaneous events through middle voice markers, are reported to generate errors with English unaccusatives frequently. Lastly, learners are more likely to make errors when an external cause of an event is available in the context. All these factors interplay and create difficulties in the acquisition of English unaccusative structure.

While many studies aimed to identify the causes of unaccusative overpassivization errors, only a small number of studies investigated the impact of instruction on unaccusatives. In this case, instruction refers to "an attempt to intervene in interlanguage development" (Ellis, 2009, p. 16). If overpassivization errors occur due to learners' lack of knowledge or processing ability with regard to unaccusative structures, instruction, especially form-focused instruction (FFI)

can provide learners an assistance to treat overpassivization errors by giving them positive input and opportunities to process the target structures.

Among various types of FFI, a comparison between the effect of implicit and explicit instructions has been often made. Implicit instruction enables learners to attend to rules without awareness while explicit instruction directs learners to focus on rules with awareness. In many studies, the impact of explicit instruction was observed to be more positive than that of implicit instruction (DeKeyser, 1995, 1997; Doughty, 1991; Ellis, 1993; Gass *et al.*, 2003; Norris & Ortega, 2000; Robinson, 1996, 1997; Rosa & O'Neill, 1999). However, paucity of evidence favoring implicit instruction may be a consequence of disregarding theoretical and methodological issues considering appropriate measures of acquisition, complexity of target structures, and tasks during instruction.

In the majority of studies, acquisition was measured only through a grammaticality judgment test (GJT), which is reported to measure primarily explicit knowledge (Ellis, 1991, 2005; Han, 2000). Yet, since implicit instruction facilitates unconscious processing of language input and is likely to result in procedural knowledge, its beneficial impact is better predicted from a measure of implicit knowledge. Without measuring both implicit and explicit knowledge, the impact of instruction cannot be accounted for fairly. To observe development in implicit knowledge as well as explicit knowledge, this study employs an elicited oral production test in addition to a GJT.

Moreover, the characteristics of a target structure needs to be considered carefully as the impact of instruction may differ with the complexity of the target domain. Reber (1989, 1993) and Krashen (1982) hypothesized that implicit learning is more effective than explicit learning when the target domain is

complex rather than simple or salient. The target structure of the current study, English unaccusative structure, has been considered a complex feature in previous research because of its complex form-meaning mapping (DeKeyser, 2005; Ellis, 2006). If Reber and Krashen's claim is true, English unaccusatives will be better acquired under implicit conditions.

Last but not least, whether a task used during instruction is interactional or not has significant impact on acquisition. Interaction hypothesis (Gass, 1997, 2003; Long, 1996; Mackey, 1999; Schacter, 1991; Schmidt, 1994, 2001) suggests that interaction facilitates L2 development by raising learners' awareness, making input more salient to learners, creating opportunities to produce language, and providing negative feedback. A number of empirical studies also reported positive impact of interaction on L2 structural development (Ellis *et al.*, 1994; Gass & Varonis, 1994; Gass & Mackey, 2007; Leeman, 2003; Long, Inagaki, & Ortega, 1998; Mackey, 1999; McDonough, 2006; McDonough & Mackey, 2008). Yet, few studies compared the effectiveness of FFIs using interaction tasks. Comparisons of implicit and explicit instructions have been mostly made using non-interactive tasks such as reading comprehension, memorizing, and metalinguistic explanation followed by grammar questions. The current study employs interaction tasks in both implicit and explicit learning conditions and observes whether they bring any difference in comparing the impact of instruction.

This study focuses on the following three issues related to the acquisition of English unaccusatives. First, it observes which instruction (implicit or explicit) has a greater impact on explicit and implicit knowledge of English unaccusatives. Explicit knowledge is measured with a written grammaticality judgment test and

implicit knowledge with an oral production test. In studies on psychometric tests, Han and Ellis (1998) and Ellis (2005) stated that an oral production test measures implicit knowledge. The characteristics of an oral production test used in this study are similar to those used in Ellis (2005) in that it elicits oral production from a given discourse. It satisfies the criteria for a valid measure of implicit knowledge suggested in Ellis (2005). Thus, the elicited oral production test is a well-constructed measure of implicit knowledge.

Second, the study observes which instruction has a greater impact on acquiring *happen* (unaccusatives without a transitive counterpart) and *grow*-type (unaccusatives with a transitive counterpart) verbs. In previous studies investigating the acquisition of English unaccusatives, Hwang (1999) and Kim (2004) found that the impact of instructions appeared differently on *happen* and *grow*-type verbs. While the *happen*-type verbs developed both under the implicit and explicit conditions, the *grow*-type verbs developed only under the explicit conditions. However, the two studies failed to provide sufficient reasons why such differences in learning appear. The current study examines whether the same learning pattern is observed in both the GJT and oral production, and provides more explanations.

Third, the study examines what impact implicit and explicit instructions have on transferability of rules. In L1 research, researchers (Bowerman, 1974, 1982; Tomasello, 2000) reported that prior to syntactic acquisition, learning based on individual lexical items takes place. Whether the same tendency exists for L2 learners or not has not been verified, but it is reasonable to assume that acquisition of a rule has occurred if learners can apply it consistently to new verbs. Following such an assumption, the study observes whether which

instruction better induces transfer of rules to new verbs.

With all these analyses at hand, the study concludes whether implicit or explicit instruction is more beneficial in learning English unaccusatives. Whether this study supports Reber (1989, 1993) and Krashen's (1982) hypothesis on superiority of implicit learning is also discussed. Pedagogic suggestions for L2 classrooms is also presented on how to teach English unaccusatives or other complex structures effectively using FFIs combined with interaction tasks.

1.2. Research Questions

The following research questions are examined in the current study.

1. Which instruction (implicit or explicit) has more beneficial impact on learners' explicit and implicit knowledge of English uanccusatives?
2. Do implicit and explicit instructions have a different impact on *happen* and *grow*-type verbs?
3. Do implicit and explicit instructions have a different impact on transferability?

1.3. Organization of Chapters

The current study is organized into five chapters. Chapter 2 summarizes the theoretical background and empirical findings in five sections: measures of implicit and explicit knowledge, complexity of a feature and instruction, causes of overpassivization errors, the impact of instruction on unaccusatives, and the role of interaction in L2 development. In Chapter 3, the method of the study is

described. In Chapter 4, the results and statistical analyses of the grammaticality judgment test and the oral production test are reported. Chapter 5 discusses and answers the three research questions. Finally, Chapter 6 concludes the findings of the study and reports implications and limitations.

Chapter 2. Previous Studies

2.1. Measures of implicit and explicit knowledge

The implicit/explicit dichotomy is applied at mainly three levels in second language research: learning mechanism, instruction, and memory storage. As a learning mechanism, implicit learning is typically defined as learning that takes place without awareness. So far, no consensus has been made on what 'awareness' means and whether any learning is possible without some degree of awareness (Ellis, 2009). To disambiguate various definitions of awareness, Schmidt (1994, 2001) made a distinction of two types of awareness: awareness as noticing and metalinguistic awareness. Noticing refers to conscious attention to surface elements during perception, whereas metalinguistic awareness refers to analysis of the underlying abstract rules. Although researchers disagree on whether implicit learning occurs without noticing, they agree that it occurs without metalinguistic awareness. Therefore, the current study operationalizes implicit learning as learning without any metalinguistic awareness and explicit learning as learning with metalinguistic awareness.

Since learning mechanisms are mental processes that cannot be directly observed or manipulated, SLA researchers have focused on identifying the learning conditions that induce implicit and explicit learning. The learning condition that directs learners to infer rules without metalinguistic awareness is called implicit instruction. Implicit instruction does not ask learners to attend to particular forms neither as rule representation nor as directions (Norris & Ortega, 2000). Instead, by providing learners with exemplars of a rule or pattern, implicit

instruction creates "an environment enriched with the target feature without drawing learners explicit attention to it" (Ellis, 2009, p. 17). On the other hand, explicit instruction directs learners to learn abstract rules. As DeKeyser (2003) describes, it encourages learners to understand or analyze metalinguistic rules inductively (by assisting learners to identify the rule from data) or deductively (by providing grammatical description of the rule).

Implicit and explicit knowledge are the distinction made on a dual memory system with different characteristics. Implicit knowledge refers to knowledge about "the distributional properties of language, which can only be revealed to the learner through substantial and repeated experiences with input" (Ellis, 2002, p. 224). It is activated through automatic and unconscious processing. Explicit knowledge, on the other hand, consists of metalinguistic rules which is consciously formed by the learner or learned through instruction. It involves controlled processing and focal attention to be activated.

Since implicit and explicit knowledge differ not only in terms of what they consist of, but how they are processed, it may seem plausible to assume that implicit and explicit knowledge are acquired through distinct learning mechanisms. However, researchers warn that it may be too simplistic to make such a correlation. Ellis (2009, p. 33) stated that "it is not unreasonable to assume that implicit knowledge arises as a result of implicit processes, although it is perhaps less clear that explicit knowledge is inevitably the result of explicit processes." DeKeyser (1995; 2003), on the other hand, observed that learners' intentional practice of linguistic forms leads to automatic and proceduralized skills, which might be an indication of implicit knowledge. Based on their arguments, the current study assumes that explicit knowledge can be obtained

through implicit learning, and implicit knowledge through explicit learning. Figure 1 describes the relationships between implicit and explicit instructions, learning and knowledge that are operationalized in the current study.

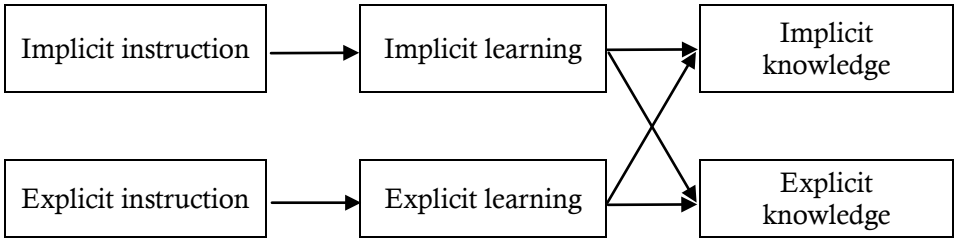


Figure 1. Relationships between instruction, learning, and knowledge

The distinctions between implicit and explicit learning and instruction are considered important in SLA research because differences in learning mechanisms are thought to be the main reason for different learning outcomes. Which FFI promotes L2 acquisition better is still an ongoing debate. While positive impact of implicit learning was observed in cognitive psychology (Berry, 1988; Reber, 1989; Reber *et al.*, 1980), such evidence was rarely reported in SLA research. The majority of empirical studies on SLA confirmed superiority of explicit conditions over implicit conditions (DeKeyser, 1995, 1997; Doughty, 1991; Ellis, 1993; Gass *et al.*, 2003; Ko, 2008; Norris & Ortega, 2000; Robinson, 1996, 1997; Rosa & O'Neill, 1999). At the same time, criticisms were raised regarding partiality and validity of measurement since the majority of studies comparing the impact of implicit and explicit instructions did not employ a measure of implicit knowledge. Without considering development in both types of knowledge, a study cannot claim superiority of explicit instruction over implicit instruction.

In measuring implicit knowledge, DeKeyser (2003) pointed out a measure of implicit knowledge should be appropriate and equally sensitive to the measure of explicit knowledge to fairly account for explicit and implicit learning. Timed GJTs were often used as a measure of implicit knowledge, but time pressure alone does not guarantee the use of implicit knowledge (DeKeyser, 2003). Free production tasks are seen as the best means of measuring learners' implicit knowledge (Ellis, 2002), but it may be a too sensitive measure compared to yes/no grammaticality judgment tests which allow guessing.

In an attempt to develop an appropriate battery of tests that elicit implicit and explicit knowledge, Ellis (2005) proposed several criteria for measures of implicit knowledge. The measure of implicit knowledge should (a) put test-takers under pressure to perform in real time, (b) make learners focus primarily on meaning, and (c) pose no reason for learners to access metalanguage. Based on such criteria, he compared the reliability and correlation of the elicited oral imitation test, the oral narrative test, and the timed GJT as a measure of implicit knowledge. In the elicited oral imitation test, the test-takers were asked first to say whether they agreed or disagreed with a given oral statement, and then to repeat the sentences orally. In the oral narrative test, test-takers read a story twice and retold the story orally in three minutes. The statistical analyses showed that the elicited oral imitation test was most predictive of implicit knowledge. This implies that under the condition that learners have to comprehend meaning at the same time they have to produce a sentence, they are more likely to use implicit knowledge, than under the condition they can comprehend and produce separately.

