L2 ACQUISITION OF TRANSLITIVITY ALTERNATIONS
AND OF THE ENTAILMENT RELATIONS FOR CAUSATIVES
BY KOREAN SPEAKERS OF ENGLISH AND ENGLISH SPEAKERS OF KOREAN

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ABSTRACT

Recent research has claimed that the presence and/or absence of a morphological marking of causative/inchoative verbs in the learners' respective native language results in difficulty in the acquisition of these verbs in languages such as English, Spanish, and Turkish (Montrul 1999; 2000; 2001). My dissertation investigates this issue in the speech of Korean learners of English (ESL) and English-speaking learners of Korean (KSL).

In English the causative and inchoative verbs used in the transitive and intransitive constructions, respectively, have the same morphological form. Unlike English, however, in Korean the alternation is marked by morphologically related rather than identical forms of the verb in the transitive and intransitive constructions. Based on the differences in morphological marking of the causative/inchoative verbs between English and Korean, it is expected that L2 learners would show difficulty identifying these verbs where the two languages differ in terms of marking them.

In the study at hand, however, a pattern-based transfer account was put forward to explain the ESL learners' performance because a class-based transfer effect involving morphological properties proposed by Montrul (2001b) was not readily observed. In addition, the notion of a prototypical transitive event was proposed to account for the KSL learners' performance because they did not appear to have transferred a general pattern from their L1 in identifying alternating unaccusative verbs in Korean.

Results concerning another experiment, which investigated the L2 acquisition of entailment relations associated with lexical/morphological and syntactic causatives show
that both ESL and KSL learners seem to have transferred the entailment relations from their L1 in identifying these causatives in the L2.

The reason that the findings in this study were different from Montrul's might lie in the fact that the learners who participated in this study might not be "true" beginner-level learners. My dissertation could contribute to determining which linguistic areas are more likely to transfer; for example, the domain of semantics (which includes entailment relations) seems to be one of the linguistic areas which is more prone to transfer from the L1 to the interlanguage grammar.
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Chapter 1
Introduction

This dissertation has two parts: the first part investigates the acquisition of different verb classes and transitivity alternations in Korean and English by adult second-language (L2) learners. The second part examines the acquisition of a lexical/morphological and syntactic causatives in terms of their semantic and/or syntactic differences in the target language. Specifically, it investigates whether L2 learners rely on knowledge of the semantic characteristics specific to lexical/morphological and syntactic causatives in their native language in identifying those causatives in the target language. This chapter introduces the subjects of the investigation at hand, i.e., transitivity alternations in English and Korean, as well as the entailment relations for causatives in both languages. Each subject is presented in a separate section, and the last section ends this chapter with an overview of the organization of the dissertation.

1.1. Transitivity Alternations

The transitivity alternation on which this dissertation focuses involves the causative/inchoative alternation, as shown below:

(1) a. John broke the vase. (causative variant)
    b. The vase broke. (inchoative variant)

The examples above show that the verb *break* can appear in both transitive and intransitive constructions in English. In addition, the same verb form (i.e., an underived verb) is used in both of these constructions (an example of a "labile" alternation). Verbs that participate in the causative/inchoative alternation are to a great extent the same in
different languages. Thus, change of state verbs such as break, open, melt, roll, etc.,
allow alternation in transitivity in English as well as in Korean. Compared to English, in
which an underived verb appears in both transitive and intransitive constructions, Korean
has two different patterns, i.e., anticausative and causative, in which different verb forms
are used in each of these constructions. Consider the following examples:

**Anticausative Pattern**

   -nom vase-acc break-past-dec
   'John broke the vase.'

   b. hwapyeng-i kkay-ci-ess-ta.
   vase-nom break-incho-past-dec
   'The vase broke.'

**Causative Pattern**

(3) a. Mary-ka elum-ul nok-[i]-ess-ta.
   -nom ice-acc melt-caus-past-dec
   'Mary melted the ice.'

   b. elum-i nok-ass-ta.
   ice-nom melt-past-dec
   'The ice melted.'

In the anticausative pattern in Korean a non-derived verb appears in the transitive
construction, while a derived verb consisting of a bare verb and an inchoative morpheme
occurs in the intransitive construction. In the causative pattern, on the other hand, a
derived verb consisting of a bare verb and a causative morpheme appears in the transitive
construction, while a non-derived verb occurs in the intransitive construction.

Hence, with regard to unaccusative verbs, on the one hand, Korean and English
are similar because the same kind of verbs (i.e., change of state verbs) participate in the
causative/inchoative alternation in both languages. The two languages differ, however, in
terms of how they mark unaccusative verbs; in English, a non-derived verb is used in both transitive and intransitive constructions. In Korean, on the other hand, different verb forms are used depending on the pattern to which an unaccusative verb belongs. For example, in the anticausative pattern to which verbs like \textit{kkayta} 'break', \textit{yelta} 'open', \textit{tatta} 'close', etc., belong, the verb occurring in the transitive construction is underived, whereas a derived verb appears in the causative pattern to which verbs like \textit{nokita} 'melt', \textit{ellita} 'freeze', \textit{kwullita} 'roll', etc., belong. Moreover, the verb occurring in the intransitive form is derived in the anticausative pattern, whereas a non-derived verb appears in the same form in the causative pattern.

This dissertation investigates whether L2 learners transfer morphological characteristics used to encode unaccusative verbs in the native language to the target language. The results obtained from this study will have implications for the question of whether the linguistic area of morphology is prone to transfer.

Another focus of my investigation involves unergative verbs, which usually disallow alternations in transitivity in English. For example, they cannot occur as a lexical causative, whereas they can in a syntactic causative, as shown below:

(4) a. The girl cried.
    b. *Tom cried the girl. (cf. Tom made the girl cry.)

In Korean, on the other hand, unergative verbs like \textit{wulta} 'cry', \textit{wusta} 'laugh', \textit{cata} 'sleep', etc., can alternate in transitivity although these verbs require a causative morpheme in the transitive construction:

(5) a. aki-ka wul-ess-ta.
    baby-nom cry-past-dec
'\textit{The baby cried.'}
Hence, with regard to unergative verbs, Korean and English differ because, unlike in English, in Korean some unergative verbs allow alternations in transitivity, albeit with the help of a causative morpheme used in the transitive construction. This dissertation explores whether L2 learners can detect language-specific properties regarding unergative verbs in the target language in terms of the (im)possibility of transitivity alternations. More specifically, the question is whether Korean learners of English know that unergative verbs in English generally disallow transitivity alternations. As for English-speaking learners of Korean, on the other hand, the question focuses on whether they know that unergative verbs like wulta 'cry', wusta 'laugh', cata 'sleep', etc., in Korean can alternate in transitivity.

1.2. Entailment Relations for Causatives

The objective of the second part of my dissertation is to examine the acquisition of causative constructions by L2 learners. English and Korean each have two different kinds of causative constructions, i.e., a lexical/morphological and a syntactic causative, as shown below ((6) for English and (7) for Korean):

(6) a. John melted the ice. (lexical causative)
    b. John made the ice melt. (syntactic causative)

    -nom ice-acc melt-caus-past-dec
   'John melted the ice.'
b. John-i elum-ul nok-key ha-yess-ta. (syntactic causative)
   -nom ice-acc melt-comp do-past-dec
   'John made the ice melt.'

It is commonly believed that different causative constructions are associated with a different type of meaning. For example, a meaning of direct causation is involved in a lexical/morphological causative, while a meaning of indirect causation is associated with a syntactic causative.

Aside from the fact that there are two different types of causatives both in Korean and English and a different kind of meaning is associated with each type of causatives, English causatives differ from Korean counterparts in terms of entailment relations. For example, in English both lexical and syntactic causatives obey a structural constraint. Specifically, these causatives require that the caused event occur; thus, it is impossible to negate the caused event in these causatives (e.g., *John melted the ice, but it didn't melt or *John made the ice melt, but it didn't melt). On the other hand, in Korean both morphological and syntactic causatives lack a structural constraint. For example, these causatives do not require that the caused event occur; thus, it is possible to negate the caused event in these causatives.

This dissertation examines whether L2 learners know the entailment relations associated with lexical/morphological and syntactic causatives in the target language. Specifically, the question revolves around whether L2 learners transfer the entailment relation associated with a lexical/morphological and syntactic causative from their L1 to the L2. The results obtained from this study will have implications as to whether the linguistic area of semantics (the entailment relations specifically) is susceptible to transfer.
In order to explore two different objectives in this dissertation, i.e., to investigate transitivity alternations, as well as the entailment relations for causatives, two experiments are carried out. Two different L2 groups—Korean learners of English (ESL learners) and English-speaking learners of Korean (KSL learners)—participated in these experiments. The following section illustrates how this dissertation is organized.

1.3. Organization of the Dissertation

The remainder of the dissertation is organized as follows: Chapter 2 discusses issues involving verb learning, and different verb classes and transitivity alternations. Chapter 3 presents different verb classes and transitivity alternations in English and Korean. Chapter 4 reviews the literature on the acquisition of the causative/inchoative alternation in English and Korean by first- and second-language learners. Further, experiments carried out to investigate the acquisition of this alternation by L2 learners are presented in chapters 5 (ESL study) and 6 (KSL study), with subsections on research questions, hypotheses, experiment design, results, and a discussion. Chapter 7 deals with the second objective of this dissertation, i.e., the acquisition of the lexical/morphological and syntactic causatives by L2 learners. The first part of this chapter covers the background research on the issue with which I am concerned, and an experiment on Korean learners of English, with subsections on hypotheses, research questions, experiment design, results, and a discussion. The KSL study is reported in the second part of chapter 7. Chapter 8 ends this dissertation with concluding remarks and suggestions for future research.
Chapter 2
Different Verb Classes andTransitivity Alternations

This chapter presents issues related to the first focus of this dissertation, i.e., transitivity alternations. The first section discusses how verb learning differs from noun learning, i.e., what is involved in learning verbs. The issue of the division of intransitive verbs into two different categories—unergative and unaccusative—is dealt with in the second section. The third section presents verb classes which allow (or disallow) the causative/inchoative alternation.

2.1. Verb Learning

It is commonly assumed that children have little difficulty learning nouns as opposed to learning verbs in their early vocabulary acquisition. The relative effortlessness in learning nouns by children has been explained based on semantic considerations, as cited in O'Grady (1997:25), i.e., the referents of nouns usually have perceptual correlates that are easily identifiable and are therefore more accessible to children than those of verbs.

Verb learning, on the other hand, is believed to be effortful because it involves more than learning the meaning of the verb, which by itself could be complex. For example, as stated in Montrul (2001c:52), aside from learning an idiosyncratic meaning of the verb, the learners' task also involves learning structural aspects of meaning regarding the event type and the number of participants in the events (arguments).
aspect of verb meaning is shared by some verbs, in that *speak* and *sing* are activities with one agentive participant, whereas *disappear* and *leave* are achievements with one nonagentive participant. In addition, there are mapping rules that link arguments to syntactic positions so that they are realized as subjects or objects. The mapping of arguments onto syntactic positions is done with the help of semantic and aspectual notions such as immediate cause, external cause, affectedness, telicity, and change of state or location.

Lexical entries have both semantic and syntactic information. According to Jackendoff (1990) and Pinker (1989), the meaning of a lexical item can be broken down into semantic primitives, such as THING, EVENT, STATE, PATH, PLACE, PROPERTY, and MANNER, which are universal. These primitives can be combined by various functions such as ACT, GO, CAUSE, BE, HAVE, etc., and they can be combined into words differently in different languages. These differences have syntactic consequences, and specifically in an L2 context, they have implications for interlanguage grammars (White 2003).

Moreover, the lexical entries of certain categories, say a verb, encode information about argument structure, that is, about the constituents which enter into a relationship with it. Verbs commonly take one (*Mary laughed*), two (*John hit Tom*) or three arguments (*Mary gave John a book*). The arguments of a verb are usually, but not necessarily, obligatory (*John killed the man; *John killed, but Mary ate an apple; Mary ate*). Arguments of verbs are often referred to with regard to their thematic roles, including agent, theme, and goal. Thus, the lexical entry of a verb includes information
about the number of arguments it takes, which arguments are obligatory, which argument
is the external argument, and so on. It also includes subcategorization information about
the syntactic categories by which arguments are typically realized. Consider the
following example for the lexical entry of the verb *put* (White 2003):

(1) put [+V]
LCS: x CAUSE [y BECOME AT z]
argument structure: x, y, z
(subagent, theme, location)
subcategorization: _ NP PP

As shown in (1), the lexical entry of the verb *put* has information about the number of
obligatory arguments (i.e., three), which are referred to with regard to their thematic roles.
The external argument (the agent) of the verb *put* is represented by underlining, while two
internal arguments, theme and location, are shown too. The lexical entry also includes
subcategorization information about the syntactic categories by which arguments are
realized. It has information about a lexical conceptual structure (LCS) as well, representing
the fact that this verb means that someone causes something to end up at a specific location.

2.2. Classification of Intransitive Verbs

Intransitive verbs are commonly categorized into two different groups, i.e.,
unergative and unaccusative verbs. There are several approaches to this distinction. For
example, linguists favoring a semantic approach maintain that these two classes of
intransitive verbs can be differentiated on semantic grounds and therefore there is no
need to attribute different syntactic representations to the verbs they contain. For
example, Pinker (1989) argues that if the different linguistic behaviors of the unergative and unaccusative verbs can be derived directly from an argument's status as theme in a structure lacking an agent, versus agent in a structure lacking a theme, no difference in a purely syntactic representation is needed. Thus, the criteria that delineate argument structure alternations should be stated in lexicosemantic structure, not in argument structure itself.

In the same vein, Grimshaw (1987) points out that because not all of the reflexes of the unaccusative/unergative distinction coincide in every language, each of the syntactic differences may be caused by different properties of the various verbs. It is important to note, as indicated by Levin and Rappaport Hovav (1995), that on the semantic approach unaccusativity is not a unified phenomenon, and a single verb can be categorized as unaccusative according to one diagnostic and as unergative according to another. In addition, Sorace (1995) states that from a semantic point of view, the argument of unergative verbs typically presents agentive properties, such as protagonist control and intentionality (e.g., run, walk, sleep, cry, dance, etc.), whereas the argument of unaccusative verbs commonly displays the characteristics of an entity affected by an unintentional and/or uncontrolled change of state or location (e.g., bounce, slide, melt, open, etc.).

According to Levin and Rappaport Hovav (1995:2), a syntactic approach that explains two different types of intransitive verbs based on different grammatical representations was originally formulated by Perlmutter (1978), and later adopted by
Burzio (1986), who argued that unergative and unaccusative verbs are associated with a different underlying syntactic structure, known as the Unaccusative Hypothesis:

(2) a. Unergative verb: NP [VP V]
   b. Unaccusative verb: ____ [VP V NP]

   In the same vein, in the Government and Binding approach, an unaccusative verb is defined as one that is unable to assign structural Case to its object. Working within this approach, Burzio (1986), for instance, noted a correlation between the ability of a verb to take an external argument and its ability to assign structural Case. He states that an unaccusative verb is one that does not take an external argument, i.e., is unable to assign a θ-role to its subject, known as Burzio's generalization (Haegeman 1994: 360).

   Linguists favoring a syntactic approach claim that the classification of verbs as unaccusative or unergative cannot be completely determined semantically. Specifically, they claim that there is no single semantic property common to all unaccusative verbs selected by all diagnostics in all languages (Levin and Rappaport Hovav 1995). They further argue that the semantic model is problematic because verbs with similar meanings in and across languages may be classified differently with respect to unaccusativity. Thus, the verb *die* is classified as an unaccusative verb in Italian, but as an unergative verb in Choctaw. Another problem is that individual verbs can be classified as both unaccusative and unergative by the same diagnostic. Hence, in Italian certain intransitive verbs can occur both with the auxiliary *avere* 'have' and the auxiliary *essere* 'be.'

(3) a. Mario ha continuato. (**è**)  
   Mario has continued is  
   'Mario continued.'
b. Il dibattito è continuato. (*ha)
the debate is continued has
'The debate continued.'

On the syntactic approach, all that unaccusative verbs have in common is a particular syntactic configuration. According to this approach, unaccusative and passive verbs share the same D-structure syntactic configuration. Indeed, there are syntactic and morphological phenomena that class unaccusative verbs and passive verbs together, as shown in Levin and Rappaport Hovav (1995). For instance, in English, resultative phrases can be predicated of the S-structure subjects of passive and unaccusative verbs but not of those of unergative and transitive verbs. Another example showing the same behavior of unaccusative verbs and passive verbs involves prenominal perfect/passive participles which modify the S-structure subjects of passives (e.g., a badly written letter) and unaccusatives (e.g., a recently appeared book) but not those of unergatives (e.g., *a hard-worked lawyer) and transitives (e.g., *a much-painted artist).

In contrast, -er nominals appear with the S-structure subjects of unergatives (e.g., runner, worker, player, singer, speaker, dreamer, etc.) and transitives (e.g., painter, writer, builder, etc.), but not with those of unaccusatives (e.g., *arriver, *disappearer, *dier, *escaper, etc.) and passives. The existence of such phenomena provides strong support for the syntactic approach, since, by hypothesis, unaccusative verbs and passive verbs appear in the same syntactic configurations, and it is difficult to find a semantic property shared by all passive and unaccusative verbs, which is also pointed out by Burzio (1986).
Grammatical differences between unergative and unaccusative verbs are also found in languages other than English. For example, in German only unergative verbs allow impersonal passivization while unaccusative verbs lack this feature (e.g., *Es wurde hier von jungen Leuten viel getanzt 'It was danced here a lot by young people' vs. *Es wurde in Berlin von jungen Leuten geblieben 'It was remained in Berlin by young people'). Another grammatical difference between these two different verbs involves auxiliary selection in German: the unaccusative verb *ankommen 'arrive' requires the auxiliary *sein 'to be', whereas the unergative verb *anrufen 'call' needs the auxiliary *haben 'to have'.

Different auxiliary use for unergative and unaccusative verbs can also be found in Italian: unaccusative verbs take essere 'to be' as in Giovanni è arrivato 'Giovanni is arrived', whereas unergative verbs take avere 'to have' as in Giovanni ha telefonato 'Giovanni has telephoned.' Based on the examples showing grammatical differences between unergative and unaccusative verbs in various languages, linguists attempted to capture these differences in some grammatical representation (Pinker 1989: 87).

Unlike the semantic approach, the syntactic approach takes unaccusativity to be a unified phenomenon: all unaccusative verbs, no matter what their semantic class, share certain syntactic properties, i.e., the selection of a direct internal argument, the lack of an external argument, and the inability to assign accusative Case (Levin and Lappaport Hovav 1995). According to this approach, not all unaccusative verbs are expected to give
positive results with respect to all unaccusative diagnostics, because an unaccusative classification is often a necessary, but not a sufficient condition for a verb to test positively with respect to certain unaccusative diagnostics. Despite these differences, all unaccusative verbs share a particular set of syntactic properties.

In addition to a semantic and/or syntactic account to explain two different types of intransitive verbs, there is another account currently available, i.e., an account based on aspect. For example, as cited in Sorace (1995), two different intransitive verb classes, unergative and unaccusative, are differentiated in aspectual terms: unergative verbs tend to refer to atelic events or activities, in terms of the Vendler/Dowty classification. Unaccusative verbs mostly denote a telic event (i.e., one with a specified endpoint or resulting state), on the other hand.

Sorace (1995) further claims that the apparent inconsistency exhibited by most languages has been one of the principal arguments against a definition of unaccusativity in purely structural terms, the assumption being that if unaccusativity derives from the particular syntactic property of certain verbs having their argument in object position, then all unaccusative verbs should satisfy all diagnostics in the same way. According to her, explanations for unaccusativity in the literature are divided between those rejecting a syntactic characterization of unaccusativity (e.g., van Valin 1990; Seibert 1993) and those maintaining the validity of the Unaccusative Hypothesis but attempting to identify lexical or semantic constraints on its implementation (e.g., Levin and Rappaport 1989).
Levin and Rappaport Hovav (1995), for example, criticize both the syntactic and semantic approaches to unaccusativity. The semantic approach is problematic because, although it assumes that unaccusativity is semantically determined, it denies that it is syntactically encoded. The syntactic approach is also problematic, insofar as it claims that there is no single semantic property common to all unaccusative verbs selected by all diagnostics in all languages. According to Levin and Rappaport Hovav, the hypothesis that the classification of verbs as unaccusative or unergative is predictable on the basis of meaning in no way implies that all unaccusative verbs or all unergative verbs should represent a unified semantic class. Thus, the fact that the verb classes can be given a semantic characterization does not preclude the attribution of common syntactic properties to all unaccusative verbs. Furthermore, it is also possible that the verbs selected by various diagnostics can receive a proper semantic characterization. Hence, incorporating both syntactic and semantic approaches, Levin and Rappaport Hovav argue that "unaccusativity is syntactically represented but semantically determined" (1989: 316).

2.3. Different Verb Classes and Transitivity Alternations

2.3.1. The Causative/Inchoative Alternation

The correlation between a verb's ability to participate in the causative/inchoative alternation and its status as a certain kind of intransitive verb has been used as an unaccusative diagnostic (Burzio 1986; Rosen 1981). For example, many of the verbs
regarded as prototypical unaccusatives, e.g., verbs of change of state like *break, dry, melt, close, open*, etc., in English as well as their counterparts in other languages participate in this alternation. In fact, participation in this alternation is considered to be the hallmark of a verb of change of state.

Haspelmath (1993) defines a causative/inchoative verb pair as a pair of verbs which express the same basic situation and differ only in that the causative verb meaning includes an agent participant who causes the situation, whereas the inchoative verb meaning excludes a causing agent and presents the situation as occurring spontaneously. The phenomenon of the causative/inchoative alternation is illustrated in the following English examples (this alternation is also known by a variety of other names, including "anticausative" and "ergative"):  

(4) a. The ice melted. (inchoative)  
   b. Mary melted the ice. (causative)

According to Haspelmath (1993), the inchoative member of a causative/inchoative verb pair is semantically similar to the passive of the causative (e.g., *the ice was melted*), but the major difference between these two is that, while the situation in the passive form is understood as one in which an agent is implied although it is not expressed, the situation in the inchoative form is conceived of as occurring without an agent, spontaneously.