To ensure implicit knowledge is measured appropriately, the current study uses

an elicited oral production test that is constructed similarly to the oral imitation test used in Ellis (2005). The elicited oral production test meets all criteria described by Ellis and makes learners comprehend meaning and produce a sentence simultaneously. The measure of implicit knowledge is not more sensitive than the measure of explicit knowledge in this study since both measures are designed equally to allow a 50-percent chance of guessing. By measuring development of both implicit and explicit knowledge with appropriate and equally sensitive measures, the study attempts to make unbiased comparisons between the impact of implicit and explicit instructions. In so doing, it reevaluates the effectiveness of each instruction in L2 acquisition.

2.2. Complexity of features and instruction

The differential effect of instruction on structures with different complexity is another issue that has received much attention. Researchers have proposed that target structures with different complexity may benefit differently from instructions. Reber (1989, 1993) argued that when the stimulus domain is complex, implicit learning is more effective than explicit learning whereas if the stimulus domain is simple, explicit learning is more beneficial. Indeed, he stated that the complex stimulus domain is the precondition for the operation of implicit processes (Reber, 1993, p. 49). In SLA, Krashen (1982) has made similar claims about the complexity of a form. He asserted that while easy rules can be consciously learned and remembered, complex rules must be induced through unconscious processes which lead to acquisition.

The claim of superiority of implicit processing with complex forms, however, was disproved in Robinson (1996). In the study, the researcher compared the

impact of incidental, implicit, rule-search (explicit inductive), and instructed (explicit deductive) learning on the acquisition of easy and hard rules. Based on teachers' grading of difficulty, a subject-verb inversion after adverbial was selected as an easy rule, and pseudocleft of location was selected as a hard rule. The results from the GJT showed that the instructed group performed best on both the easy and hard rules. Robinson concluded that learning of both simple and complex rules is most effective and fast when the target structure is made salient through explicit instruction, emphasizing the role of metalinguistic awareness.

However, Robinson's (1996) study has several methodological problems related to the measurement and selection of target structures. First, since the study did not include any measure of implicit knowledge, it is difficult to simply conclude that the instructed group performed best. A deeper analysis on the results showed that the instructed group outperformed the other groups in judging grammatical sentences, but it performed worst in judging ungrammatical sentences. The implicit group, on the other hand, performed just as well in judging both types of sentences, providing evidence of more systemic language development. Thus, if other measures of knowledge had been applied, the results may have been different. Moreover, the definitions of simple and complex rules are not well grounded. It relied on teachers' judgment in deciding the rule complexity, but teachability and learnability do not necessarily match. Teachability is more likely to refer to difficulty in terms of explicit knowledge since teachers may find a rule more difficult to teach if more complex metalinguistic information is needed for teaching. Finally, in the complex rule condition, the researcher measured a

higher number of linguistic traits[1] than in the simple rule condition. Whether demonstrating knowledge on more number of linguistic traits at a time can be accounted as knowledge on a complex rule is questionable.

What 'difficulty' or 'complexity' of a rule means is not a simple matter. However, a more systemic view on complexity is available in SLA literature. DeKeyser (2005) pointed out that the definitions of grammatical difficulty appearing in various studies were not found to be consistent and involved at least three factors: complexity of a form, complexity of meaning, and complexity of the form-meaning mapping. According to his distinctions, complexity of form refers to difficulty in making a right inflectional or morphological choice in the right place. Errors in verb agreement or word order are related with this kind of difficulty. Complexity of meaning refers to novel or complex contexts where a form is being used. Complexity of form-meaning mapping refers to discourse motivated errors. If more than one form is grammatically possible, but one of the options is preferred in a given context, learners have to choose the preferred form to convey the intended meaning. Thus, not the grammaticality of a form, but the correct use of a form matters in such cases. Errors in English articles, dative and locative alternation, and unaccusative structures are related to this category.

Ellis (2006), empirically compared the relative learning difficulty of 17 grammatical structures in terms of implicit and explicit knowledge. He used an oral imitation and a timed GJT to measure implicit knowledge, and an untimed

[1] For subject-verb inversion after adverbial, participants were asked to judge correct word order and obligatory use of locative adverbials (e.g. **On Saturday night danced Charlie*.) For pseudoclefts of location, however, participants were asked to judge not only correct word order and types of *wh*-clause, but also subject-verb agreement (e.g. **Where Charlie writes are at a desk*.), tense agreement (e.g. **Where the bird is was in the sky*.), and obligatory negation (e.g. *Where the horse stands is in the field *(not) in the barn.*)

GJT and a metalinguistic test to measure explicit knowledge. According to his analyses, unaccusative structures belonged to a difficult structure in terms of explicit knowledge, along with adverb placement and counterfactual conditional. It did not belong to a difficult structure in terms of implicit knowledge[2], but the timed GJT scores of unaccusative verbs were below average. Thus, it is not unfair to assume that unaccusative verbs pose some degree of difficulty in terms of implicit knowledge as well.

In short, more beneficial impact of explicit instruction observed in the previous studies may have been the results of simplicity of a target structure or incorrect interpretation of 'complexity'. In both DeKeyser (2005) and Ellis's (2006) analysis on complexity, English unaccusatives were considered a complex form. Therefore, examining the impact of instruction on the acquisition of English unaccusatives lets us account for the issue whether complex forms are better acquired under implicit learning conditions or not. In this way, a more accurate picture of differential impact of instruction in L2 acquisition can be drawn.

2.3. Causes of unaccusative overpassivization errors

ESL learners' tendency to overextend a passive structure to unaccusative verbs has been investigated in many studies (Balcom, 1997; Hirakawa, 1995; Hubbard, 1994; Montrul, 1999; Oshita, 2000, 2001; Yip, 1995; Zobl, 1989). The line of research done on the causes of unaccusative errors can be categorized three ways: structural complexity, L1 interference, and discourse factor. The three causes are

[2] Indefinite articles, counterfactual conditionals, and questions tags were categorized as difficult structures.

interrelated rather than one dominating the others.

First, the unique syntactic configuration of unaccusative structures leads to structural complexity. Unaccusative structures share a semantic characteristic that the subject serves a Theme or Patient role that lacks volition. This is different from the canonical subject of a sentence which serves an Agent role. Perlmutter (1978) and Burzio (1986) hypothesized that the subject of unaccusative verbs is base generated in the post-verbal position at D-structure and then moves to the subject position. This idea is known as the unaccusative hypothesis.

(1) a. Unaccusative verb: [[V NP]] (e.g. [__[melt ice]])

b. Unergative verb: [NP [V]] (e.g. [Babies [laughed]])

The unaccusative hypothesis predicts that learners make more structural errors with unaccusative verbs than they do not with unergative verbs. Zobl (1989) argued that learners make passivization errors because the syntactic configuration of unaccusatives is similar to the passive structure. By adding passive morphemes to unaccusative verbs, learners reduce the burden of placing a Patient or Theme in the subject position. In other words, idiosyncrasy of the unaccusative lexical rule is likely to be subsumed under the passive rule. Kellerman (1978) and Oshita (1997) also found the similar tendency of L2 learners' not allowing unaccusatives in canonical NP-V word order.

On the other hand, Yip (1990) argued that overpassivization errors are produced since learners interpret unaccusatives as underlyingly transitive. Balcom (1997) and Montrul (1999) similarly argued that incorrect lexical

causativization is the source of overpassivization. The causativization hypothesis fits more plausibly to unaccusative verbs with transitive counterparts. It may explain the reason why errors are more persistent with verbs with transitive counterpart than verbs without transitive counterpart (Hwang, 1999, 2006). Learners may have more difficulties in producing unaccusative sentences with unaccusative verbs that have a transitive counterpart because they encounter many examples of them being used in passive forms. Yet, even with unaccusative verbs that do not have a transitive counterpart, L1 and L2 developmental errors are observed (Bowerman, 1974, 1982; Lee, 2007, 2010; Rutherford, 1987). Learners use verbs like *happen, occur,* or *progress* as transitive verbs (e.g. *This construction will progress my country*). Lee (2010) directly tested the causativization hypothesis by investigating the relationship between overpassive and overcausative errors. The results showed that more learners tend to accept and produce ungrammatical passives if they accept and produce ungrammatical causatives. Thus, overpassivization and overcausativization may be somewhat related phenomena, although causativization is not the sole cause of passivization.

The L1 interference account relates unaccusative errors with typological matters. Researchers (Kellerman, 1979; Levin & Rappaport Havov, 1995) noted that morphosyntactic typology can be the major source of learning difficulty of unaccusative verbs. Unaccusative verbs pose great challenges to learners because they violate the single-argument linking rule, a universal rule which states that an external argument of a verb is realized as a subject.

(2) <Unergatives> <Unaccusatives>

LSR: [x *LAUGH*] [y *FALL*]

↓ ↓

ASR: (x) (y)

When learning a typologically more marked structure, learners are likely to feel more of a cognitive burden and tend to rely on their L1 knowledge. In fact, languages have various ways to express unaccusativity (Ju, 2000). While some languages (i.e. German, Dutch, Italian, French) express unaccusativity by making a structural distinction with the auxiliary verb and past or perfective markers, other languages rely on a morphological distinction such as putting passive markers on unaccusative verbs (i.e. *-ji, -i, -hi, -li, -gi* in Korean). Since no morphological markers are available in English, L2 learners rely on the structural distinction by using the passive form to reduce the cognitive burden of violating universal single-argument linking rule.

More L1 transfer is predicted to occur with unaccusative verbs that have overt morphosyntactic cues in their L1.In fact, whether to put morphosyntactic cues on a certain verb or not is language specific. In Korean, for example, morphological markers are put on only some of the unaccusative verbs.

(3) a. ece muwl-i el-et-ta

yesterday water-NOM freeze-PAST-DECL

'Water froze yesterday.'

b. nalci-ga gapcagi pakkuw-i-et-ta

weather-NOM suddenly change-PASS-PAST-DECL

'The weather suddenly changed.'

c. gyehoek-i pakkuw-i-et-ta

schedule-NOM change-PASS-PAST-DECL

'The schedule (was) changed.' (Hwang, 2006)

As in example (3-a), *el-ta* (freeze) and many other Korean unaccusative verbs do not put passive morphemes when forming unaccusative sentences, while some verbs like *pakkuw-ta* (change) attach passive morphemes when they form unaccusative or passive sentences. In addition, Korean is different from English in that passive sentences look structurally the same as unaccusative sentences as in (3-b) and (3-c). Therefore, whether to interpret (3-c) as a passive sentence or not depends on the context rather than on the structure.

Hwang (2006) asserted that L1 is partly the source of unaccusative errors by observing Korean learners' different error rate in *happen*-type verbs (those without a transitive counterpart) and *grow*-type verbs[3] (those with a transitive counterpart). While some Korean *grow*-type verbs allow attachment of passive morphemes, there are, he argued, no Korean *happen*-type verbs that allow attachment of passive morphemes. The analysis showed that learners' percentage correctness with the *happen*-type verbs was higher than that of *grow*-type verbs among low and intermediate learners. However, such a tendency disappeared among advanced level learners. Hwang argued that this is because L1 transfer

[3] Hwang (2006) named this kind of verbs *change*-type verbs. Yet, since this study refers to the same kind of verbs as *grow*-type verbs, the same term is used for consistency.

occurs more often at the beginning and the intermediate levels, but it plays little role at the advanced level.

However, Hwang (2006) could not confirm the similar trend with the types of verbs among L1 Japanese learners in which he predicted more L1 related errors would occur. In bi-directional L2 studies of Korean and English, Lee (2009) also refuted the view that L1 morphological transfer is solely responsible for unaccusaive errors. Both English and Korean learners showed the tendency to prefer passive forms in active contexts in the L2.

Others argued that contextual factors, more than interlingual or intralingual complexity, contribute to overpassivization errors. Ju (2000) made an observation that the existence of conceptualizable agents in a context affects the error rates of overpassivization. By conceptualizable agents, she meant external causes of an event as in (4-a).

(4) a. <u>Heavy trucks</u> put more and more pressure on the bridge.
It (broke/was broken) gradually.
b. The wooden bridge was very old.
It (broke/was broken) gradually. (Ju, 2000)

(4-a) and (4-b) essentially describe the same event (*the bridge broke gradually*). Yet, while (4-a) is externally caused (by *heavy trucks*), (4-b) is internally caused. Ju found out that learners tend to produce more overpassivization errors in cases like (4-a), when an agent or external cause is available in the context. Such tendency was found not only with the *grow*-type verbs, but also with the *happen-*

type verbs.

Chung (2009, 2011) also stated that contexts play a major role in inducing unaccusative errors among other factors. He compared the effect sizes of four different factors: animacy, verb alternation, external causation, and L1. Animacy and external causation were discourse variables, verb alternation belonged to an intralingual factor, and L1 an interlingual factor. He obtained the data from L1 Korean and Chinese learners and compared the effect size of each factor. The results showed that external causation had the largest effect size, which correspond to what Ju (2000) suggested.