The examples in (4) show that verbs that participate in the causative/inchoative alternation occur both in transitive and intransitive constructions. According to Levin & Rappaport Hovav (1995), the semantic relationship between the transitive and intransitive constructions is generally attributed to the fact that the subject of the intransitive construction and the object of the transitive construction bear the same semantic role. In
fact, this sharing of a semantic role is used to argue that the verb in the intransitive construction is unaccusative. This means that the subject in this construction is a deep structure object.

It should be noted, however, that not all unaccusative verbs can participate in the alternation; for example, unaccusative verbs like *come, go, appear, disappear, etc., cannot alternate in transitivity. Further, verbs treated as prototypical unergatives like *laugh, sing, speak, etc., usually cannot alternate in transitivity.

(5) a. Mary came.
   b. *John came Mary. (cf. John made Mary come.)

(6) a. Tom laughed.
   b. *Susan laughed Tom. (cf. Susan made Tom laugh.)

Levin & Rappaport Hovav (1995) posit the following lexical semantic representations for unaccusative verbs that participate in the causative/inchoative alternation (alternating unaccusatives) as in (7), and unaccusative and unergative verbs that do not participate in the alternation (nonalternating unaccusative and unergative verbs) as in (8) and (9), respectively:

(7) break: [[x DO-SOMETHING] CAUSE [y BECOME BROKEN]]
(8) appear: [APPEAR x]
(9) laugh: [x LAUGH]

Verbs like break in both the transitive and intransitive constructions are considered to be dyadic, and are assigned a complex lexical semantic representation involving the predicate CAUSE; it represents the meaning of such verbs as involving two subevents, each an argument of CAUSE. The lexical semantic representations posited for
nonalternating unaccusative and unergative verbs, e.g., *appear* and *laugh*, respectively, do not involve the predicate CAUSE; their representations have only one subevent, and they are taken to be basically monadic. According to Levin & Rappaport Hovav (1995), the lack of a causative variant for such verbs is a reflection of the fact that these verbs do not have the predicate CAUSE and the accompanying causing subevent in their lexical semantic representation.

In terms of the semantic restrictions on the causative/inchoative alternation, Haspelmath (1993) considers a change of state to be the determining factor for the alternation. Thus, verbs like *break, burn, melt, roll, open*, etc., typically occur in such alternations, whereas verbs like *work, dance, cut, criticize, sleep*, etc., commonly do not. For example, there are three large classes of situations where causative/inchoative alternations could not be found. First, a state cannot be the inchoative member of a causative/inchoative alternation. Second, an action that does not express a change of state (e.g., *help, invite, cite, write, read*) cannot be the causative member of such an alternation. Third, agentive intransitive verbs like *talk, dance, work*, etc., cannot be the inchoative member of a causative/inchoative pair because they cannot be conceived of as occurring spontaneously.

However, there is still a large class of transitive verbs which do express a change of state, but lack an intransitive counterpart, such as *wash, build, cut, dig, paint*, etc. Comparing *break*-type verbs that allow the causative/inchoative alternation with *build*-type verbs that do not, Haspelmath argues that the most important specific semantic
condition on causative/inchoative verb pairs should be the absence of agent-oriented meaning components. For example, since the inchoative member of the causative/inchoative verb pair implies the absence of an agent, it cannot contain agent-oriented semantic elements. This can be shown with the verb 'cut', which minimally differs from 'tear' in that it has the agent-oriented meaning component 'by means of a sharp instrument.' Thus, while 'tear (tr.)' has a corresponding inchoative verb 'tear (intr.)', 'cut' lacks it (Haspelmath 1993:94):

(10) a. The girl tore her pants.
    b. The pants tore.

(11) a. The tailor cut the cloth.
    b. *The cloth cut.

In this regard, Pinker (1989:133) discusses cases in English in which no intransitive verb can be used to express the notion that a caused event can occur spontaneously or in the absence of a cause or agent, such as being cut or amused. According to him, the reason that the verb cut does not have an intransitive counterpart is because it is difficult to discern that events such as cutting could occur without some external cause. In the same vein, comparing the alternating verb break to the nonalternating verb cut, Levin (1993:9) argues that the reason why the verb cut does not alternate in transitivity is because, although the meaning of both verbs, cut and break, involves a change of state, the meaning of the verb cut additionally involves notions of contact and motion. Specifically, the verb cut describes bringing about a change of state by means of contact through motion; cutting involves bringing a sharp object into contact
with a surface and causing a separation in its material integrity. The verb *break*, on the other hand, is a pure change of state verb: in both its transitive and intransitive uses it simply expresses a change of state (plus a notion of *cause* when transitive), without specifying how this change of state is brought about.

2.3.2. Different Patterns with regard to Transitivity Alternations

Examples showing the causative/inchoative alternation in English are repeated below:

(12) a. The ice melted. (inchoative)
    b. Mary melted the ice. (causative)

Unlike English, which has the same verb form in both transitive and intransitive constructions, other languages have different patterns. Haspelmath (1993), for example, categorizes causative/inchoative verb pairs into three distinct classes: causative, anticausative, and non-directed alternations. Non-directed alternations are further subdivided into labile, equipollent, and suppletive alternations.

First, in the causative alternation the inchoative verb is seen as basic and the causative verb as derived. The following example shows that the causative verb can be marked by an affix:

(13) Turkish
    bat       'sink (intr.)'
    bat-ir    'sink (tr.)'

Conversely, in the anticausative alternation the causative verb is regarded as basic and the inchoative verb as derived. Again, the anticausative verb can be marked by an affix:

(14) Russian
    katat'-sja   'roll (intr.)'
    katat'       'roll (tr.)'
In non-directed alternations, neither the inchoative nor the causative verb is derived from the other. First, in equipollent alternations, for example, both the inchoative and the causative verb are derived from the same stem by means of different affixes:

(15) Japanese atum-aru 'gather (intr.)'
atum-eru 'gather (tr.)'

Second, in suppletive alternations (also belonging to a non-directed alternation) different verb roots are used:

(16) a. Russian goret' 'burn (intr.)'
     zec' 'burn (tr.)'

   b. English die (intr.)
      kill (tr.)

Finally, in labile alternations (as another example of a non-directed alternation) the same verb is used both in the inchoative and in the causative sense. The labile alternation is most widely used in English.

(17) a. Modern Greek svino
     1. go out
     2. extinguish

   b. English break
     1. become broken
     2. break

Haseplmacht (1993) further discusses typological differences between languages in terms of how they form causative/inchoative verb pairs. For example, languages differ greatly in their preferences for different types in expressing the causative/inchoative alternation. Some languages have a directed alternation (anticausative or causative), e.g., Finnish, Turkish, Mongolian, Hebrew, etc. Other languages prefer non-directed alternations, e.g., English, Japanese, Georgian, German, Greek, etc. Within languages
with many non-directed alternations, there are significant typological differences. For instance, Japanese and Georgian favor an equipollent pattern (both the inchoative and the causative verb are derived from the same stem by means of different affixes), whereas English, German, and Greek prefer a labile pattern (the same verb is used both in the inchoative and in the causative sense). Correspondingly, similar variation exists within languages with a directed alternation, i.e., languages like Russian, Rumanian, Spanish, and French prefer an anticausative over causative pattern. On the other hand, languages like Mongolian rely heavily on a causative rather than on an anticausative pattern.

In terms of conditions that determine the use of one pattern over the other, the most notable condition favoring the anticausative pattern involves the probability of an outside force bringing about the event according to Haspelmath. Conversely, the causative pattern is favored if the event would happen even if there is no outside force involved. For instance, events such as freezing, drying, sinking, going out, and melting occur commonly in nature around us and do not need an agentive instigator. On the other hand, events such as splitting, breaking, closing, opening, gathering and connecting typically involve human agents. It should be noted, however, that in both cases, the correlation is only typical, not necessary: hence, human agents may sink, extinguish, dry, melt, and even freeze things, and things may split, break, close, gather, and even connect spontaneously, but this is much less likely and less typical (Haspelmath 1993:103).
Chapter 3

Different Verb Classes and Transitivity Alternations in English and Korean

Verbs that participate in the causative/inchoative alternation are to a great extent the same in different languages. For example, change of state verbs such as break, open, melt, roll, etc., allow alternation in transitivity in English as well as in other languages. Moreover, verbs that do not participate in the causative/inchoative alternation in English also disallow the alternation in other languages. This chapter explores similarities and differences in English and Korean regarding verb classes that (dis)allow the causative/inchoative alternation. The causative/inchoative alternation in English and Korean is discussed in the first and second section, respectively. Differences between English and Korean in terms of the verb classes which (dis)allow this alternation are presented in the third section.

3.1. English

The following example shows the causative/inchoative alternation in English: the verbs used both in the transitive and intransitive constructions have the same morphological form (a "labile" alternation in Haspelmath's categorization (1993)):

(1) a. The vase broke. (inchoative variant)
    b. John broke the vase. (causative variant)

The majority of verbs in English that participate in the causative/inchoative alternation, for example, are formed identically morphologically both in the transitive and
intransitive construction (i.e., a labile pattern). Other verbs that allow the causative/inchoative alternation in English include *open, close, melt, freeze, sink, bounce, roll, clear,* and *dry,* among others. There are some examples, however, in which the events can have both causative and inchoative meanings, but the verbs are formed differently (i.e., a suppletive pattern), e.g., *kill* and *die, bring and come,* *drop and fall,* or *take and go.*

Pinker (1989:130) presents three main classes of intransitives that can be causativized. The first class includes verbs of change of physical state, i.e., *open, close, dry, freeze, melt, shrink, shatter,* etc., and the change is brought about by an external agent, which can be either an animate agent or an inanimate thing, such as a natural force.

(2) a. The box opened.
   b. I (the wind) opened the box.

The second alternating class involves verbs of particular manner of motion, i.e., *slide, skid, float, roll, bounce,* etc., and the motion need not be internally caused; it can be either voluntary or involuntary.

(3) a. The log slid.
   b. Tom slid the log.

The third alternating class is divided into two subclasses. The first subclass involves verbs of manner of locomotion, i.e., *walk, gallop, trot, race, run, jump,* etc.; here the agent in the transitive construction is seen as somebody who coerces or encourages the locomotion as in (4). The other subclass involves verbs of an instrument of transportation, i.e., *drive, fly, cycle, ferry, boat, sail, motor,* etc.; here the agent in the transitive version enables and accompanies the transportation as in (5).
(4) a. The horse walked.
   b. I walked the horse.

(5) a. Mary drove to New York.
    b. John drove Mary to New York.

   It should be noted that not all intransitive verbs can be causativized, and not all
   causative transitives can be changed into inchoative intransitives. Pinker (1989:131)
   presents verbs in English that do not alternate in transitivity although they are qualified to
   alternate. The first group of these verbs involves verbs denoting motion in a lexically
   specified direction, e.g., *go, come, ascend, descend, leave, exit, enter, arrive, etc.

   According to Pinker, in contrast to verbs of manner of motion, the theme with these verbs
   is seen as a dimensionless point undergoing a transition in space.

(6) a. My son went to school.
    b. *I went my son to school.
       (cf. I made my son go to school.)

(7) a. His sister came home from school.
    b. *He came his sister home from school.
       (cf. He made his sister come home from school.)

   The second group of verbs which do not alternate in transitivity involves verbs of
   coming into or going out of existence such as expire, decease, perish, croak, pass away,
   kick off, appear, vanish, disintegrate, etc., as in (8).