The observation that contextual factors play a major role in unaccusative errors is in line with DeKeyser's (2005) analysis that says the difficulty of unaccsative structures arises from complexity in form-function mapping. When learners have to express spontaneous events or change of states, their grammar knowledge suggests that both active and passive sentences are possible with unaccusative verbs (especially with *grow*-type verbs). To resolve uncertainty and optionality in using the *grow*-type verbs, learners tend to rely on contextual cues. If they find a conceptualizable agent in the context, they are more likely to interpret the event to be intentionally caused by the conceptualizable agent and produce passive sentences. When such processes are repeated, learners make a wrong form-function mapping and form an assumption that passive sentences do express spontaneous events or change of states.

What learners do not realize is that English passives are unnatural if they are used with an event that lacks volition or intention. Therefore, to treat overpassivization errors, form-focused intervention or instruction is needed to make learners recognize the wrong functional mapping. Both treatment groups

receive such a treatment in this study. During explicit instruction, learners are given metalinguistic lessons and explicit feedback on when they should and should not use unaccusative structures. During implicit instruction, on the other hand, learners are provided with ample examples of unaccusative structures and receive implicit feedback. In so doing, learners in both conditions have opportunities to process the unique form-function mapping of English unaccusatives.

2.4. The impact of instruction on unaccusative errors

Only a few studies compared the impact of instruction on English unaccusative acquisition. Two major variables that have been discussed in comparing the impact of instruction are types of verbs (Hwang, 1999; Kim, 2004) and transferability (Hwang, 1999; Lee, 2006).

Types of verbs refer to the *happen*-type and the *grow*-type distinction which was explained earlier. Researchers predicted a differential impact of instruction on the *happen* and *grow*-type verbs. Hwang (1999) predicted that learners' knowledge about the *grow*-type verbs would be improved under an implicit condition, while their knowledge about both types of verbs would increase under an explicit condition. This is because only learners under the explicit condition would be provided with explicit negative feedback on the passive use of the *happen*-type verbs. Under the implicit condition, learners were assumed to be unable to recognize the errors since no negative feedback is available. Contrary to his original predictions, however, the implicit group performed significantly better than the control group with the *happen*-type verbs but not with the *grow*-type verbs. Both types of verbs showed a significant improvement under the explicit

condition. Hwang did not fully explain why the implicit group showed a positive change only with the *happen*-type verb, although he mentioned that his research supports the view that positive evidence alone can help parameter resetting even in L2. In Kim (2004), the similar trend that the implicit group improved more with the *happen*-type verbs than with the *grow*-type verbs was found. Yet, whether the improvement with the *happen* or *grow*-type verbs was statistically significant was not confirmed since the study did not have a control group. Based on the fact that only the main effect of instruction was significant, but not verb types, Kim concluded that the results suggest superiority of the explicit instruction over the implicit instruction. The current study examines whether the same trend in development with the *happen* and *grow*-type verbs is replicated and provides explanations.

Second, transferability refers to the degree to which learning is transferred to new verbs that were not used during the treatment. Evidence of learning with new verbs is often regarded as the result of pure acquisition, which is distinguished from the effect of training. In previous studies, transferability was shown to be different depending on instructional methods. Lee (2007) examined the effects of instructional methods (instance-based and rule-based) on the causative alternation of unaccusative verbs. While both treatment groups outperformed the control group with the taught verbs, only the rule-based instruction group performed significantly better than the control group with new verbs. Lee argued that this was because learners in the rule-based group could analyze and understand the target feature better, and that the study confirmed the superiority of the rule-based method over the instance-based method. Hwang (1999) related the issue of transferability with verb types. He analyzed the

acquisition of new *happen-* and *grow*-type verbs separately. The results showed that both implicit and explicit instructions had a positive impact on the *grow*-type verbs, while no rule transfer occurred with the *happen*-type verbs. Thus, transfer only occurred with the *grow*-type verbs for both treatment groups. The current study analyzes the impact of instruction on transfer to new verbs and reports which instruction facilitates transfer more effectively.

To state simply, developmental research so far has shown that explicit instruction has a more positive impact than implicit instruction on unaccusatives. This finding is consistent with the previous research on the impact of instruction using other target structures. Yet, neither Hwang (1999) nor Kim (2004) implemented a measure of implicit knowledge. By using both the GJT and oral production test, this study provides more analyses on the impact of instruction on each type of verbs and transferability.

2.5. The role of interaction in L2 development

The interactionist approach on language acquisition asserts that interaction plays positive roles in L2 development (Gass, 1997, 2003; Long, 1996; Mackey, 1999; Schachter, 1991; Schmidt, 1994, 2001; Pica, 1994). As McDonough (2006) pointed out, however, interaction research has focused primarily on the role of interaction as opportunities to receive negative feedback and produce modified output. Other cognitive processes, especially structural priming, may play a significant role in the acquisition of L2. Structural priming refers to speakers' tendency to repeat previously heard or spoken structures. The positive impact of structural priming during interaction on L2 development was reported in several studies, especially with English datives (McDonough, 2006) and questions

(McDonough & Mackey, 2008). In both studies, the L2 learners were able to produce forms that used to be above their ability after being exposed to structural priming.

In Ferreira and Bock (2006), the mechanism of how structural priming constitutes implicit learning has been discussed. While speaking or listening, interlocutors link features of ideas (messages) to syntactic configurations in the grammar of a language. During the process, they have to decide how the relational contents (e.g. agent, patient, theme…) of their message map onto grammatical entities (e.g. subject, direct object…). That process is called grammatical encoding. Structural priming, which is induced by residual memory of previously heard utterances, helps the fine tuning of grammatical encoding. Once structural priming occurs, the linking between message and syntactic configuration is formed and strengthens. In this way, structural priming formulates well-tuned, context-sensitive grammar.

Since structural priming is such a powerful mechanism that is observed across many structures, the use of English unaccusatives may also be promoted by structural priming. Based on such an assumption, a pilot study was carried out to see whether structural priming occurs during an interaction task using English unaccusatives. In Mun (2010), thirteen L1 Korean university students were divided into two groups, a priming and control group. For the priming group, a pair-wise interaction task using unaccusative verbs was carried out for 20 minutes while the control group did the same interaction task using filler verbs. They were pre- and post-tested for their knowledge on English unaccusatives through an elicited oral production. The t-test revealed a significant difference between the two groups ($F=10.81$, $p < .01$). Thus, structural priming did occur with

English unaccusatives. Yet, since the study did not include a delayed posttest, it was not obvious whether structural priming led to learning or not.

Based on the previous findings, the current study employs structural priming during an interaction task as a part of implicit instruction. To ensure that learning, not only structural priming, has taken place, the study implements a delayed posttest as well as an immediate posttest.

On the other hand, interaction also facilitates explicit learning by raising learners' awareness of language form (Ellis, 1991; Gass, 1997, 2003; Schmidt, 1995, 2001) and providing opportunities for learners to produce the target structure and monitor their inappropriate utterances (Swain, 1985, 1993, 1995).

In Ko (2008), the issue of whether learning conditions or task types have more of an impact on learning was exploited. Using the same simple and complex rules as were used in Robinson (1996), Ko hypothesized that the type of tasks (reading comprehension or written production) during treatment affects learning outcomes. Participants were assigned to four groups: EC (explicit condition and comprehension task), EP (explicit condition and production task), IC (implicit condition and comprehension task), and IP (implicit condition and production task). Acquisition was measured by a GJT and controlled written test. The results showed that while the EP performed best in production, both the EP and the IP performed better than the EC and the IC in comprehension of a complex rule. No significant difference was found for comprehension of a simple rule. Based on these findings, the researcher concluded that metalinguistic awareness promoted through explicit instruction and a production task is most effective in L2 structural acquisition than implicit instruction combined with a production task or instructions combined with a comprehension task.

Ko (2008) showed how effective instructions can be when it is combined with learners' opportunities to test hypothesis and receive feedback. In the current study, learners who participated in the explicit group have chances to produce what they have learned and receive explicit feedback during a pair-wise interaction task. In so doing, the study ensures that learners' metalinguistic awareness is promoted and explicit learning takes place.

Chapter 3. Method

3.1. Participants

3.1.1. Learners

Thirty-three L1 Korean students of Seoul National University were recruited from online postings. After the survey and the pretest, three of the participants were screened out due to the mastery on the target form. The rest of the participants were assigned to three groups (the implicit, explicit group, and control group). The pretest scores of the three groups were not statistically different. One participant in the control group was excluded from the analysis since he did not complete all the tasks during the treatment sessions. The mean age of twenty-nine students (17 female and 12 male) who participated in all of the sessions was 23.89 years old, ranging from 19 to 30. Their mean score on TEPS (Test of English Proficiency developed by Seoul National University) was 740, ranging from 650 to 865[4]. Table 1 summarizes the group means for the participants' age and TEPS scores.

Table 1. Group Means for Age and TEPS Scores

	Implicit (n=10)	Explicit (n=10)	Control (n=9)	Total (n=29)
Age	25	23.5	23.3	23.89
TEPS	735.33	749.9	740	740

[4] The corresponding iBT TOEFL score would be from 93 to 112 according to the conversion table provided by the TEPS Council.

The three groups of participants were divided into four classes, one class of the control group (*n*=9), one class of the explicit group (*n*=10), and two classes of the implicit group (*n*=5/5). The reason that the implicit group was divided into two classes was that the equal number of scripted interlocutors (*n*=5) has to be assigned to each implicit group's class. As a consequence, each class had the same number of students except for the control group's class where there had been one dropout.

3.1.2. Confederated interlocutors

Confederated interlocutors refer to assistants of the experiment who provide structural priming and feedback during interaction with learners in the implicit group without being recognized as assistants. The confederate scripting technique was originally created by Branigan and colleagues (Branigan, Pickering, & Cleland, 2000) as a way to provide structural priming during conversation. The technique has been applied in other L2 structural priming studies to elicit primed production during interaction (McDonough, 2006; McDonough & Mackey, 2008).

Five confederated interlocutors, also students of Seoul National University, participated in training for the implicit group. They all major in English (2 undergraduate and 3 graduate students) and had higher TEPS scores than the learners' mean TEPS score. As English majors, they had relatively more opportunities to interact in English, and had better knowledge of English structures including unaccusatives. Before the treatment sessions, they were informed about the purpose, design and characteristics of the experiment for 20 minutes. Then, they were given explanations about the characteristics of English

unaccusatives, and trained for the accurate use of unaccusative verbs for 30 minutes.

During the treatment sessions, they participated in an interaction task as if they were one of normal participants. They were asked to maintain as natural interaction as possible while providing positive input to the partner and not to point out or correct their partner's mistakes.

3.2. Target structure

The target structure of the study was English unaccusatives. Between two types of unaccusative verbs (with or without a transitive counterpart), a larger number of *grow*-type verbs were included because there are more such verbs. 18 trained verbs (including 5 *happen*-type verbs) appeared both during the treatments and in the tests. 16 untrained verbs (also including 5 *happen*-type verbs) were employed only in the tests to measure to what extent learners' knowledge for trained verbs transferred to other unaccusative verbs. The list of verbs is summarized in the following table.

Table 2. List of Unaccusative Verbs Used in the Study

Trained verbs (*n*=18)		**Untrained verbs(*n*=16)**	
w/o transitive counterparts	with transitive counterparts	w/o transitive counterparts	with transitive counterparts
happen, emerge, depart, vanish, fall	*decrease, increase, open, close, freeze, break, expire, dry, dissolve, evaporate, burn, float, grow*	*appear, disappear, die, arrive, remain*	*improve, melt, shrink, expand, sink, approach, collapse, drop, heal, rise, recover*

3.3. Treatment

3.3.1. The implicit condition

The implicit condition was explained to subjects as an interaction task. They participated in a pair-wise interaction task named "*The Earth and the Twin Earth*". This task was devised by the researcher of the current study to create a meaning-focused interactional environment while at the same time ensuring participants' constant exposure to positive input and implicit feedback. During the task, a participant is given cards on which a partial sentence, a picture, and vocabulary cues are written (see APENDIX A), and asked to describe a certain situation by completing the sentence. The listener then judges whether the situation sounds normal or abnormal in the light of their common sense and world knowledge. If the situation sounds normal, the listener points out that it happens in *the Earth*, if abnormal, in *the Twin Earth*. Then he or she describes the opposite situation using a negation. The participant repeats this process by taking turns with a confederated interlocutor. An example of interaction is presented in (5) and (6).

(5) A: In my planet, if you are more stressed, <u>the risk of cancer increases</u>.
… (Prime by a confederated partner)
B: Your planet must be the Earth.
A: That's right.
B: In my planet, if you are more stressed, <u>the risk of cancer doesn't increase</u>. **… (Structural repetition by a learner)**

As in (5), if the confederated partner first produces the target-like sentence using *increase*, the learner processes the sentence to understand its meaning and makes a meaning judgment. Then, the learner reproduces a negated sentence

using the sentence previously heard. In this way, structural priming takes place both in a comprehension and production channel. If the pair switches the turn, the learner has a chance to produce the target structure first as in (6). The confederated interlocutor (A) does not make an attempt to correct even if the learner (B) makes a mistake.

(6) B: In my planet, when the air is humid, water is evaporated.

… (Non-Target-like production by a learner)

A: Your planet must be the Twin Earth.

B: That's right.

A: In my planet, when the air is humid, water doesn't evaporate.

… (Target-like structure by a confederated partner)

Instead, the confederated interlocutor makes a meaning judgment and produces a correct negation sentence of what he or she has just heard. This target-like structure serves as an implicit feedback to the learner.

The instructor monitored the interaction task, interrupted at times to provide feedback on the meaning (e.g. When participants made a wrong meaning judgment, "*Do you really think that water floats on oil in the Earth?*") and answered questions about the meaning of words or pragmatic knowledge. The participants were coupled with different confederated interlocutors in each treatment session in order to minimize the impact of different speech styles of individual confederated interlocutors.

There were 72 sentence cue variations, each of the 18 training verbs appearing four times respectively. The participants could not finish the 72 cards in the first treatment session. However, as they got used to the task, some pairs were able to

finish the whole set. In such cases, they were asked to repeat the set.

3.3.2. The explicit condition

In the explicit condition, 15-minute metalinguistic explanations were followed by a 15-minute pair-wise oral interaction task. The metalinguistic explanations consist of four parts: (a) focusing learners' attention on the two optional circumstances where either an active or a passive construction with unaccusative verbs is preferred, (b) contrasting the semantic role of a subject (Theme or Patient) in an unaccusative active sentence with that in an unergative active sentence (Agent), and explaining semantic characteristics of unaccusative structures, (c) highlighting the *happen*-type verbs, which barely appear in passive forms and contrasting them with the *grow*-type verbs, which often appear in passive forms, and (d) introducing the examples of an active/passive sentences using various unaccusative verbs and asking learners to fill out the gap with appropriate verb forms. During the second and third treatments, (a) and (b) were reviewed briefly, and more time was spent on (c) and (d).

In the explicit condition, the participants were asked explicitly to focus their attention on the form-function mapping of English unaccusatives. The volition or intentionality of an event was highlighted in differentiating the active and passive use. For example, if an event is a natural phenomenon (e.g. *Rain fell heavily on the plain.*) or a large-scale social shift (e.g. *The population increased in that country*.) which volition or intentionality can barely involve in, the participants were told that they should not use passive forms. Also, during gap-filling activities, they were asked to explain the reason why a sentence like (7-a) requires a passive form of *freeze* while (7-b) requires an active form.

(7) a. I ate ice cream that <u>was frozen</u> in three minutes by pouring liquid nitrogen.

b. We followed the recipe we always have and found that the ice cream <u>froze</u> after three hours.

After the metalinguistic explanations, the participants carried out the "*Earth and the Twin Earth*" task in pairs, but they did so without the negation turn (e.g. *In my planet, when the air is humid, water doesn't evaporate.*) Instead, the participants were asked to comment on their partner's formal mistakes and to correct them. The instructor moved around the classroom and provided explicit feedback on the unaccusative use, answered participants' questions, and discussed the meaning differences that active and passive forms bringfor each example.

3.3.3. The control group

The control condition was also explained to participants as an interaction task. The control group participated in the same "*Earth and the Twin Earth"* task using non-target verbs. The interaction task provided learners opportunities to practice unergative active and accusative active or passive sentences (see APPENDIX B).

Note that all three groups participated in a pair-wise oral interaction task. While the control and the implicit group spent the whole 90 minutes of treatment sessions on the oral interaction, the explicit group spent only 45 minutes on the oral interaction because the group spent the rest of the time on receiving metalinguistic explanations.

3.4. Tests

3.4.1. Grammaticality judgment test

In GJT tests, the participants were asked to judge whether or not a sentence is grammatically correct, considering the meaning of the sentence (See APPENDIX C). Errors in the items include ungrammatical use of the *happen*-type verbs in a passive form and unnatural use of active or passive forms with the *grow*-type verbs. Each answer was given 1 point if the choice of grammaticality was correct, and 0 point if incorrect. Three distinct tests containing similar lengths of sentences and difficulties of words were employed in the pretest and two posttests.

30 grammaticality judgment test items included 5 *happen*-type, 19 *grow*-type, and 6 distractor items (using accusative or unergative verbs e.g. *rent, cry*). Distractor items were included to check if learners' knowledge on passive structures using verbs other than unaccusative verbs did not deteriorate as a consequence of instruction. In addition, they prevent learners from forming a simplistic assumption about the test such as 'active forms are always correct.' Analyses on the distractor items showed that there were no significant differences among the three groups' scores on distractor items in all testing periods.

To check the reliability of 24 target items, Cronbach's alpha coefficient was calculated. Cronbach's alpha coefficient measures the reliability of psychometric tests by observing the variance of each component item in relation with the variance of the observed total test scores for the sample of persons. It indirectly indicates the degree to which a set of items measures a single unidimensional latent construct (Hatch & Lazaraton, 1991, p. 535). Typically, if Cronbach's

alpha is higher than .60 the internal consistency is considered marginally acceptable, higher than .70 is considered acceptable, and higher than .80 is considered good. The Cronbach's alphas of 24 target items of GJT tests in each time period had been .640 (pretest), .826 (immediate posttest), and .791 (delayed posttest)[5]. Yet, items with low or negative item-total correlation (lower than .05), which means that they possibly undermine internal consistency of the tests, were removed from the analyses. As a result, the number of items for the pretest became 19, the immediate posttest 22, and the delayed posttest 19. The Cronbach's alphas of adjusted items were .718 (pretest), .839 (immediate posttest), and .826 (delayed posttest), respectively. The table of correlation and Cronbach's alpha for each GJT item are presented in the APPENDIX E.

3.4.2. Elicited oral production

The participants were individually interviewed for the oral production tests. They were asked to answer the questions presented orally by forming a sentence using a verb presented on a card (See APPENDIX D). Questions consist of two sentences, the first sentence describing a certain incident (e.g. *Jack put ice on the stove.*) and the second sentence asking what happened after the incident (e.g. *What happened to the ice?*). Since the question obligates participants to answer the state or change of an object, it is natural for them to use unaccusative structure even though an agent (*Jack*) is available in the context. Thus, the discourse of each oral production item is designed to elicit unaccusative structures except for

[5] Cronbach's alpha is usually obtained in a pilot test to screen out items showing low correlations. Yet, since no pilot test was performed prior to the current study, the Cronbach's alphas had been calculated participants' data and an adjustment was made afterwards.

distractor items. Each answer was given 1 point if participants made a target-like active/passive choice, and 0 if otherwise. Errors other than the active/passive choice (e.g. incorrect irregular past participle, omission of articles) were disregarded in scoring.

15 elicited oral production items consist of 4 *happen*-type, 8 *grow*-type, and 3 distracter items. Analysis on the distractor items showed no significant difference among three groups in all testing periods. Cronbach's alphas were calculated to check the reliability of each oral production test. The Cronbach's alphas for the 12 target items had been .711 (pretest), .802 (immediate posttest), and .828 (delayed posttest) before adjustment. The number of items after screening out the items with low item-total correlation (lower than .05) were 10 (pretest), 11 (immediate posttest), and 12 (delayed posttest). Recalculated Cronbach's alphas were .769 (pretest), .818 (immediate posttest), and .828 (delayed posttest). The table of correlation and Cronbach's alpha for each oral production item are presented in the APPENDIX F.

3.5. Procedure

The participants first filled in a questionnaire regarding their biological information, length of residence in English speaking countries, the amount of weekly use of English, etc. Then, they were given a pretest in the order of a GJT followed by an oral production test. Five days after the pretest, they were assigned into four classes and participated in 30-minute treatment sessions for three consecutive days. An immediate posttest was conducted right after the last treatment. Then, they took a delayed posttest five days after the last treatment. An oral interview was also conducted to find out what they had learned or

experienced during the treatments. The general procedure of the experiment is summarized in Table 3.

Table 3. General Procedure

Week 1	Questionnaire + Pretest (GJT &Oral production test)
Week 2	Treatment 1, 2, 3 + Immediate Posttest (GJT &Oral production test)
Week 3	Delayed Posttest (GJT &Oral production test) + Interview

3.6. Analysis

SPSS (Statistical Package for the Social Sciences) program was used for descriptive and inferential statistics. Since the numbers of target items in the three testing periods were not identical, the total scores were converted into accuracy rates to make statistical comparisons. To address the first research question, 3 x 3 (Group x Time) mixed design analyses of variance (ANOVAs) of the GJT and oral production target items were performed. As follow up analyses, one-way repeated measure ANOVAs and Bonferroni post-hoc comparison tests were performed to check the differences between groups in each posttest period (at an alpha level of .05). To address the second and third research questions, accuracy rate of the GJT and oral production target items divided into the verb type conditions (*happen/grow*) and into taught/untaught conditions were statistically tested using mixed design ANOVAs. One-way repeated measure ANOVAs and Bonferroni post-hoc comparison tests further checked the differences between groups in each posttest period.

Chapter 4. Results

In the following sections, the results are reported in three parts to address three research questions: analysis of GJT and oral production in total, analysis of two types of verb, and analysis of taught/untaught conditions.

4.1. Effects on the GJTs and oral production tests

The descriptive statistics of each group's GJT and oral production are summarized in Table 4 and displayed in Figure 1 and 2. The number of items after screening out items with low reliability is indicated in the parenthesis.

Table 4. Mean Accuracy Ratesof the GJT and Oral Production

	GJT			Oral Production		
	Pretest (n=19)	**Posttest1 (n=22)**	**Posttest2 (n=19)**	**Pretest (n=10)**	**Posttest1 (n=11)**	**Posttest2 (n=12)**
Implicit	.65	.76	.82	.52	.81	.80
Explicit	.55	.82	.91	.48	.49	.54
Control	.56	58	.63	.40	.59	.46
Total	.59	.73	.79	.47	.63	.60

To check whether the differences in the three groups' pretests scores are statistically significant, one-way ANOVA was performed. No statistically significant differences were found among the three groups in the pretest scores of the GJT (F = .990, p > .05) and the pretest scores of the oral production (F = .505, p > .05).

In order to examine if the differences across these groups' GJT scores over time were statistically significant, a two-way mixed design ANOVA was performed on GJT accuracy rates. Table 5 summarizes the results of the analysis.

Table 5. ANOVA Source Table for GJT

Source	*df*	*SS*	*MS*	*F*	*p*
Between Groups					
Group	2	.492	.246	4.039	.030*
Errors	26	1.584	.061		
Within Groups					
Time	2	.598	.299	21.910	.000*
Time×Group	4	.232	.058	4.261	.005*
Errors	52	.709	.014		

*$p < .05$

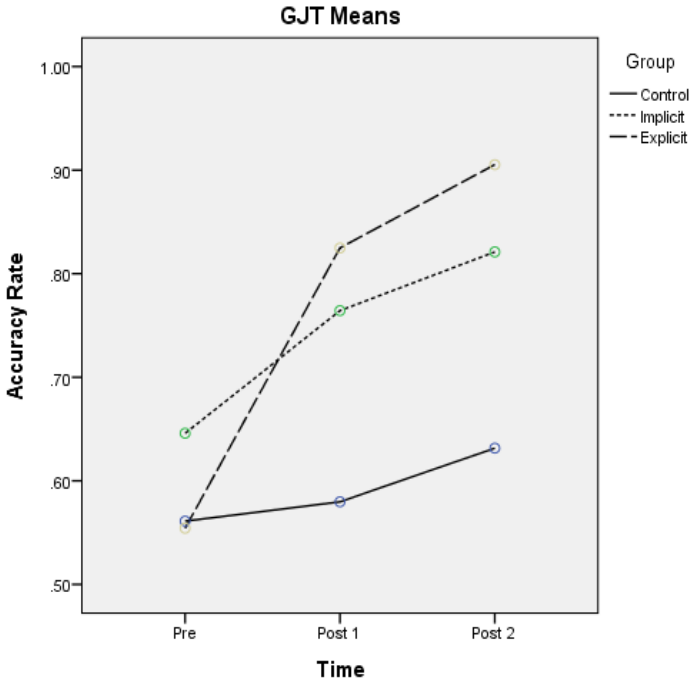


Figure 2.Three Groups' GJT Trends

As shown in the table, there was a significant Time x Group interaction (F = 4.261, p < .01). The main effects of Time (F = 21.910, p < .01) and Group (F = 4.039, p < .05) were also significant. From Figure 2, it can be inferred that the three groups' GJT accuracy developed over time differently, the explicit group surpassing the other two groups. The implicit and control group also showed some development over time.