(8) a. The bird disappeared.
    b. *The magician disappeared the bird.
       (cf. The magician made the bird disappear.)

   The third group of verbs which disallow the alternation are verbs of emission, i.e.,
   emission of light such as glow, glitter, glisten, shimmer, blaze, emission of sound such as
buzz, whine, shriek, howl, chatter, and emission of substances such as bubble, erupt, smoke, sweat, ooze, puff, leak, bleed, shed, etc., as in (9), (10), and (11), respectively.

(9) a. The light glowed.
   b. *Sally glowed the light.

(10) a. The bee buzzed.
   b. *Billy buzzed the bee.

(11) a. The sauce bubbled.
   b. *Tom bubbled the sauce.

The next group of verbs that do not exhibit the causative/inchoative alternation involves verbs of volitional or internally caused actions such as eat, jump, hop, run, sing, etc., as well as verbs of emotional expression such as smile, cry, laugh, etc. In this regard, prototypical unergatives such as laugh, play, speak, etc., are usually assumed to disallow the causative/inchoative alternation, at least in English (Levin & Rappaport Hovav 1995).

(12) a. The children played.
   b. *The teacher played the children.
   (cf. The teacher made the children play.)

(13) a. The actor spoke.
   b. *The director spoke the actor.
   (cf. The director made the actor speak.)

(14) a. The crowd laughed.
   b. *The comedian laughed the crowd.
   (cf. The comedian made the crowd laugh.)

Thus, with respect to the causative/inchoative alternation, intransitive verbs can be divided into verbs that participate in this alternation (i.e., alternating verbs) and verbs that do not allow this alternation (i.e., nonalternating verbs). Certain unaccusative verbs
belong to the former group, while both unaccusative and unergative verbs are involved in the latter group.

This division should not be treated absolutely, however, because the semantic classes that determine which verbs alternate and which do not is not uniform across different languages. For example, in some cases, there is no transitive verb in the language to express the notion that X acts on Y, causing Y to change, act, or move as a result. For example, there are no verbs in English as well as in many other languages that express to cause someone to rejoice, cry, shout, drink, talk, or sleep. According to Pinker (1989:133), such events cannot be brought about by an external agent directly, but only by an internal cause. In English, most verbs of physical emission have this pattern, showing that the ability to emit a light, sound, or substance is inherent in the emitter and can be caused by an external agent only indirectly. However, in contrast to English, Korean does allow one to express the causative form of laugh, cry, sleep, walk, play, and so on, by means of morphological causatives. Thus, Pinker's view that these verbs cannot be causativized because the events that they denote cannot be brought about by an external agent seems to be limited, when taking languages other than English into account.

3.2. Korean

As the English change-of-state verbs like break, open, close, melt, freeze, sink, etc., participate in the causative/inchoative alternation, the corresponding counterparts in Korean also allow this alternation. Unlike in English, however, in Korean the alternation is marked by morphologically related rather than identical forms of the verb in the
transitive and intransitive constructions. There are mainly two different patterns for alternating verbs in Korean: for some alternating verbs, the verb used in the intransitive variant bears an inchoative morpheme, while no additional morpheme is employed in the transitive variant, as in (15) below ("anticausative" pattern). On the other hand, for some other alternating verbs, the verb in the intransitive variant is morphologically simple 1, while a morphologically complex form is used in the transitive variant, i.e., a causative morpheme is attached to the verb root in this construction, as in (16) below ("causative" pattern):

   -nom vase-acc break-past-dec
   'John broke the vase.'

        hwapyeng-i kKay-ci ess-ta.
   vase-nom break-incho-past-dec
   'The vase broke.'

(16) a. Mary-ka elum-ul nok-[i]-ess-ta.
   -nom ice-acc melt-[caus]-past-dec
   'Mary melted the ice.'

   b. elm-i nok-ass-ta.
   ice-nom melt-past-dec
   'The ice melted.'

In example (15) above, an inchoative morpheme -ci is attached to the verb root in the intransitive construction, while a bare verb is used in the transitive construction. In contrast, in example (16) a causative morpheme -i is attached to the verb root in the transitive construction, while a bare verb form appears in the intransitive construction.

According to Park (1994), the inchoative morpheme -ci in Korean is used elsewhere as an

1 The term morphologically simple is used for a verb which consists of only a bare verb, while morphologically complex is used for a verb which consists of a bare verb and an additional morpheme, e.g., a causative or inchoative morpheme.
inchoative auxiliary as in (17) or as the passive auxiliary in the syntactic passive as in (18)

(the vowels -a and -e before the inchoative morpheme -ci are epenthetic vowels):

(17) os-i cak-(a)ci-ess-ta
cloth-nom be short-become-past-dec
'The clothes became short.'

(18) Hankul-un Seycongtaywang-eyuyhay mantul-(e)ci-ess-ta
hankul-top Seycong great king-by make-pass-past-dec
'Hankul (the Korean alphabet) was invented by great king Seycong.'

As mentioned above, Korean has two distinct patterns with respect to the causative/inchoative alternation: some of the change-of-state verbs have a causative pattern, while others have an anticausative pattern. However, more verbs figure in the causative pattern than in the anticausative pattern, reflecting the fact that Korean has morphological causatives. The following examples present more alternating verbs in Korean with the causative pattern (causative morphology in the transitive construction and zero-morphology in the intransitive construction):

<table>
<thead>
<tr>
<th>Causative</th>
<th>Inchoative</th>
</tr>
</thead>
<tbody>
<tr>
<td>thay-wu-ta</td>
<td>'burn'</td>
</tr>
<tr>
<td>el-li-ta</td>
<td>'freeze'</td>
</tr>
<tr>
<td>mal-li-ta</td>
<td>'dry'</td>
</tr>
<tr>
<td>tol-li-ta</td>
<td>'turn'</td>
</tr>
<tr>
<td>kwul-li-ta</td>
<td>'roll'</td>
</tr>
<tr>
<td>thwi-ki-ta</td>
<td>'bounce'</td>
</tr>
<tr>
<td>kwut-hi-ta</td>
<td>'harden'</td>
</tr>
<tr>
<td>cwuk-i-ta</td>
<td>'kill'</td>
</tr>
<tr>
<td>sik-hi-ta</td>
<td>'cool down'</td>
</tr>
<tr>
<td>cop-hi-ta</td>
<td>'narrow'</td>
</tr>
<tr>
<td>nelp-hi-ta</td>
<td>'broaden'</td>
</tr>
<tr>
<td>sey-wu-ta</td>
<td>'stand up or stop'</td>
</tr>
<tr>
<td>kkulh-i-ta</td>
<td>'boil'</td>
</tr>
</tbody>
</table>

---

2 The occurrence of the causative morpheme in Korean, realized in different variants such as i/hi/li/ki/wu/kwu/chwu, is determined roughly by the kind of its preceding sound of the verb stem, e.g., ki appears after a nasal or [s], hi after a lenis stop [p, t, k, c], li after [l], and i elsewhere (Park 1994).
As mentioned above, the alternating verbs with the anticausative pattern in which
the bare verb is used in the transitive construction while anticausative morphology is
shown in the intransitive construction are rather limited in number:

(20)    | **Causative** | **Inchoative**
|--------|--------------|--------------|
| tat-ta | 'close'      | tat-hi-ta    | 'close'
| yel-ta | 'open'       | yel-li-ta    | 'open'
| huntul-ta | 'shake'  | huntul-li-ta | 'shake'
| pakkwu-ta | 'change' | pakkw(u)-i-ta | 'change'
| kwup-ta | 'bake'      | kwu-(e)ci-ta | 'being baked'
| kku-ta | 'turn off'  | kk-(e)ci-ta  | 'being turned off'
| khi-ta | 'turn on'   | kh-(e)ci-ta  | 'being turned on'
| pwuswu-ta | 'smash'  | pwus-(e)ci-ta | 'smash'

Park (1994:57) discusses how different languages mark the verbs differently in
the transitive and intransitive forms with respect to the causative/inchoative alternation;
e.g., in English, there is no change in terms of verb morphology in the alternation; in
Lithuanian, the alternation involves a change in the root: lauz-ti 'break (something)' <-->
luz-ti 'become broken'; in Warlpiri, there is a change in the affix in the alternation:

(21) a. Japanangka-rlu rdilyki-pu-nu karli
       'Japanangka broke the boomerang (rdilyki 'break').'

b. Karli rdilyki-ya-nu
   'The boomerang broke.'

Park considers the following examples in Korean to be similar to those in
Warlpiri, i.e., there is a change in the affix in causative/inchoative alternations
(comparable to the equipollent pattern in Haspelmath's categorization):

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3 It should be noted that the inchoative forms listed here can also be used as passive forms.
4 Unlike the verb kkay-ci-ta '(vase) broke' where an inchoative morpheme -ci is attached to the verb root,
the verbs tat-hi-ta '(door) closed' and yel-li-ta '(door) opened' have -hi and -li inchoative morphemes
attached to them, respectively. The morphemes -hi and -li are also used for other functions in Korean,
e.g., for marking causatives, passives, middles, etc.

30
(22) a. Inho-ka maktyaki-lul pul-e-\texttt{ttuli}-ess-ta
   -nom stick-acc break-epen-\texttt{caus}-past-dec
   'Inho broke the stick.'

   b. maktyaki-ka pul-e-\texttt{ci}-ess-ta
   stick-nom break-epen-\texttt{incho}-past-dec
   'The stick broke.'

In (22) \texttt{pul}- is the root, \texttt{-ttuli} the causative suffix, \texttt{-ci} is the inchoative suffix, and \texttt{-e} (alternating with \texttt{-a} according to vowel harmony rules) an epenthetic vowel which is used in front of an auxiliary verb or between serial verbs. The only function of \texttt{-ttuli-} is as the causative marker in causative/inchoative alternations. In most of the verbs with \texttt{-ttuli-} as the causative marker that participate in the causative/inchoative alternation, the bare root cannot be used as an independent verb (Park 1994:58):

(23) \begin{tabular}{ll}
Causative & Inchoative \\
\texttt{mwun-(e)ttuli-ta} & \texttt{mwun-(e)ei-ta} \ 'crumble' \\
\texttt{pwul-(e)ttuli-ta} & \texttt{pwul-(e)ei-ta} \ 'break' \\
\texttt{ssul-(e)ttuli-ta} & \texttt{ssul-(e)ei-ta} \ 'make fall' \\
\texttt{cappa-\texttt{ttuli-ta}} & \texttt{cappa-\texttt{ei-ta}} \ 'knock down' \\
\texttt{nem-(e)ttuli-ta} & \texttt{nem-(e)ei-ta} \ 'fall down' \\
\texttt{mangka-\texttt{ttuli-ta}} & \texttt{mangka-\texttt{ei-ta}} \ 'be ruined'
\end{tabular}

For example, there are no independent verbs like \texttt{mwun-ta}, \texttt{pwul-ta} (meaning \textit{break (stick)}), \texttt{ssul-ta} (meaning \textit{make fall}), \texttt{cappa-ta}, \texttt{nem-ta} (meaning \textit{knock down}), and \texttt{mangka-ta}. There are cases, however, where the bare root can be used as an independent verb:

(24) \begin{tabular}{ll}
Causative & Inchoative \\
\texttt{kkay-\texttt{ttuli-ta}} & \texttt{kkay-\texttt{ei-ta}} \ 'break (dishes)' \\
\texttt{kkunh-(e)\texttt{ttuli-ta}} & \texttt{kkunh-(e)\texttt{ei-ta}} \ 'cut' \\
\texttt{kk(u)-(e)\texttt{ttuli-ta}} & \texttt{kk(u)-(e)\texttt{ei-ta}} \ 'extinguish'
\end{tabular}
Here the roots *kkay-ta, kkunh-ta,* and *kku-ta* can be used as an independent verb with meanings 'break', 'cut', and 'extinguish', respectively. According to Park (1994), in the alternating verbs shown in (24), the roots which are transitive verbs and the derived causative verbs show meaning differences. In the pair *kku-ta* 'extinguish' and *kk(u)-ettuli-ta* 'extinguish', for example, the former is more appropriate for a situation in which the subject extinguishes a fire intentionally, whereas the latter is used if the subject does so unintentionally.