Since there is no post-hoc analysis on a mixed design ANOVA that can isolate the differences between groups in each testing period, two separate one-way ANOVAs were performed for each posttest phase. The results from one-way ANOVAs showed significant between-group differences in both posttest 1 (F = 3.929, p < .05) and posttest 2 (F = 7.858, p < .01). Bonferroni post-hoc pair-wise comparisons were performed to isolate where the significant differences lay among the groups. The analyses on the GJT scores revealed that in posttest 1, the explicit group outperformed the control group (p < .05). There were no significant differences between the implicit and the control group or the implicit and the explicit group. In posttest 2, both the explicit (p < .01) and the implicit group (p < .05) performed significantly better than the control group. No significant difference was found between the implicit and the explicit group.

Similarly, to examine the impact of instruction on oral production, a two-way mixed design ANOVA was performed. Table 6 displays the results of the analysis. As shown in Table 6, the interaction of Time x Group was marginally significant (F = 2.544, p = .05). The main effects of Time (F = 7.856, p < .01) and Group (F = 4.006, p < .05) were significant respectively. From Figure 3, we can see that the implicit group outperformed the other groups for all testing periods showing a development over time. The other two groups did not show any noticeable

development in accuracy except for a minor fluctuation shown in the control group in the immediate posttest.

Table 6. ANOVA Source Table for Oral Production

Source	*df*	*SS*	*MS*	*F*	*p*
Between Groups					
Group	2	.941	.471	4.006	.030*
Errors	26	3.055	.118		
Within Groups					
Time	2	.438	.219	7.856	.001*
Time×Group	4	.283	.071	2.544	.050*
Errors	52	1.448	.028		

*$p < .05$

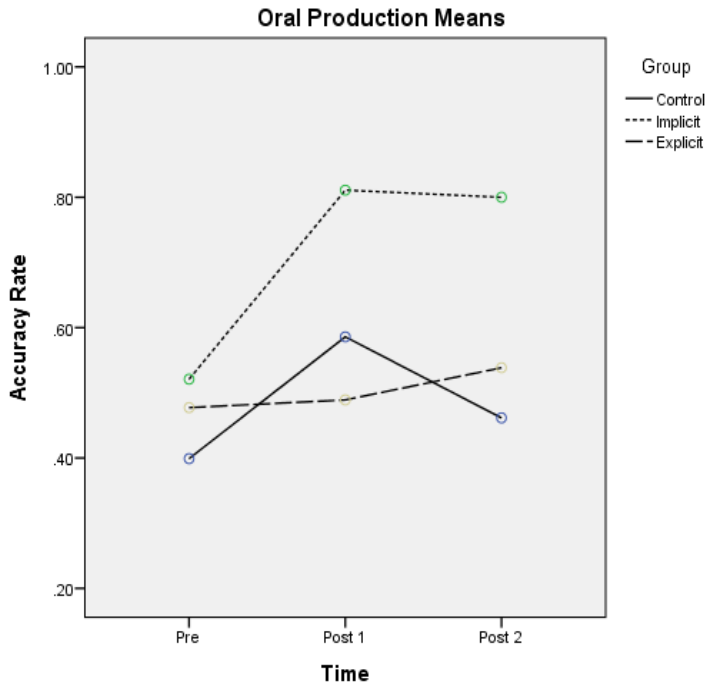


Figure 3.Three Groups' Oral Production Trends

One-way ANOVAs further revealed whether differences in each posttest period are significant. The differences were statistically significant in both posttest 1 ($F = 4.253$, $p < .05$) and posttest 2 ($F = 7.955$, $p < .01$). Bonferroni post-hoc pair-wise comparisons identified which group differed from the others. In posttest 1, the implicit group outperformed only the explicit group ($p < .05$), and no significant differences were found between the other groups. In posttest 2, the implicit group outperformed both the explicit group ($p < .05$) and the control group ($p < .01$). No significant difference was found between the explicit and control group.

Table 7. Post-hoc Comparisons of GJTs and Oral Production Tests

	Immediate Posttest	**Delayed Posttest**
GJT	*Explicit > Control	**Explicit > Control *Implicit > Control
Oral Production	*Implicit > Explicit	**Implicit > Control *Implicit > Explicit

*$p < .05$, **$p < .01$

To summarize the results, statistical analyses on the GJTs revealed that both the explicit and implicit instruction were effective in acquiring knowledge of unaccusatives. Although the impact of the explicit instruction was greater and immediate, the delayed impact of the implicit instruction was also observed. On the other hand, statistical analyses of oral production tests confirmed a superior impact of the implicit instruction over the explicit instruction on oral production. The explicit group did not demonstrate any benefit of instruction.

4.2. Effects on types of verb

This section reports whether there was a different effect of instructions on two types of verbs – *happen* and *grow*-type. The GJT and the oral production of the *happen* and *grow*-type verbs were analyzed separately. Mean accuracy rates for each verb type per group are summarized in Table 8. Figures 4 and 5 display three groups' trends with *happen* and *grow*-type verbs in the GJTs, and Figures 6 and 7 display the trends in the oral production tests.

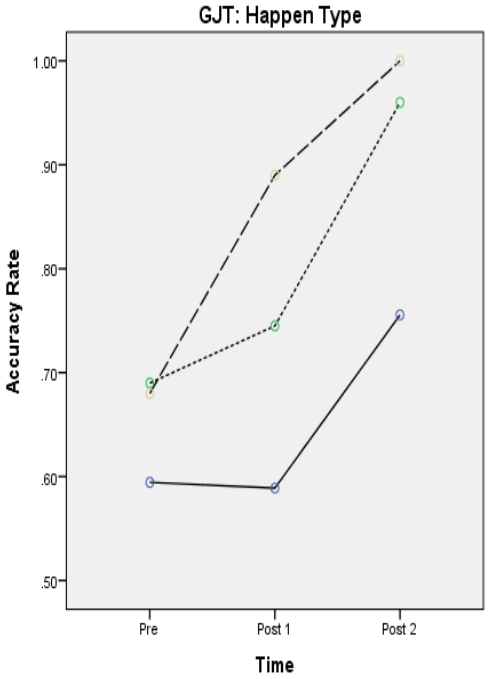
Table 8. Mean Accuracy Rates of *Happen*- and *Grow*-type Verbs

GJT						
	Pretest		**Posttest1**		**Posttest2**	
	happen	***grow***	***happen***	***grow***	***happen***	***grow***
Implicit	.69	.63	.75	.77	.96	.77
Explicit	.68	.52	.89	.81	1.00	.87
Control	.59	.55	.59	.58	.76	.59
Total	.66	.57	.75	.72	.91	.75
Oral Production						
	Pretest		**Posttest1**		**Posttest2**	
	happen	***grow***	***happen***	***grow***	***happen***	***grow***
Implicit	.68	.48	.83	.81	.95	.85
Explicit	.48	.41	.50	.48	.45	.61
Control	.44	.36	.61	.55	.61	.48
Total	.53	.42	.65	.61	.67	.65

Before analyses, one-way ANOVA on the pretests revealed no statistical differences among groups with both verb types. Then, two-way mixed design ANOVAs revealed how the accuracy of each group changed over time for each type of verbs. The F and p values for factors with p values lower than .05 are presented in Table 9.

Table 9. *F* and *p* values from ANOVAs on *Happen*- and *Grow*-type Verbs

GJT		
	happen	***grow***
Group	$F = 3.700$, $p = .039$	-
Time	$F = 12.372$, $p = .000$	$F = 18.234$, $p = .000$
Time x Group	-	$F = 4.880$, $p < .002$
Oral Production		
	happen	***grow***
Group	$F = 3.834$, $p = .035$	$F = 3.950$, $p = .032$
Time	-	$F = 12.514$, $p = .000$
Time x Group	-	-



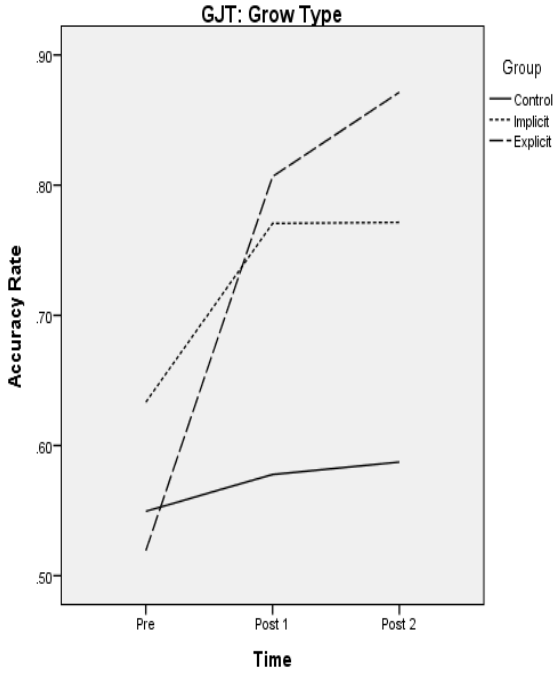
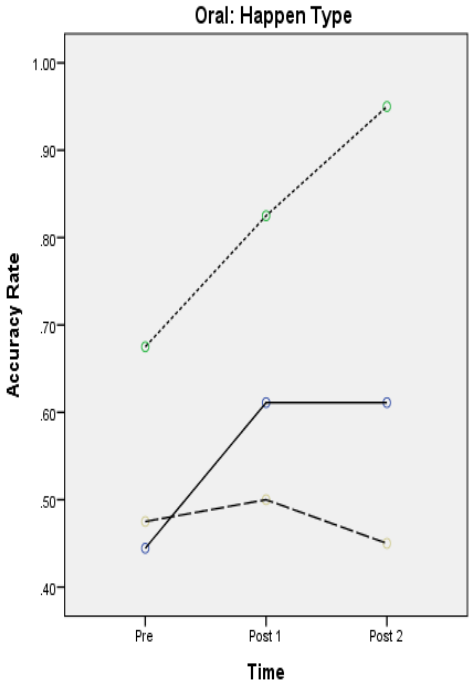


Figure 4. GJT Trends with the *Happen*-type **Figure 5. GJT Trends with the *Grow*-type**

In analyses of the GJT with the *happen*-type verbs, the main effects of Time and Group were found to be significant. As in Figure 4, all three groups showed an increase in accuracy over time. Yet, accuracy of the explicit group surpassed

the other groups, followed by the implicit group. With the *grow*-type verbs, the main effect of Time and the interaction effect of Time x Group were significant. As Figure 5 shows, the accuracy of the explicit group increased most. The implicit group also showed a clear upward trend, but the control group did not. Overall, accuracy of the *happen*-type verbs was higher than that of the *grow*-type verbs.



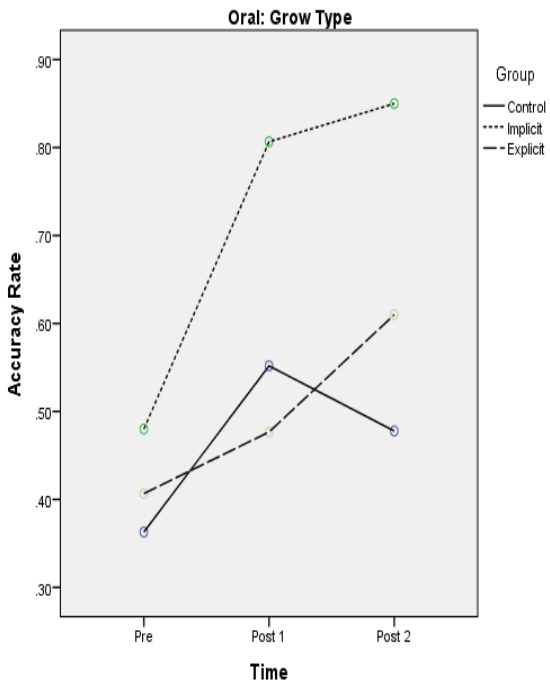


Figure 6. Oral Trends with the *Happen*-type **Figure 7. Oral Trends with the *Grow*-type**

In analyses of the oral production with the *happen*-type verbs, only the main effect of Group was found to be significant. As in Figure 6, the implicit group outperformed the other groups, while the explicit and control group showed no change or a minor increase. With the *grow*-type verbs, the main effects of Group and Time were both significant. As Figure 7 shows, the implicit group surpassed

the others in all testing periods. Yet, the accuracy of the explicit group showed some increase while that of the control group fluctuated. Again, overall accuracy of the *happen*-type verbs was higher than that of the *grow*-type verbs.

Table 10 displays the summary of post-hoc analyses of one-way ANOVAs in each posttest period. In the GJT with the *happen*-type, both treatment groups outperformed the control group. With the *grow*-type, the explicit group outperformed the control group. In the oral production with the *happen*-type verbs, the implicit group outperformed only the explicit group, while with the *grow*-type verbs, it outperformed both the explicit and control group.

Table10. Post-hoc Comparisons with *Happen* and *Grow*-type Verbs

	Immediate Posttest	**Delayed Posttest**
GJT: *happen*	-	**Explicit > Control *Implicit > Control
GJT: *grow*	*Explicit > Control	**Explicit > Control
Oral: *happen*	-	**Implicit > Explicit
Oral: *grow*	*Implicit > Explicit	**Implicit > Control *Implicit > Explicit

*$p < .05$, **$p < .01$

To sum up, while the general developmental patterns of two verb types shared similarities, some differences were observed. First, a significant impact of implicit instruction on accuracy of GJT was only observed with the *happen*-type verbs. Implicit instruction seemed to have more of a positive impact on developing the knowledge of the *happen*-type verbs than the *grow*-type verbs. Second, explicit instruction did not have a significant impact on oral production of both verb types. Especially, it did not seem to promote oral production of the

happen-type verbs at all, while it slightly promoted the oral production of the *grow*-type verbs.

4.3. Effects on transferability

In this section, the impact of instructions on trained and untrained verbs is compared. The GJT and the oral production of taught and untaught verbs were analyzed separately. Mean accuracy rates for each condition per group are summarized in Table 11. Figures 8 and 9 display the three groups' trends with taught and untaught verbs in the GJTs, and Figures 10 and 11 display the trends in the oral production tests.

Table 11. Mean Accuracy Rates for Taught/Untaught Verbs

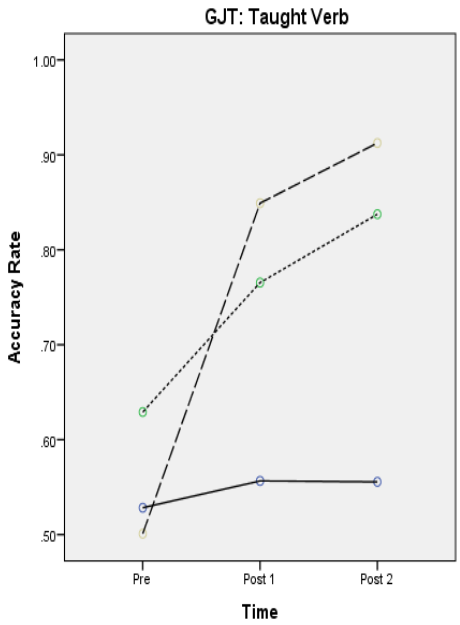
GJT						
	Pretest		**Posttest1**		**Posttest2**	
	taught	**untaught**	**taught**	**untaught**	**taught**	**untaught**
Implicit	.63	.66	.76	.76	.84	.81
Explicit	.50	.61	.85	.80	.91	.90
Control	.53	.59	.56	.60	.56	.69
Total	.55	.62	.73	.73	.84	.80
Oral Production						
	Pretest		**Posttest1**		**Posttest2**	
	taught	**untaught**	**taught**	**untaught**	**taught**	**untaught**
Implicit	.40	.66	.78	.84	.86	.92
Explicit	.43	.52	.43	.56	.59	.58
Control	.45	.44	.45	.73	.44	.67
Total	.78	.54	.56	.71	.64	.72

Since one-way ANOVA on the pretests revealed no statistical differences among groups with verb conditions, two-way mixed design ANOVAs were performed to analyze how the accuracy of each group changed over time for

each verb condition. Table 12 summarizes the *F* and *p* values for factors with *p* values lower than .05.

Table 12. *F* and *p* values from ANOVAs on Taught and Untaught Verbs

GJT		
	taught	**untaught**
Group	$F = 4.789$, $p = .017$	-
Time	$F = 18.460$, $p = .000$	$F = 9.488$, $p = .000$
Time x Group	$F = 5.090$, $p = .002$	-
Oral Production		
	taught	**untaught**
Group	$F = 4.266$, $p = .025$	$F = 3.673$, $p = .039$
Time	$F = 9.857$, $p = .000$	$F = 7.978$, $p = .001$
Time x Group	$F = 3.468$, $p = .014$	-



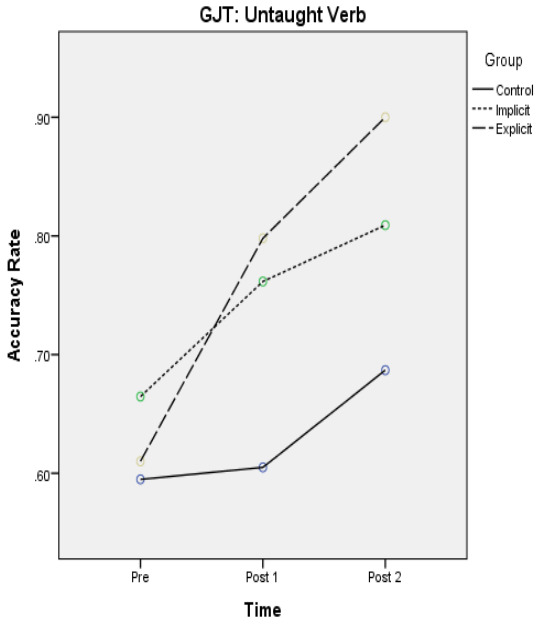
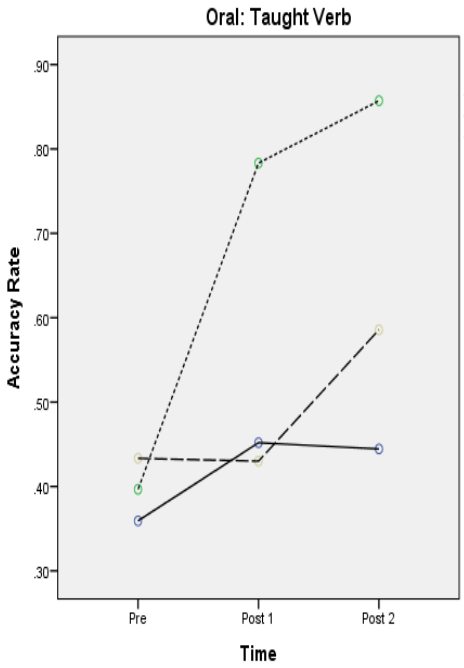


Figure 8. GJT Trends with Taught Verbs **Figure 9. GJT Trends with Untaught Verbs**

The main effects of Time, Group and Time x Group were all significant with taught verbs in the analysis of the GJT and oral production. In terms of the GJT accuracy, the explicit group showed the steepest growth, and the implicit group showed gradual development (Figure 8). The accuracy of oral production increased most in the implicit group. The other two groups showed only a minor increase (Figure 10).

With untaught verbs, only the main effect of Time was significant in the analysis of GJTs. As in Figure 9, all groups' accuracy increased over time, but the differences between groups were not distinctive. In the analysis of oral production tests, the main effects of Group and Time were significant. As Figure 11 shows, accuracy of the implicit group gradually increased while that of the other two groups fluctuated or remained steady.



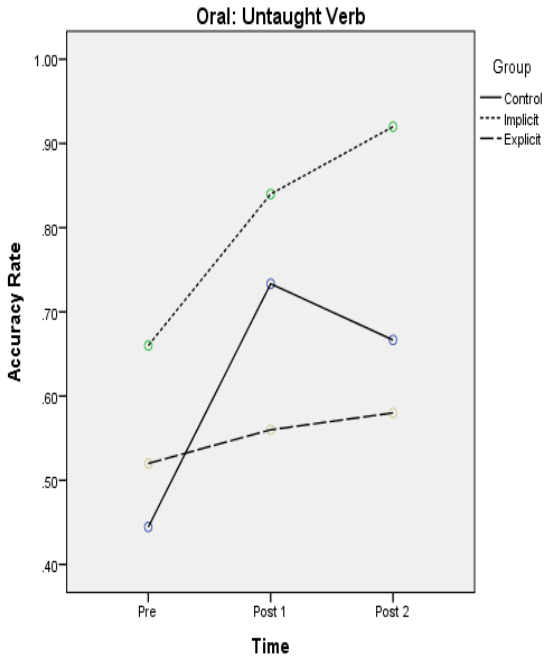


Figure 10.Oral Trends with Taught Verbs **Figure 11. Oral Trends with Untaught Verbs**

The post-hoc comparisons, as summarized in Table 13, further revealed the impact of instruction in each posttest period. In the GJT with taught verbs, both treatment groups outperformed the control group. Yet, with untaught verbs, no impact of instruction was observed. In the oral production, the implicit group outperformed the other groups with taught verbs. With untaught verbs, it only outperformed the explicit group.

Table 13. Post-hoc Comparisons with Taught and Untaught Verbs

	Immediate Posttest	**Delayed Posttest**
GJT: taught	*Explicit > Control	**Explicit > Control **Implicit > Control
GJT: untaught	-	-
Oral: taught	*Implicit > Explicit	**Implicit > Control *Implicit > Explicit
Oral: untaught	-	*Implicit >Explicit

* $p < .05$, ** $p < .01$

In short, transfer of knowledge to new verbs was only marginally observed in both GJTs and oral production tests. Especially in the GJTs, instruction did not seem to promote transfer of knowledge to new verbs. In oral production tests, implicit instruction was more effective than explicit instruction in triggering transfer to new verbs. Such a benefit, however, is not conclusive since no difference was found between the implicit and control group.

Chapter 5. Discussion

5.1. The impact of instruction on implicit and explicit knowledge

The results from the GJT analyses suggest that in acquisition of explicit knowledge, both implicit and explicit instructions are beneficial. There was no significant difference between the implicit and explicit instructions. This may seem rather contradictory to the previous findings using the same structure (Hwang, 1999; Kim, 2004) which did not confirm beneficial impact of implicit instruction from the GJT analyses. However, considering the fact that the instructional tasks used in this study were different from previous research, in that it used interaction tasks, such a difference can be explained. As noted earlier, both Hwang (1999) and Kim (2004) employed non-interactional tasks, and participants had a limited production chance. In the current study, learners in all groups participated in pair-wise interaction and had more production chances. As Long's (1996) revised interaction hypothesis suggests, input and feedback obtained during conversational interaction promote L2 development because interaction "connects input, internal learner capacities, particularly selective attention, and output in productive ways" (Long, 1996, pp. 451-452).

Yet, it is not clear whether interaction had a more positive impact on one of the treatment groups. The increase in accuracy rates for both the implicit and explicit group was relatively higher than that in the previous studies. In Kim (2004), for example, the accuracy of the GJT for the implicit group had risen from 60% to 70%, and for the explicit group from 66 % to 83%. In this study, the accuracy of the GJT for the implicit group had risen from 65% to 81 % in the

delayed posttest, and for the explicit group from 55% to 91%. Although direct comparisons cannot be made since other factors may have involved in making the differences, it will not be unreasonable to assume that learners in the explicit group also benefited from interaction when their relative increase in explicit knowledge is compared with the increase in the implicit group. The explicit group showed greater percentage increase than the implicit group did. Such an observation lines up with Ko's (2008) observation that a production task boosts effectiveness of both explicit and implicit instructions.

A question arises, then, how learners' explicit knowledge on unaccusatives was promoted under the implicit condition. There are two possible explanations. First, through repeated exposure to the target form during the interaction task, learners in the implicit group may have had chances to recognize the target form and made some abstract rules or generalization about it. In other words, they may have gone through explicit processing of the target form during implicit instruction. However, this explanation seems rather implausible since none of the participants in the implicit group could verbalize any metalinguistic knowledge about the target feature in the interview carried out after the delayed posttest. Five out of ten participants answered that they learned the usage of some verbs or passives, but none could verbalize the characteristics of verbs they learned.

A more plausible explanation is that learners in the implicit group may have formed verb-specific knowledge during implicit instruction and were able to apply that knowledge during the GJT. Although they had a partial and incomplete picture of English unaccusatives, their verb-specific judgments were accurate enough to be comparable with those of learners in the explicit group.

This explanation suggests that implicit learning can promote either explicit knowledge or implicit knowledge that can function as effectively as explicit knowledge.