3.3. Differences and/or Similarities between English and Korean in terms of the Causative/Inchoative Alternation

English and Korean differ in terms of the pattern they use with respect to the causative/inchoative alternation. English uses mostly one pattern, i.e., the labile pattern, in which the alternating verbs are formed identically both in the transitive and intransitive construction (e.g., *break* for both caused and spontaneous events). In contrast, mostly two different patterns are used in Korean, i.e., anticausative and causative, although many more verbs fit in the latter pattern in which the verb in the transitive construction bears a causative morpheme, and a bare verb is used in the intransitive construction. The causative pattern stands in a direct opposition to the anticausative pattern in which the verb used in the transitive construction is a morphologically simple verb, while a morphologically complex verb appears in the intransitive construction, i.e., an inchoative

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5 There is another pattern in English, i.e., *suppletive pattern,* in which such pairs of verbs like *kill/die,* *drop/fall,* etc., fit. Verbs with this pattern, however, are rather limited in number in English.

6 There is another pattern in Korean, i.e., the labile pattern, in addition to the causative and anticausative patterns, to which verbs like *memchwuta* 'stop' and *wumcikita* 'move' belong. Verbs which figure in this pattern are very limited in number, however.
morpheme is attached to the verb root in this construction. This dissertation is primarily concerned with these two patterns in Korean in relation to the labile pattern in English.

An additional difference between English and Korean involves language-specific characteristics with respect to the categorization of intransitive verbs into unaccusative and unergative verbs. Thus, using the causative/inchoative alternation as a diagnostic for the unaccusativity of a verb turns out to be problematic when considering languages different from English. For example, in contrast to unaccusative verbs that exhibit the causative/inchoative alternation, the verbs categorized typically as unergative verbs such as *laugh, play, cry,* etc., in English lack this alternation, as repeated below:

   b. *The teacher played the children. (cf. The teacher made the children play.)

(26) a. The baby cried.
   b. *Mary cried the baby. (cf. Mary made the baby cry.)

(27) a. The crowd laughed.
   b. *The comedian laughed the crowd. (cf. The comedian made the crowd laugh.)

The corresponding verbs in Korean, however, show the alternation, although these verbs require a causative morpheme in the transitive construction:

    child-pl-nom play-past-dec
    'The children played.'

   b. sensayngnim-i ai-tul-ul nol-[li]-ess-ta.
      teacher-nom child-pl-acc play-caus-past-dec
      'The teacher played the children.' (cf. 'The teacher made the children play.')

(29) a. aki-ka wul-ess-ta.
    baby-nom cry-past-dec
    'The baby cried.'
   -nom baby-acc cry-[caus]-past-dec
   'Chulsoo cried the baby.' (cf. 'Chulsoo made the baby cry.')

(30) a. kwancwung-i wus-ess-ta.
   crowd-nom laugh-past-dec
   'The crowd laughed.'

b. khomidien-i kwancwung-ul wus-[ki]-ess-ta.
   comedian-nom crowd-acc laugh-[caus]-past-dec
   'The comedian laughed the crowd.'
   (cf. 'The comedian made the crowd laugh.')

The following examples include more unergative verbs in Korean which can alternate in transitivity:

(31) Causative                      Unergative
    cay-[wu]-ta 'make sleep'       ca-ta 'sleep'
    kel-li-ta 'make walk'          ket-ta 'walk'
    nal-li-ta 'make fly'           nal-ta 'fly'
    anc-hi-ta 'make sit down'      anc-ta 'sit down'
    kkay-[wu]-ta 'make wake up'    kkay-ta 'wake up'

Nedyalkov & Silnitsky (1973) state that while the exact verbs that participate in causative alternations differ across languages, there are systematic patterns governing which verbs are most likely to alternate. Thus, among the languages they investigated they found that whereas break is quite likely to participate in a lexical causative alternation, no language allows a lexical causative form of laugh, or even a suppletive verb meaning "cause to laugh." Verbs such as boil and burn were somewhere in between. They did not examine languages like Korean, however, where unergative verbs can participate in the causative/inchoative alternation although the causative in this alternation is not a lexical but a morphological causative. As shown above, the verb wus-
'laugh (intr.)' in Korean, for example, can have a morphological causative form *wus-ki-ta* (laugh-caus-dec) 'make laugh.'

Not all unergative verbs in Korean can participate in the causative/inchoative alternation, however. Thus, such unergative verbs as *mal-hata* (language-do) 'speak', *nolay-hata* (song-do) 'sing', *chwum-chwuta* (dance (N)-dance (V)) 'dance', etc., in Korean do not participate in the alternation as in English:

(32) a. paywu-ka malhay-ss-ta.
actor-nom speak-past-dec
'The actor spoke.'

b. kamtok-i paywu-lul malha-[i]-ess-ta.
director-nom actor-acc speak-caus-past-dec
'The director spoke the actor.'

The reason that unergative verbs like *mal-hata* (language-do) in Korean disallow the causative/inchoative alternation could lie in the phonological and/or morphological constraints with these verbs. For example, most verbs to which the causative suffixes (i.e., *i/hi/li/ki*) can be attached in Korean have monosyllabic roots. Consider the following examples:

<table>
<thead>
<tr>
<th>(33)</th>
<th>Unergative Verb</th>
<th>Morphological Causative</th>
</tr>
</thead>
<tbody>
<tr>
<td>wul-ta</td>
<td>'cry'</td>
<td>wul-li-ta 'make cry'</td>
</tr>
<tr>
<td>wus-ta</td>
<td>'laugh'</td>
<td>wus-ki-ta 'make laugh'</td>
</tr>
<tr>
<td>nol-ta</td>
<td>'play'</td>
<td>nol-li-ta 'make play'</td>
</tr>
<tr>
<td>anc-ta</td>
<td>'sit'</td>
<td>anc-hi-ta 'make sit'</td>
</tr>
<tr>
<td>ca-ta</td>
<td>'sleep'</td>
<td>cay-wu-ta 'make sleep'</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>(34)</th>
<th>Unaccusative verb</th>
<th>Morphological Causative</th>
</tr>
</thead>
<tbody>
<tr>
<td>nok-ta</td>
<td>'melt'</td>
<td>nok-i-ta 'melt'</td>
</tr>
<tr>
<td>el-ta</td>
<td>'freeze'</td>
<td>el-li-ta 'freeze'</td>
</tr>
<tr>
<td>thwi-ta</td>
<td>'bounce'</td>
<td>thwi-ki-ta 'bounce'</td>
</tr>
<tr>
<td>tol-ta</td>
<td>'spin'</td>
<td>tol-li-ta 'spin'</td>
</tr>
<tr>
<td>tha-ta</td>
<td>'burn'</td>
<td>tay-wu-ta 'burn'</td>
</tr>
</tbody>
</table>
In addition, the verbs to which the causative suffix can be attached are exclusively of native Korean origin. Compare now the unergative verbs which can have the causative suffix to those which cannot, such as *mal-hata* 'speak', *nolay-hata* 'sing', *chwum-chwuta* 'dance', *kkwum-kkwuta* 'dream', etc. Here, the first two verbs are in the form of a noun (i.e., *mal* 'language' or *nolay* 'song') plus the verb *hata* 'do.' Although the nouns that occur with the verb *hata* 'do', such as *mal* 'language' or *nolay* 'song', are native Korean words, they are not verbs to which the causative suffix can usually be attached. In addition, these nouns are presented in the frame often associated with Sino-Korean forms (e.g., *kongpwu-hata* (study (N) + do) 'study', *cosim-hata* (carefulness (N) + do) 'being careful', *phyengka-hata* (evaluation (N) + do) 'evaluate', etc., where the nouns used in these examples are of Chinese origin).

The other unergative verbs like *chwum-chwuta* 'dance' and *kkwum-kkwuta* 'dream' in Korean to which the causative suffix cannot be attached consist of a noun *chwum* 'dance' plus a verb *chwuta* 'dance', or a noun *kkwum* 'dream' plus a verb *kkwuta* 'dream'. Here again, although the nouns (i.e., *chwum* 'dance' or *kkwum* 'dream') that occur with the verbs *chwuta* 'dance' or *kkwuta* 'dream', respectively, are native Korean words, they are not verbs to which the causative suffixes can usually be attached. To sum up, all the examples shown above to which the causative suffixes *i/hi/li/ki* cannot be attached have something in common, i.e., they are made up of a noun and a verb, thus blocking these suffixes from being attached to the verb.
In addition to those unergative verbs in Korean which cannot participate in the causative/inchoative alternation, the verbs of (dis)appearance and directed motion also do not exhibit this alternation, as in English:

(35) a. thokki-ka nathana-ss-ta.
    rabbit-nom appear-past-dec
    'The rabbit appeared.'

b. *maswulsa-ka thokki-lul nathana-[i]-ess-ta.
    magician-nom rabbit-acc appear-[caus]-past-dec
    'The magician appeared the rabbit.'
    (cf. 'The magician made the rabbit appear.')</n
    -nom school-to go-past-dec
    'Youngsoo went to school.'

    mother-nom -ace school-to go-[caus]-past-dec
    'The mother went Youngsoo to school.'
    (cf. 'The mother made Youngsoo go to school.')

To summarize, English and Korean are similar in terms of which unaccusative verbs allow the causative/inchoative alternation, i.e., externally caused change-of-state verbs participate in this alternation. These two languages differ, however, in how they mark the alternating unaccusative verbs. English has a labile pattern, whereby the verbs occurring in both transitive and intransitive constructions have the same form (e.g., John opened the door/ The door opened). In contrast, Korean has two different patterns, i.e., anticausative and causative. In the anticausative pattern, the verb appearing in the transitive construction is a non-derived verb, while the verb occurring in the intransitive construction is a derived verb consisting of a root and an inchoative morpheme. In the
causative pattern, on the other hand, the verb occurring in the transitive construction is a derived verb consisting of a root and a causative morpheme, while a non-derived verb appears in the intransitive construction.