The analyses on the oral production, on the other hand, revealed that only implicit instruction has a positive impact on acquisition of implicit knowledge. Since no previous research measured the development of implicit knowledge using English unaccusatives, the results of this study are not comparable to studies using the same target form. However, with studies using other structures, some beneficial impact of implicit instruction on production was observed. Murunoi (2000), for instance, confirmed a positive impact of implicit instruction on oral and written production of English articles in the immediate posttest. Contrary to this study, however, Murunoi (2000) also found a positive impact of explicit instruction on oral and written production. As examined earlier, Ko (2008) found a positive impact of both explicit and implicit instruction on written production of a subject-verb inversion after adverbial and pseudocleft of location, but the explicit condition was observed to have a greater impact.

Then, the reasons why learners under the explicit condition in this study did not gain any implicit knowledge need to be explained. One reason could be that the practicing time for the explicit group had been insufficient for learners to develop implicit knowledge. Compared to the learners in the implicit group, they spent only half the amount of time on interaction since the rest of the time was allotted to metalinguistic explanations. Although DeKeyser (2003) affirmed the possibility that explicit knowledge functions the same as implicit knowledge, the precondition for such transformation is automatization of explicit knowledge through long-term practice. If learners in the explicit group had spent more time

on practicing unaccusatives, some positive changes in implicit knowledge might have been observed.

Another reason could be that the production tests used in the previous studies did not really measure implicit knowledge, allowing the intervention of explicit knowledge. As noted in DeKeyser (2003), many studies are plagued with a problem of inappropriate measurement. Researchers often measured only "explicit knowledge under conditions that are more or less conducive to the retrieval of implicit and explicit knowledge, and then infer to what extent the learning itself may have been implicit or explicit" (DeKeyser, 2003, p. 320). Both Murunoi (2000) and Ko (2008) did not scrutinize how well their production test measured implicit knowledge since their purpose was not to separate implicit knowledge from explicit knowledge. This study, on the other hand, operationalized the elicited oral production test as a measure of implicit knowledge based on criteria suggested by Ellis (2005). In this regard, the measure of implicit knowledge used in this study may provide more accurate understandings about the impact of instruction.

5.2. The impact of instruction on *happen* and *grow*-type verbs

The analyses of GJT with the *happen* and the *grow*-type verbs revealed that the impact of instruction was both positive for the *happen*-type verbs, while only explicit instruction had a positive impact on the *grow*-type verbs. The results are consistent with those in Hwang (1999) and Kim (2004).

Then, a question is raised why positive impact of instruction on the GJT was only confirmed with the *happen*-type verb. In Hwang (1999), the researcher noted that such a finding suggests the possibility of preemption through positive input

only. That is, L2 learning is possible without the assistance of negative evidence. Such an account successfully explains why learning of the *happen*-type verb took place in the implicit group, but does not fully explain why the *grow*-type verb did not develop as much as the *happen*-type verb.

If we look more closely at the results, not only the learners in the implicit group, but learners in all groups systemically distinguished the *happen*-type verbs from the *grow*-type verbs. Accuracy of a GJT with the *happen*-type verbs was consistently higher than that of the *grow*-type verbs. Even the learners in the control group showed some improvement in the accuracy of a GJT with the *happen*-type verbs but not with the *grow*-type verbs. Higher accuracy with the *happen*-type verbs than with the *grow*-type verbs was also observed in Hwang (1999, 2006) and Kim (2004). Therefore, it seems reasonable to assume that the *grow*-type verbs require more complex explicit knowledge than the *happen*-type verbs.

In fact, learners can accurately judge grammaticality of the *happen*-type verbs relying on morphosyntactic knowledge that the *happen*-type verbs cannot be used in transitive form. To make accurate judgment on the *grow*-type verbs, however, metalinguistic analysis on discourse is required. Learners need to analyze the context and make judgment whether a passive or active sentence should be used. This is the case when complexity of form-function mapping is involved. In this respect, English unaccusative structures can be thought of as a mixture of features with different complexity. What the lower accuracy with the *grow*-type verbs suggests is that learners have more difficulties in acquiring a feature with complex form-function mapping than a feature with a complex form.

Then, an interpretation can be made that learners in the implicit group were able to obtain morphosyntactic knowledge from instruction, while they failed to form metalinguistic knowledge on form-function mapping. This implies that although learning can take place from positive evidence alone, fine tuning of explicit knowledge is more effective under the explicit condition.

In the oral production, on the other hand, the implicit group significantly outperformed the explicit group with both the *happen*-type and the *grow*-type verbs. Although learners in the implicit group had less sophisticated knowledge about the *grow*-type verbs, their implicit knowledge seemed to be better tuned through the implicit instruction. Implicit knowledge was promoted better under the implicit learning condition regardless of the type of complexity involved.

Interestingly, however, learners in the explicit group seemed to have more difficulties with production of the *happen*-type verbs than the *grow*-type verbs. The reason why such a tendency was observed is not clear. Perhaps it could be due to a lack of production chances with the *happen*-type verbs, since the frequency of the *happen*-type verbs during the practice was relatively lower than that of the *grow*-type verbs. However, with the same limited chances, learners in the implicit group successfully acquired implicit knowledge of the *happen*-type verbs. Further research is needed to confirm whether the same tendency is observed from explicit groups in other studies and to identify the exact reason.

5.3. The impact of instruction on transferability

In the analyses of the GJTs, both implicit and explicit instructions did not have a positive impact on transferability. This finding seems rather contradictory to the finding of Lee (2007) which stated that the rule-based instruction is more

effective than the instance-based instruction in helping learners transferring knowledge to new unaccusative verbs. Failure to show the impact of instruction on transferability in this study may originate from a bias in difficulty of verbs. Referring to the descriptive statistics, the accuracy of GJT with untrained verbs in the control group had been consistently higher than with trained verbs. In Chung (2009), the researcher noted that individual unaccusative verbs, regardless of verb type or L1 influence, seem to pose a different degree of learning difficulty to learners. By balancing difficulty of verbs in each group better, a more accurate account on the impact of instruction on transferability may be provided.

Due to the problem in balancing the difficulty of verbs, the beneficial impact of implicit instruction on transferability was only marginally observed. The implicit group outperformed the explicit group, but did not outperform the control group. Still, such results suggest that some transfer of implicit knowledge to new verbs occurred in the implicit group. That is, learners' implicit knowledge, accumulated through implicit processing of positive input, is not verb-specific knowledge, but generalizable and systemic knowledge about unaccusative verbs. Ferreira and Bock (2006) stated that implicit learning takes place as learners repeatedly make "connections between abstract relational features of meaning and the word sequences that tend to convey those features" (p. 1015). Repeated processing of English unaccusatives through interaction seems to have facilitated learners in the implicit group to form a generalization about English unaccusative, without formulating metalinguistic understanding about the structure.

In the explicit group, on the other hand, no evidence of learning of implicit knowledge was observed even with the taught verbs, let alone the untaught verbs.

A long-term observation is needed to determine whether explicit instruction cannot promote transfer of explicit or implicit knowledge of English unaccusatives at all.

Chapter 6. Conclusions

6.1. Methodological and theoretical implications

The narrow objective of the study was to compare the effects of implicit and explicit instructions on L2 learners' acquisition of English unaccusatives. The findings of the study suggest that implicit instruction is more effective in acquisition of English unaccusatives since it promotes both explicit and implicit knowledge. Explicit instruction assists development of more sophisticated explicit knowledge, but has no impact on implicit knowledge of English unaccusatives.

More positive impact of instruction on L2 development has not been observed prior to this study. The current study provides several methodological and theoretical implications in comparing the impact of instruction. First, measures of both implicit and explicit knowledge should be applied to account for relative impact of instruction. The results of implicit learning are observed better through a measure of implicit knowledge, such as the oral imitation test proposed in Ellis (2005), or the elicited oral production test used in this study. Measures of implicit and explicit knowledge should be well constructed based on concrete criteria and previous research. Sensitivity of each measure should be also made equal not to overestimate the development in one type of knowledge.

Second, Reber (1989, 1993) and Krashen's (1982) claim that learning of complex features better takes place through implicit learning was supported in this study. Superior impact of implicit instruction on English unaccusatives in this study suggests implicit learning, in general, is better than explicit learning

when the target domain is complex. Yet, deeper analysis on the *happen* and *grow*-type verbs showed that learners distinguish the *happen*-type and the *grow*-type verbs. This study hypothesized that this might be due to a difference in complexity of the *happen* and *grow*-type verbs. Learners seem to find the *happen*-type easier than the *grow*-type because they can make correct choices of form with the *happen*-type by referring to a morphosyntactic rule. The *grow*-type, on the other hand, requires analysis on discourse and remapping of form and function. If the hypothesis is correct, the fact that learners in the implicit group could not acquire explicit knowledge of the *grow*-type can be interpreted as a weakness of implicit learning. That is, while implicit learning facilitates the development of explicit knowledge of a simple feature, it may not promote explicit knowledge of a complex feature. In that regard, Reber and Krashen's claim might be only true for acquisition of implicit knowledge but not explicit knowledge. For developing explicit knowledge, explicit learning may be more effective than implicit learning as Robinson (1996) and Ko (2008) reported.

Third, interaction seems to play a great role in determining the effectiveness of instruction. The impact of both implicit and explicit instructions on explicit knowledge was observed to be larger than in the previous studies. On implicit knowledge, however, only the implicit instruction showed a beneficial impact. The reason why interaction did not promote the acquisition of implicit knowledge in the explicit group is puzzling. Further examination is needed to determine if preemptive metalinguistic explanations somehow hinder formation of implicit knowledge during interaction.

6.2. Pedagogic implications

There are two pedagogic implications in this study. First, interaction seems to promote L2 acquisition even when it is combined with FFIs in this study. Interaction tasks used in the study enabled learners to actively engage in processing of FFIs. In an English as a foreign language (EFL) environment, where learners have less exposure to positive input and fewer chances of production, interaction tasks can be especially helpful for learners since it provides positive input and production chances. Furthermore, the results of this study showed that implicit instruction combined with an interaction task is more effective than explicit instruction combined with an interaction task in the acquisition of English unaccusatives. Structural priming and implicit feedback enable learners to naturally go through implicit learning of structures during meaning-based interaction tasks. The confederated interlocutor technique used in this study nicely fits meaning-based L2 classrooms.

Secondly, in the acquisition of other complex structures, implicit instruction combined with an interaction task might have a beneficial impact. Especially when the difficulty of a feature stems from complex form-function mapping, as in English unaccusatives in this study, structural priming can facilitate the mapping of a message and syntactic features. English articles, for example, are similar to English unaccusatives in that discourse, not only morphosyntactic characteristics of an element, determines the choice of correct forms. This study suggests that such structures are also likely to be acquired most efficiently through implicit instruction combined with interaction tasks.

6.3. Limitations and further research

There was a methodological flaw in the measurement of this research. Although the measure of implicit knowledge is relatively well constructed in terms of appropriateness, sensitivity, and reliability, the scope of implicit knowledge it measures might have been too narrow. The elicited oral production test consists of target items that observe the correct usage of English unaccusative structures. They do not show whether learners use a passive construct correctly with transitive counterpart of unaccusative verbs in an obligatory context. There may be errors of undergenerating passive structure in the obligatory context. For this reason, the measure of implicit knowledge used in this study may fail to show the development of a wider scope of implicit knowledge that is relevant to English unaccusative structures. To reveal a more sophisticated development in learners' implicit knowledge with unaccusative verbs, an oral production test should contain items that elicit passive constructs using a transitive counterpart of unaccusative verbs. Such a measure might lead us to different conclusions about learners' implicit knowledge with the *grow*-type verbs.

In fact, how well the measures of the current research measure implicit and explicit knowledge separately should be further examined. Although Ellis's (2006) criteria for a measure of implicit and explicit knowledge are reasonable and clear, there is still a chance of learners' using explicit knowledge during the test measuring implicit knowledge. Further research on the efficacy of a psychometric test is needed to find out the best measures of implicit and explicit knowledge.

A theoretical issue of whether acquisition of explicit knowledge occurs under implicit conditions and implicit knowledge under explicit conditions is another

research topic that can be extended from this research. As far as the results of the study suggest, some degree of metalinguistic knowledge seems to develop through implicit learning. This is consistent with Ellis's (2009) argument that explicit knowledge is not necessarily a product of explicit learning. However, the possibility of explicit learning inducing procedural knowledge was not verified in this study. Researchers in the interface position of implicit and explicit knowledge have argued that explicitly taught learners are able to bridge the gap between implicit and explicit knowledge through practice (DeKeyser, 1995, 2003; Hulstijn, 1995, 1999; McLaughlin, 1978, 1990; Schmidt, 1990, 1994, 1995). Whether such interface occurs or not within Enlgish unaccusative structures should be examined in future studies.

Despite such limitations, the significance of the study is that it provides some insights into how different outcomes of learning can be depending on complexity of target structures, degree of interaction, and mechanisms of learning. By examining which instruction better facilitates acquisition of a complex feature, we can assist learners to overcome persistent structural errors and reach a deeper understanding on how second languages are acquired.

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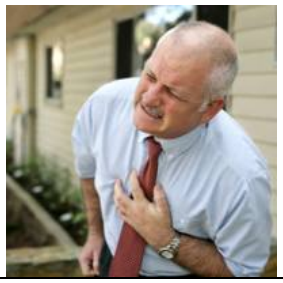
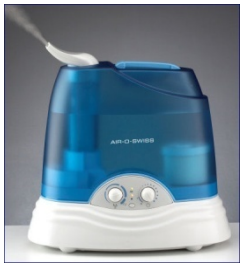
APPENDIX A: Target items in the interaction task

In my planet, if you let go of the helium-filled balloon, **balloon** **FLOAT** 	In my planet, if you pour water on oil, **water** **FLOAT** 
In my planet, when you are relaxed, **heart attack** **HAPPEN** 	In my planet, if you speed a car, **accidents** **HAPPEN** 
In my planet, if you eat less cholesterol, **blood pressure** **INCREASE** 	In my planet, when it is economic upturn, **sales** **INCREASE** 

APPENDIX B: Dummy items in the interaction task

In my planet, if there is a murder case, **crime scene** **INVESTIGATE** 	In my planet, if a baby is about to born, **pharmacist** **CALL** 
In my planet, when the air is humid, **humidifier** **TURN ON** 	In my planet, when you make a promise, **pinkie** **HOOK** 
In my planet, when you're getting married, **wedding vows** **EXCHANGE** 	In my planet, if you flunk a test, **trophy** **WIN** 

APPENDIX C: Agrammaticality judgment test

If you find the following sentences natural, mark O, otherwise, X.

1. _____ The tax increased every year in that country.
2. _____ The mountain collapsed due to the heavy rain.
3. _____ My eyes were closing as I read the book.
4. _____ The appointment totally forgot until now.
5. _____ The risk of cancer decreases if you stop smoking.
6. _____ Darkness was fallen quickly upon the village.
7. _____ The window broke into pieces.
8. _____ Death rate dramatically dropped last year.
9. _____ The temperature was approached zero in December.
10. _____ The ground freezes in the winter.
11. _____ The injury healed quickly with the treatment.
12. _____ The baby was cried when her mother left.
13. _____ The problem was emerged as we discuss more.
14. _____ The fire burned quietly in the fireplace.
15. _____ My surfboard was stolen at the beach.
16. _____ The tube expands when you pump air into it.
17. _____ My pants shrunk in the washing machine.
18. _____ The rumor was soon vanished among the students.
19. _____ Ed was given pocket money by his aunt.
20. _____ The car accident was happened because of the thick fog.
21. _____ His plan was rejected by the board.
22. _____ The candies melted in the hot weather.
23. _____ My passport expires in 3 months from now.
24. _____ The economy is finally recovering.
25. _____ The clothes dried quickly in the sun.
26. _____ The cherry sank into the cocktail.
27. _____ His English improved after he took the class.
28. _____ The monument was built by more than 1,000 people.
29. _____ The computers are died if you plug them out.
30. _____ The market opens early in the morning.

APPENDIX D: An oral production test

Listen and answer to the questions using the verb presented in the card.

※ Words in the parenthesis were written on the cards.

1. Jack put ice on the stove. What happens to the ice? (melt)
2. Maggie put strawberry jam in the bottle. What happened to the jam? (store)
3. Jack hit a bottle with a hammer. What happens to the bottle? (break)
4. Jack put a bottle of water in the freezer. What happens to the water? (freeze)
5. Maggie ordered some clothes on the internet. What happens to the clothes? (arrive)
6. Maggie hung the wet clothes under the sunlight. What happens to the clothes? (dry)
7. Jack took Maggie's shoes without asking. What happened to the shoes? (steal)
8. Jack hammered a block tower hard. What happens to the tower? (collapse)
9. Maggie sent a manuscript to the print house. What happens to the manuscript? (publish)
10. Maggie unlocked the door and pushed it hard. What happens to the door? (open)
11. Maggie pulled out the plug of the motor. What happens to the motor? (die)
12. Jack boiled water for a long time. What happens to the water? (evaporate)
13. Maggie did a trick with a coin. What happens to the coin? (disappear)
14. Jack gave water to the grass. What happens to the grass? (grow)
15. Jack shot the enemy's submarine with a missile. What happens to the submarine? (sink)

APPENDIX E: Correlation and Cronbach's alpha of GJT target items after elimination of unreliable items

	Pretest Cronbach's Alpha: .718		Posttest 1 Cronbach's Alpha: .839		Posttest 2 Cronbach's Alpha: .826	
	Corrected Item-total Correlation	Cronbach's Alpha If Item Deleted	Corrected Item-total Correlation	Cronbach's Alpha If Item Deleted	Corrected Item-total Correlation	Cronbach's Alpha If Item Deleted
T1	-	-	-	-	.440	.817
T2	-	-	.298	.837	.414	.817
T3	.245	.712	.437	.831	-	-
T4	.153	.719	.107	.843	.349	.823
T5	.148	.721	.421	.832	.370	.820
T6	.449	.690	-	-	.335	.822
T7	.232	.712	.371	.834	.223	.825
T8	-	-	.417	.832	.390	.820
T9	.311	.705	.448	.831	.047	.831
T10	.242	.712	.407	.833	.087	.830
T11	.505	.690	.107	.843	.472	.814
T12	.476	.691	.437	.831	-	-
T13	.030	.732	.565	.825	.411	.818
T14	.440	.692	.591	.824	.389	.819
T15	.259	.710	.251	.839	.413	.819
T16	.159	.717	.341	.835	-	-
T17	.392	.697	.449	.831	.370	.820
T18	.290	.707	.562	.826	-	-
T19	-	-	.325	.836	.589	.807
T20	.447	.692	.468	.830	.411	.818
T21	.300	.707	.466	.830	.598	.810
T22	.280	.708	.257	.838	.627	.805
T23	.225	.713	.471	.830	-	-
T24	-	-	.531	.827	.735	.799

* Note: Items with item-total correlation coefficient lower than .05 were eliminated.

APPENDIX F: Correlation and Cronbach's alpha of oral target items after elimination of unreliable items

	Pretest Cronbach's Alpha: .769		Posttest 1 Cronbach's Alpha: .818		Posttest 2 Cronbach's Alpha: .828	
	Corrected Item-total Correlation	Cronbach's Alpha If Item Deleted	Corrected Item-total Correlation	Cronbach's Alpha If Item Deleted	Corrected Item-total Correlation	Cronbach's Alpha If Item Deleted
T1	-	-	.403	.810	.537	.811
T2	.507	.739	.468	.805	.610	.804
T3	.225	.777	.675	.783	.356	.825
T4	.166	.784	.465	.805	.362	.825
T5	.536	.735	-	-	.617	.804
T6	.604	.726	.491	.803	.352	.827
T7	.568	.731	.264	.822	.503	.814
T8	.380	.756	.186	.831	.654	.801
T9	.302	.768	.464	.805	.596	.805
T10	.650	.725	.643	.786	.214	.835
T11	-	-	.575	.800	.286	.829
T12	.467	.745	.742	.775	.701	.796

* Note: Items with item-total correlation coefficient lower than .05 were eliminated.

국문초록

암시적 및 명시적 교수법이 영어 비대격 구문 습득에 미치는 영향: 과수동태화 오류의 교정

서울대학교 대학원
영어영문학과
문 수 현

제 2 언어 학습자들은 부자연스럽고 비문법적인 영어 비대격(unaccusative) 동사를 사용한 수동 구문을 받아들이고 자주 사용하는 반면, 비대격 구문을 부정하고 잘 사용하지 못하는 경향이 있다. 이 같은 경향은 과수동태화(overpassivization)라고 알려져 있다. 이 연구의 목적은 암시적(implicit) 방법과 명시적(explicit) 방법 중 어떤 형태중심 지도법(form-focused instruction)이 제 2 언어 학습자들의 영어 비대격 구문 습득을 보다 잘 돕는지를 밝히는 것이다. 암시적 지도와 명시적 지도의 영향력을 비교한 이전 연구들은 명시적 지도가 보다 효과적이라고 보고했다. 그러나 그 같은 결론은 암시적 지식의 적절한 척도를 참조하지 않고 내려진 것이다. 이 연구는 암시적 지식과 명시적 지식의 발달을 모두 적절한 척도를 사용하여 관찰한다. 또한, Reber(1989, 1993)와 Krashen(1982)이 주장하듯 복잡한 형태가 암시적 학습을 통해 보다 잘 습득될 수 있기 때문에, 목표 구조의 복잡성(complexity)이 세심하게 분석될 필요가 있다. 이 연구는 영어 비대격 구문이 복잡한 구조인 이유를 체계적으로 살펴본다. 끝으로, 상호작용 과업의 역할 또한 이 연구

에서 논의된다.

29명의 한국 대학생이 세 가지 환경(암시적, 명시적, 통제)에 배정되어 3일간 지도를 받았다. 암시적 집단에서는 구조적 초점(structural priming)과 암시적 피드백이 상호작용 과업 중에 제공되었다. 명시적 집단에서는 상위언어적(metalinguistic) 설명과 상호작용 과업이 수행되었다. 지도를 받기 전과 후에 학습자들의 명시적 지식과 암시적 지식은 문법성 판단 시험과 유도된 발화 (elicited oral production) 시험을 통해 측정되었다. 그 결과 명시적 지식의 습득에는 암시적 지도와 명시적 지도가 모두 도움을 주는 반면, 암시적 지식의 습득에는 암시적 지도만이 긍정적 영향을 미쳤다. 따라서 이 연구는 학습자의 영어 비대격 구문 습득을 돕는데 보다 효과적인 것은 암시적 지도라고 결론 내린다.

다른 한편, *happen* 유형 동사(타동사 형태를 취하지 않는 동사)와 *grow* 유형 동사(타동사 형태를 취하는 동사)에 관한 추가적 분석에서는 *grow* 유형에 대한 명시적 지식이 암시적 환경에서는 명시적 환경에서만큼 효과적으로 발달하지 않는 것이 드러났다. 이는 각 동사 유형의 복잡성의 차이에서 기인했을 가능성이 있다. *Happen* 유형 동사에는 형태통사론적(morphosyntactic) 지식만이 관여하는 반면, *grow* 유형 동사는 형태와 기능 간의 재설정(remapping)을 요구하기 때문에 학습자들에게 더 많은 어려움을 야기하는 것으로 보인다. 따라서 명시적 지식의 보다 섬세한 발달을 촉진하는 것은 명시적 지도이다. 전이성(transferability)에 관한 일련의 분석에서는 명시적 지도는 아무런 효과가 없는 반면, 암시적 지도는 학습자들이 다른 동사에 적용할 수 있는 추상적인 암시적 지식을 발달시키는 데 도움이 된 것이 드러났다. 그런 측면에서는 암시적 지도가 명시적 지도에 비해 강점을 갖는다.

이 연구가 갖는 주된 함의는 세 가지다. 첫째, Reber(1989, 1993)와 Krashen(1982)이 주장했듯, 암시적 지도는 복잡한 구조의 습득에 있어 명시적 지도보다 도움이 될 수 있다. 그러나 이 주장은 명시적 지식 보다는 암시적 지식에 대한 관찰에서 보다 잘 확인되었다. 둘째, 학습자들은 어느 정도의 상위언어적이고 추상적 지식을 암시적 학습을 통해 습득할 수 있다. 이 연구는 명시적 지식이 암시적 지도를 통해 습득될 수 있다는 주장을 지지하지만, 암시적 지식이 명시적 지도를 통해 습득되는 증거를 찾지는 못했다. 셋째, 상호작용은 암시적 지도와 명시적 지도의 효과를 모두 증진시키는 데 중요한 역할을 수행한다. Long(1996)의 상호작용 가설(interaction hypothesis)이 주장하듯 상호작용은 제 2 언어 습득을 북돋아주며, 이 연구에서와 같이 형태중심 지도와 결합되었을 때에도 마찬가지로 효과를 발휘한다. 이 같은 발견에 기반해, 이 연구는 교수법에 있어 상호작용 활동과 결합된 암시적 지도가 제 2 언어 학습자들의 영어 대격 구문 습득을 가장 잘 도와준다고 제안한다.

주요어: 영어 비대격 구문, 과수동태화, 암시적 지도, 명시적 지도, 암시적 학습, 명시적 학습

학 번: 2009-20018