Moreover, English and Korean are similar in that verbs denoting motion such as *come* and *go* as well as verbs like *appear, disappear*, etc., cannot participate in the causative/inchoative alternation. As far as unergative verbs are concerned, English and Korean differ because these verbs usually cannot participate in the alternation in English, while some unergative verbs can alternate in transitivity in Korean, whereas others cannot. I turn now to discuss the L1 as well as L2 acquisition of the causative/inchoative alternation.
Chapter 4

Acquisition of the Causative/Inchoative Alternation in L1 and L2

It is generally believed that children acquire vocabulary at a relatively fast rate. However, their acquisition of argument structures of verbs is not error-free. For example, children make overgeneralization errors about argument structures of verbs from which they are able to recover later on without relying on correction or negative evidence. Referring to Pinker (1989), Montrul (2001b:53) states that children are guided by innate principles when they learn argument structures of verbs.

This chapter examines argument-structure errors made by both L1 and L2 learners. First, several models proposed to explain argument-structure errors made by English-speaking children are discussed. Second, Korean-speaking children are examined with respect to their errors concerning argument structure of verbs, and how/when they expunge these errors. Third, the literature dealing with the acquisition of argument structure of verbs by L2 learners, specifically the acquisition of the causative/inchoative alternation, is reviewed. Lastly, two different types of transfer are introduced which are important for the study at hand. For example, the idea of transfer of morphological properties is explained in terms of class-based transfer, which is contrasted to pattern-based transfer.
4.1. L1 acquisition

4.1.1. English

There is a paradox in the language acquisition of children, known as Baker's paradox, which is that children are not conservative learners because they are not restricted in using verbs only in the argument structure attested, but they nevertheless end up with the adult representations they would acquire if they were conservative learners (Pinker 1989). For example, English displays alternating constructions with some verbs but not with others, despite similarities in meaning (drop/fall, splash/pour, etc.).

Consider the following:

(1) a. Mary dropped the pen.
    b. The pen dropped.

(2) a. *Mary fell the pen.
    b. The pen fell.

(3) a. The carpenter splashed the paint onto the wall.
    b. The carpenter splashed the wall with the paint.

(4) a. The waitress poured water in the glass.
    b. *The waitress poured the glass with water.

Here, the question is how children know that some verbs allow alternations and some verbs do not. It is well known that children make overgeneralization errors such as Don't giggle me with verbs which do not allow alternations. Pinker (1989) argues that syntactic alternations are not arbitrary, but are constrained by semantic criteria.
Overgeneralization errors arguably occur because children are not at first aware of the subtleties of these criteria. They eventually acquire the relevant criteria, at which point their syntactic usage will conform to the adult form.

Research on the child learners' acquisition of transitivity alternations has proven to be important because semantically coherent verb classes participate in argument structure alternations, and, thus, learners need to discover what makes verbs pattern together with respect to their syntactic behavior. Among various argument structure alternations the causative/inchoative alternation has been extensively investigated in children acquiring English (Bowerman 1974 & 1982; Lord 1979; Hochberg 1986), Hebrew (Berman 1982), Portuguese (Figueira 1984), and Quechua (Courtney 2002). Bowerman (1974), for example, reports on causative errors made by her child, Christy, such as I'm just gonna fall this on her (fall used for drop), I'm singing him (sing used for make sing), Daddy go me around (go used for make go), and so on. These examples show that the child formed novel transitive verbs from intransitives, a valency-increasing operation. The same kind of operation is also manifested when ditransitive verbs are made from transitives like You can drink me the milk (drink me for make me drink) as shown in Lord (1979).

At about the same time that novel transitive verbs are formed from intransitives, children also make errors in the opposite direction, making normally transitive verbs intransitives like Bert knocked down (knocked down for got knocked down) shown in Bowerman (1982) and ditransitives monotransitives like She calls Fluffy Cat (for I call her Fluffy Cat) reported in Lord (1979).
Bowerman (1974) disfavors the view that these errors occur in English because children hear in the input that verbs like *break* and *melt*, for instance, can be used transitively or intransitively. Since the causative/inchoative alternation is not morphologically marked in English, children assume that other intransitive verbs can alternate too. According to Bowerman, this view is inadequate because it cannot account for the directionality of the errors that children usually make, i.e., using an intransitive verb in a transitive configuration with a causative meaning (e.g., *I'm just gonna fall this on her*) rather than using a transitive verb intransitively (e.g., *The fly killed, the key lost*, etc.), which is extremely rare in children's speech.

Bowerman interprets children's errors of argument structure within a theoretical framework which assumes that lexical items are made up of "syntactically structured combinations of smaller semantic units variously termed components, markers, semantic predicates, features, etc." (1974:149). Hence, she maintains that children know about the compositional nature of verb meaning, and thus analyze transitive verbs as "cause to do something." For example, transitive verbs like *open, break, close*, etc., are derived from their intransitive counterparts and the meanings of the latter are included in the meanings of the former. A semantic component which plays an important role in these verbs is *CAUSE*. The predicate corresponding to the caused event can often be decomposed still further into an inchoative semantic notion such as *BECOME*, and a state. Thus, the verb *kill* is composed of the semantic structure "cause to become dead", and *open "cause to become open."* Bowerman's compositional account takes the relationship between
causative verbs and their noncausative counterparts as derivational or inclusive, and, thus, helps explain children's causative errors (using noncausative verbs in a causative sense).

Children's transitivity errors have also been investigated with respect to how children constrain argument structure. For example, Pinker (1989) claims that children learn classes of verbs, defined mostly via semantic constraints, that behave in a similar way syntactically. On the other hand, Braine & Brooks (1995) argue that children initially form constructions on the basis of exposure to many exemplars of similar utterances from which they extract commonalities of both form and meaning. Similarly, Brooks & Tomasello (1999) introduce the notion of *strengthening* or *entrenchment*, according to which the more frequently children hear a verb used in a particular construction (the more firmly its usage is entrenched), the less likely they will be to extend that verb to any novel construction in which they have not heard it used. Additionally, they also introduce the notion of *preemption*, which means that if children hear a verb used in a linguistic construction that serves the same communicative function as another construction, they may infer that the one not heard is not conventional.

Thus, Brooks & Tomasello (1999) predict that children would respect the experimentally assigned transitivity of a novel verb more often if they had learned to use that verb with a preempting alternative construction. Based on the data in their study, the authors argue that, consistent with Pinker's proposal of narrow-range semantic classes, children tend to respect the assigned transitivity of a novel verb to a greater extent if it belongs to a fixed-transitivity class (either transitive or intransitive) than if it belongs to a
class of verbs that can be used bitransitively. The 2-year-olds' failure to use indirect
negative evidence is interpreted to mean that the preemption effect might emerge only
after considerable exposure to English verbs and the constructions in which they
canonically occur. According to Brooks & Tomasello, the reason why children make
more transitivity-increasing errors rather than the reverse is that, with age, they come to
know to a greater extent the inherent transitivity of the event they are witnessing and
because the events enacted are typically highly transitive with two salient participants.

4.1.2. Korean

According to Y. Kim (1997), Korean children acquire morphological causative
verbs before their second birthday, just like regular transitive verbs, which are derived by
adding the causative suffix—in seven allomorphic variants i/hi/ki/wu/kwu/chwu—to the
verb root, such as puth-i (stick-caus) 'attach', mek-i (eat-caus) 'feed', and ip-hi (put on-
caus) 'dress (others)', kam-ki (wash-caus) 'wash (other's hair)', cay-wu (sleep-caus) 'make
sleep', etc. Some children, however, erroneously use the base form in contexts requiring
the derived morphological causative form for several months or longer after the second
birthday, e.g., pes-'take off one's clothes' for pes-ki 'undress (others)', ip- 'put on one's
clothes' for ip-hi 'dress (others)', nwup- 'lie down' for nwup-hi 'lay down', anc- 'sit down'
for anc-hi 'make sit down', tol- 'turn around (intransitive)' for tol-li 'make turn around',
olu- 'move up' for ol-li 'make move up', po- 'look' for po-i 'show', and so on.

Furthermore, some children make mistakes with certain verbs that employ
morphologically unrelated roots for spontaneous and caused events. For example, one
child (2;6)⁷ produced kkay-wu-sey-yo (wake up-caus-hon-ender) 'please wake [someone]' up' instead of ilena-sey-yo (get up-hon-ender) 'please get up', asking his mother to get up, as reported in Y. Kim (1997:347). In terms of the use of inchoative verbs by Korean-speaking children, Kim mentions that they produce some unaccusative verbs formed by adding the inchoative suffix to inherently transitive verb roots very early on, such as ttel-e-ci-e (fall-e-pen-incho-dec) 'drop', nem-e-ci-e (fall over-e-pen-incho-dec) 'fall over', and pwuswu-e-ci-e (break-e-pen-incho-dec) 'break.' Some children (2;5-3;5), however, overapply the inchoative suffix -ci to inherently unaccusative verb roots or to morphologically compound unaccusative verb stems. For example, one child produced *mwul-i hull-e-ci-e (water-nom flow-e-pen-incho-dec) 'water flows', *i-key an toy-e-ci-e (this-nom neg-become-e-pen-incho-dec) 'this does not work', *tipi-ka huntul-li-e-ci-e (TV-nom shake-incho-e-pen-incho-dec) 'The TV screen trembles', etc.


According to Park, his daughter was using non-causative verbs causatively at the age of 2;4: at this age, she was using only non-causative verbs in contexts in which

⁷ The first number indicates year and the second month; thus, 2;6 means that the child is two years and six months old.
derived morphological causative verbs are appropriate in adult speech. When she was around 2;8, she began to use both forms (non-causatives and derived causatives) where derived causative verbs are appropriate in adult speech. At this time, shortly after using a non-causative verb, she sometimes used the causative verb corresponding to the non-causative, or vice versa.

(5) appa, papi os {a. ip, b. ip-hi}-ecwu-e
dad Barbie clothes put on self put on self-caus-ben-req
(a) Dad, put on Barbie's clothes.
(b) Dad, put clothes on Barbie (doll).

By the age of 3, she was using derived causative verbs more than non-causative verbs; by age 3;2-3;3, derived causative verbs were used almost exclusively. Park mentions in passing that he heard from several informants that their children had also used or were using noncausative verbs in contexts where causative verbs would be appropriate in adult speech.

Research on the acquisition of unaccusative verbs that participate in the causative/inchoative alternation by Korean-speaking children has been scarce. For example, it would be interesting to see how productively Korean-speaking children make errors using unaccusative verbs like nok-ta 'melt (intr.)', el-ta 'freeze (intr.)', kwulu-ta 'roll (intr.)', tol-ta 'spin', etc., in a transitive construction where a derived morphological causative form is appropriate in adult speech, i.e., nok-i-ta 'melt (tr.)', el-li-ta 'freeze (tr.)', kwul-li-ta 'roll (tr.)', tol-li-ta 'spin (tr.)', etc. Further, it would also be interesting to see whether Korean-speaking children make errors using verbs like yel-ta 'open (tr.)', tat-ta 'close (tr.)', kKay-ta 'break (tr.)', etc., in an intransitive construction where a derived
inchoative form is appropriate in adult speech, i.e., *yel-li-ta* 'open (intr.)', *tat-hi-ta* 'close (intr.)', *kkay-ci-ta* 'break (intr.)', etc.

Moreover, it would be worth investigating what kinds of errors Korean-speaking children make when they want to express a causative situation with nonalternating unaccusative verbs such as *kata* 'go', *ota* 'come', *epsecita* 'disappear', *nathanata* 'appear', as well as with (non)alternating unergative verbs such as *wusta* 'laugh', *wulta* 'cry', *cata* 'sleep', *ttwita* 'run', etc. Concerning alternating unergative verbs in Korean, it was shown in Y. Kim's study that Korean-speaking children make errors using an intransitive verb in a causative sense, such as *nwup-* 'lie down' for *nwup-hi* 'lay down', *anc-* 'sit down' for *anc-hi* 'make sit down', etc. These errors appear to parallel overgeneralization errors made by English-speaking children, who use an intransitive verb in a transitive construction to express a causative event, errors such as *I'm just gonna fall this on her* (fall used for drop), *I'm singing him (sing used for make sing)*, *Daddy go me around (go used for make go)*, as shown in Bowerman (1974).

It is unclear, however, whether the reason that Korean-speaking children use an intransitive verb in a causative situation is because the correct verb form consisting of a verb root and a causative morpheme is a complex verb form, or whether their errors simply parallel those overgeneralization errors made by English-speaking children as well as children of different L1s, thus showing a more general phenomenon in language acquisition.
4.2. L2 Acquisition

The causative/inchoative alternation has been extensively investigated in L2 acquisition recently (e.g., Montrul 1997, 1999, 2001; Moore 1993; Oshita 1997). The reason for the increasing interest of this particular alternation in L2 acquisition lies in the fact that the same kinds of verbs in different languages undergo this alternation.

Some research on the acquisition of argument structure and/or lexicon-syntax interface by adult L2 learners has shown that, based on their L1, learners transfer and overgeneralize, e.g., Spanish speakers of English show a preference for morphology for inchoatives (Juffs 2000). In Spanish the intransitive form has a reflexive clitic se as in (6b).

(6) a. Franco abrió la puerta. 'Frank opened the door.'
   b. La puerta [se] abrió. 'The door opened.'

Spanish learners, for example, accepted the get-intransitive forms (e.g., the window got broken) instead of the zero-derived inchoatives (e.g., the window broke) in English. According to Montrul (2001b), the reason why these learners preferred the former forms to the latter in English is because they might have treated get as something analogous to the reflexive clitic se in their language.

Despite overgeneralizations and somewhat different developmental paths based in part on L1, advanced learners seem able to recover from overgeneralizations in some instances. On the other hand, some evidence of universal patterns of development is also seen. For example, it has been shown that L2 learners from different backgrounds have difficulty with pure unaccusative verbs, thus producing sentences like The most
memorable event of my life was happened 15 years ago or My mother was died when I was just a baby, etc. (Zobl 1989). In terms of causativity errors, Montrul (1997) claims that L2 learners of English at an early stage have a default transitive template for all verbs, thus allowing an SVO structure in English even with pure unaccusative and unergative verbs.

Montrul's claim (1999; 2001a; 2001b) that morphology can be transferred from the native language to the interlanguage grammar is tested in this dissertation. Montrul extensively explores L2 learners' acquisition of the causative/inchoative alternation by conducting various experiments on L2 learners with different native languages. For example, Montrul (2001b) investigates the acquisition of English as a second language with respect to verbs exhibiting similar semantic and syntactic behavior. The verbs in question involve change-of-state verbs that participate in the causative/inchoative alternation and are generally assumed to be causative. Consider the following:

(7) a. Frank/the wind opened the door. (causative)
    b. The door opened. (inchoative)

Montrul (2001b) adopts the approach proposed by Levin & Rappaport Hovav (1995), according to which the causative has an externally controlled verb with the following lexico-semantic representation:

(8) \mbox{[[x ACT] CAUSE [y BECOME <STATE>]]}

In her work, Montrul tests the Full-Transfer/Full-Access hypothesis put forth by Schwartz & Sprouse (1996), according to which the native language is the starting point in second-language acquisition. This hypothesis predicts that for alternating verbs in
English, Spanish speakers should be less accurate with inchoative forms than with causative forms, because inchoatives have a reflexive clitic *se* in their language. On the other hand, Turkish learners are expected to accept the verbs *open, close,* and *break* in lexical causatives but reject the inchoative counterparts because these verbs have the inchoative morpheme in the intransitive construction in their language. In addition, with verbs of the causative pattern, such as *sink* and *melt,* Turkish learners should accept these verbs in the inchoative form and reject them in the causative form in English because with these verbs the causative morpheme is employed in the transitive construction, while an underived verb is used in the intransitive construction in Turkish.

Consider the following tables, which illustrate predictions made for Spanish- and Turkish-speaking learners of English (Spanish has one major pattern, i.e., anticausative pattern, and Turkish has two different patterns—anticausative and causative):

Table 1. Predictions for Spanish-speaking learners

<table>
<thead>
<tr>
<th>Verbs like <em>open, close, break, sink, melt,</em> etc.</th>
<th>Lexical causative</th>
<th>Inchoative</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>accept</td>
<td>reject</td>
</tr>
</tbody>
</table>

Table 2. Predictions for Turkish-speaking learners

<table>
<thead>
<tr>
<th>Verbs like <em>open, close, break,</em> etc.</th>
<th>Lexical causative</th>
<th>Inchoative</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>accept</td>
<td>reject</td>
</tr>
<tr>
<td>Verbs like <em>sink, melt, freeze,</em> etc.</td>
<td>reject</td>
<td>accept</td>
</tr>
</tbody>
</table>

For nonalternating verbs, it is hypothesized that both Turkish and Spanish speakers should equally reject unaccusative and unergatives in the transitive construction (e.g., *The magician disappeared the rabbit; The dentist cried the boy*). Conversely,
they should accept unaccusatives and unergatives in the intransitive construction (e.g., *The rabbit disappeared; The boy cried), according to Montrul (2001b).

Montrul's results for alternating verbs show that both Turkish- and Spanish-speaking learners treated causative and inchoative forms differently, showing in general more accuracy with the causative forms and less accuracy with the inchoative forms. However, there was a great difference between these two groups of learners in the inchoative forms, i.e., Spanish learners rejected zero-derived inchoatives and preferred the lexicalization of the inchoative meaning in the verb get (e.g., the window got broken), which means, according to Montrul (2001b), that Spanish learners might have treated get as something analogous to the reflexive clitic se in their language.

Results on nonalternating unaccusative verbs show that both native-speaker and second-language groups were equally accurate with the intransitive construction (e.g., The rabbit disappeared), whereas both Spanish- and Turkish-speaking learners were very inaccurate at rejecting the ungrammatical transitive construction (e.g., *The magician disappeared the rabbit). As for nonalternating unergative verbs, all groups were very accurate with intransitive constructions (e.g., The man laughed). However, although all groups rejected unergative verbs in the transitive construction (e.g., *Peter laughed the man), the Turkish group was significantly less accurate than the others.

Based on the results in her study, Montrul (2001b) argues that L2 learners know that alternating verbs alternate in transitivity. It should be noted, however, that differences between causative and inchoative forms of alternating verbs in the learners'
respective languages affect the learners' performance, shown by the fact that Spanish learners rejected the inchoative form in English because it is zero derived. For the Turkish group, native-language influence was less obvious, according to Montrul, because these learners did not treat the alternating verbs open, close, and break ("anticausative" pattern in their language) differently from sink, melt ("causative" pattern), and burn (suppletive). This finding is important for the study at hand since Korean is similar to Turkish in having two distinct patterns with unaccusative verbs—anticausative and causative. It would be interesting to see whether Korean learners of English are similar to or different from Turkish learners of English in terms of transferring (or not transferring) morphological characteristics from their L1 in assessing unaccusative verbs in English.

Montrul (1999) explores the acquisition of unaccusative verbs in Spanish interlanguage by Turkish- and English-speaking learners. In Spanish the intransitive form has a reflexive clitic se, as repeated below:

(9) a. Franco abrió la puerta. 'Frank opened the door.'
   b. La puerta abrió. 'The door opened.'

On the other hand, nonalternating unaccusative verbs of (dis)appearance and of directed motion and those with suppletive pairs in Spanish can optionally take the reflexive clitic, but depending on its presence or absence, there is often a change of meaning. Further, unergative verbs do not participate in the causative alternation and do not take a reflexive clitic (Montrul 1999).
Turkish- and English-speaking learners of Spanish are expected to distinguish between unaccusative and unergative verbs, on the one hand, and different subclasses of unaccusative verbs, on the other, with respect to the transitivity possibilities of these verbs. Furthermore, the Turkish-speaking learners are expected to perform better than the English-speaking learners in accepting the reflexive morphology of intransitive forms in Spanish because in English alternating verbs are morphologically identical (i.e., unaffixed), whereas they are marked morphologically differently in Turkish. The results confirm this, i.e., the English-speaking learners performed poorly at accepting intransitive forms of alternating verbs in Spanish.

On the one hand, both English- and Turkish-speaking learners of Spanish seem to know that alternating unaccusative verbs alternate in transitivity and that nonalternating unaccusative and unergative verbs do not. However, the learners also accepted a fair percentage of causative errors with intransitive verbs as natural, thus showing a similar pattern to the errors reported in L1 acquisition. According to Montrul (1999), L2 learners might have assumed that nonalternating unaccusative verbs participate in the causative/inchoative alternation, thus failing to realize that these unaccusatives do not have CAUSE in their lexico-semantic structure. Thus, she claims that at this argument-structure level, L1 and L2 acquisition are guided by the same default linguistic mechanisms, emerging from the interaction of input and universal components of language, such as a default transitive template.
These results, however, pose a problem to the Full-Transfer/Full-Access hypothesis (FT/FA), adopted in Montrul (1999) to explain the L2 learners' performance in her study, according to which no errors should be found in terms of argument structures of verbs because the three languages in question behave alike with respect to the transitivity possibilities of alternating unaccusative, nonalternating unaccusative and unergative verbs. However, Montrul maintains the hypothesis by suggesting that the subjects that participated in her study were intermediate rather than beginner-level learners, and, thus, they were probably past the initial state. Thus, the learners have overcome the period of full-transfer and are in the full-access stage of the FT/FA, according to her. L1 influence was clearly seen in the other linguistic domain, however, i.e., morphology. Thus, Montrul argues that L1 plays a more prominent role with the morphology of alternating verbs than with the argument structure of different subclasses of intransitive verbs, indicating that transfer might not operate uniformly in all linguistic domains in interlanguage grammars.

In another L2 study, Montrul (2001a) investigates the role of the native language in the acquisition of change-of-state verbs that participate in a causative/inchoative alternation in Turkish. As in other languages, in Turkish, not all unaccusative verbs participate in a causative/inchoative alternation, i.e., only certain verbs that express a change-of-state allow this alternation. In addition, unergatives do not generally allow this alternation.
The alternating unaccusatives in Turkish are categorized into two different subclasses: some verbs have morphological causatives (called *causative pattern*), while some other verbs have anticausatives (called *anticausative pattern*).

For example, in Turkish the verbs açmak 'open', kapamak 'close', and kirmak 'break' have the anticausative pattern: the anticausative suffix -ıll is used in the inchoative form, as in (9b).

(10) a. Hirsiz pencere-yi kır-dı.
   thief window-acc break-past
   'The thief broke the window.'

   b. Pencere kır-ıll-dı.
   window break-[anticausative]-past
   'The window broke.'

Unlike English and Spanish, however, Turkish has morphological causatives. Thus, other alternating verbs, such as erimek 'melt', batmak 'sink', and ölmek 'die', have causative morphology (the suffix -Dır) on the causative form, as in (10b).

   ship sink-past
   'The ship sank.'

   b. Düşman gemi-yi bat-ır-mıs.
   enemy ship-acc sink-[caus]-past
   'The enemy sank the ship.'

The Full-Transfer/Full-Access Hypothesis predicts that with change-of-state verbs of the causative pattern (e.g., ölmek 'die', erimek 'melt', batmak 'sink') Spanish and English learners will behave similarly with the causative (transitive) form, incorrectly rejecting verbs of the causative pattern with the causative morpheme and accepting verbs
of the causative pattern without it, according to Montrul (2001a). The hypothesis further predicts that with the inchoative form, the English speakers should correctly accept inchoative forms without any morphology. In contrast, the Spanish speakers are expected to overgeneralize the anticausative morphology because in Spanish alternating change-of-state verbs have the anticausative pattern, i.e., the verb in the inchoative form has a reflexive clitic se. Furthermore, with change-of-state verbs of the anticausative pattern (e.g., açmak 'open', kapamak 'close' and kirmak 'break'), Spanish speakers are expected to be more accurate than English speakers both with causative and inchoative forms. In contrast, the English speakers will correctly accept kirmak 'break' without causative morphology on the transitive form but incorrectly reject inchoatives with anticausative morphology.

Consider the following tables which illustrate predictions made for both English- and Spanish-speaking learners of Turkish:

Table 3. Predictions for English-speaking learners

<table>
<thead>
<tr>
<th>Pattern</th>
<th>Causative</th>
<th>Inchoative</th>
</tr>
</thead>
<tbody>
<tr>
<td>Anticausative pattern (open, close, break, etc.)</td>
<td>accept</td>
<td>reject</td>
</tr>
<tr>
<td>Causative pattern (sink, melt, freeze, etc.)</td>
<td>reject</td>
<td>accept</td>
</tr>
</tbody>
</table>

Table 4. Predictions for Spanish-speaking learners

<table>
<thead>
<tr>
<th>Pattern</th>
<th>Causative</th>
<th>Inchoative</th>
</tr>
</thead>
<tbody>
<tr>
<td>Anticausative pattern (open, close, break, etc.)</td>
<td>accept</td>
<td>accept</td>
</tr>
<tr>
<td>Causative pattern (sink, melt, freeze, etc.)</td>
<td>reject</td>
<td>reject</td>
</tr>
</tbody>
</table>

The results for change-of-state verbs in the causative pattern show that learners were quite accurate with the grammatical sentences, thus showing their knowledge that
these verbs alternate in transitivity and that the causative form is morphologically complex. These results, therefore, contradict the prediction made by the Full-Transfer/Full-Access Hypotheses, according to which learners are expected to have difficulty with causative verbs with causative morphology.

The results for change-of-state verbs in the anticausative pattern show that all groups correctly accepted the causative and inchoative grammatical sentences. The English group was less accurate than the other groups at correctly accepting causative forms without causative morphology and inchoative forms with anticausative morphology. With respect to the ungrammatical sentences, the English speakers were also less accurate than the other groups at rejecting already causative verbs with overt causative morphology, and at rejecting inchoatives without the anticausative morpheme. The Spanish groups, on the other hand, were very accurate at correctly accepting grammatical forms and rejecting ungrammatical forms. This response is expected because, unlike English, Spanish has the anticausative pattern with intransitive verbs, and, in general, does not allow zero-derived intransitive forms, confirming predictions made by the Full-Transfer/Full-Access hypothesis (Montrul 2001a).

Based on the results in her study, Montrul (2001a) claims that the results are compatible with the Full-Transfer/Full-Access hypothesis, i.e., remnants of L1 influence are still observable in L2 learner's interlanguage grammars. For example, Spanish learners are more accurate than English learners on verbs in the anticausative pattern with both grammatical and ungrammatical forms.
The findings shown in the several studies conducted by Montrul (1999; 2001a; 2001b) uniformly reveal that morphology can be transferred from the native language to the interlanguage grammar. For example, Spanish speakers showed better performance at identifying the anticausative pattern in Turkish, where the intransitive construction has the inchoative morpheme, because in Spanish an inchoative morpheme is also used in the intransitive construction. In contrast, English-speaking learners performed poorly on the same pattern, because there is no extra morpheme used for the intransitive construction in English.

Comparatively, Turkish-speaking learners showed less difficulty identifying the anticausative pattern in Spanish because both Turkish and Spanish make use of an inchoative morpheme in the intransitive construction, whereas English speakers showed difficulty with the same pattern because in English there is no inchoative morpheme involved in the intransitive construction. Moreover, comparing Spanish speakers with Turkish speakers in learning English as a second language, the former learners performed better than the latter with regard to the causative pattern in English where a bare verb is used in the transitive construction, which is the same in Spanish.

Conversely, Turkish has two patterns with regard to the causative/inchoative alternation, i.e., anticausative vs. causative. In the anticausative pattern, the transitive construction has a morphologically simple verb, while the intransitive construction has a morphologically complex verb, consisting of a bare verb and an inchoative morpheme. In the causative pattern, on the other hand, the transitive construction has a
morphologically complex verb consisting of a bare verb and a causative morpheme, whereas the intransitive construction has a morphologically simple verb. Thus, Turkish speakers are expected to perform poorly on an English transitive construction such as *Ben melted the butter*, corresponding to the same construction with the causative pattern in Turkish, because these two languages differ in marking this construction. It is important to note that Turkish learners' performance on the transitive form in English with the causative pattern in their native language confirms the predictions made based on a transfer effect of morphological characteristics from their L1. The findings in Montrul's studies that L2 learners with different native languages transferred morphological properties from their L1 in evaluating unaccusative verbs in the target language are examined in this dissertation with two different L2 groups, i.e., Korean learners of English and English-speaking learners of Korean.

4.3. Class- vs. Pattern-based Transfer

Class-based Transfer

Korean distinguishes between two different classes of alternating unaccusative verbs—anticausative and causative. In the causative class the verb occurring in the intransitive form is basic (e.g., *nok-ta* 'melt'), while the verb used in the transitive form carries a causative suffix (e.g., *nok-i-ta* 'melt'). In the anticausative class, on the other hand, the verb occurring in the transitive form is basic (e.g., *yel-ta* 'open'), while the verb used in the intransitive form carries an anticausative suffix (e.g., *yel-li-ta* 'open').
The idea that morphology can be transferred from the native language to the interlanguage grammar proposed by Montrul could be explained by means of class-based transfer. Specifically, regarding Korean the concept of class-based transfer can be formulated as follows: if transfer takes place at the level of verb classes, Korean ESL learners are expected to treat unaccusative verbs in English differently depending on the class to which these verbs belong. Predictions made for Korean ESL learners based on class-based transfer are shown below:

Table 5. Predictions for Korean ESL learners

<table>
<thead>
<tr>
<th>Anticausative pattern (open, close, break, etc.)</th>
<th>Causative</th>
<th>Inchoative</th>
</tr>
</thead>
<tbody>
<tr>
<td>Accept</td>
<td>reject</td>
<td>accept</td>
</tr>
</tbody>
</table>

Pattern-based Transfer

In contrast to class-based transfer, pattern-based transfer is sensitive only to the existence of patterns or constructions, defined in terms of their structural properties and an associated grammatical meaning (in the sense of Goldberg 1995). On this view, then, having an NP V pattern in their native language that can carry the meaning of an uncaused process without the use of an inchoative morpheme (as in Elum-i nok-ass-ta 'the ice melted') would lead Korean ESL learners to expect that a comparable pattern will be acceptable in English. It is unimportant for pattern-based transfer that only certain verbs denoting an uncaused process can occur in this NP V pattern in Korean. Moreover, Korean ESL learners expect that a comparable pattern will be acceptable in English because there is an NP NP V pattern in Korean that can carry the meaning of a caused
process without the use of a causative morpheme (as in *Chelswu-ka mwun-ul yel-ess-ta* 'Chulsoo opened the door'). Here again, it is irrelevant that only certain verbs denoting a caused process can occur in this pattern in Korean.

This dissertation explores which, if either, of these approaches to transfer is correct. Two L2 groups are examined here, i.e., Korean learners of English and English-speaking learners of Korean. Korean is interesting because it is similar to Turkish in having two different patterns with alternating unaccusative verbs—anticausative and causative. The effect of having different patterns in their L1 on learning alternating unaccusative verbs in English by Korean speakers of English will be examined in the next chapter.
Chapter 5
ESL study

5.1. Introduction

In order to determine whether the presence of morphological characteristics to encode alternating unaccusative verbs in their L1 interferes with learning these verbs in the L2, Korean learners of English (ESL) are investigated in this study.

This study tests the idea of transfer of morphology put forth by Montrul (1999; 2001a; 2001b). It was shown in her study that Spanish-speaking learners of English accepted the ungrammatical\textsuperscript{8} intransitive form in English (e.g., \textit{The butter got melted}) for a spontaneous event, while rejecting the grammatical inchoative form (e.g., \textit{The butter melted}) for the same event. According to Montrul, the reason why these learners preferred the former form in English to the latter is because Spanish speakers might have treated \textit{get} in English as something analogous to the reflexive clitic \textit{se} used in an inchoative form in their language, shown in the following example:

\begin{enumerate}
\item a. Franco abrió la puerta. 'Frank opened the door.'
\item b. La puerta \textit{se} abrió. 'The door opened.'
\end{enumerate}

In addition, it was also shown that Spanish-speaking learners of Turkish performed differently from English-speaking learners of Turkish in identifying alternating unaccusative verbs in the target language. For example, Turkish has two different patterns for alternating unaccusative verbs: the verbs \textit{ açmak }'open', \textit{ kapamak}

\textsuperscript{8} Throughout this dissertation the term \textit{ungrammatical} is used for a construction which is either ill-formed (e.g., \textit{The girl got cried} or \textit{John cried the girl}) or inappropriate in a given context; for example, the sentence \textit{The butter got melted} is considered ungrammatical if used to describe a spontaneous event. Moreover, the sentence \textit{John made the door open} is also considered ungrammatical if used to describe a caused event.
'close', and *kirmak* 'break' in Turkish have the anticausative pattern where the anticausative suffix *-il* is used in the inchoative form, as in (2b).

(2) a. **Hirsiz pencere-yi kir-di.**
   thief window-acc break-past
   'The thief broke the window.'

   b. **Pencere kir-il-di.**
   window break- anticausative -past
   'The window broke.'

Unlike English and Spanish, however, Turkish has morphological causatives. Thus, other alternating verbs, such as *erimek* 'melt', *batmak* 'sink', and *ölmek* 'die', have causative morphology (the suffix *-ir*) on the causative form, as in (3a).

(3) a. **Düşman gemi-yi bat-[ir]-mis.**
   enemy ship-acc sink-caus -past
   'The enemy sank the ship.'

   b. **Gemi bat-mis.**
   ship sink-past
   'The ship sank.'

The results on change-of-state verbs of the anticausative pattern show that the English group was less accurate than the Spanish group at correctly accepting causative forms without causative morphology and inchoative forms with anticausative morphology. With respect to the ungrammatical sentences, the English speakers were also less accurate than the Spanish speakers at rejecting already causative roots with overt causative morphology, and at rejecting inchoatives without the anticausative morpheme.
On the other hand, Spanish-speaking learners were very accurate at correctly accepting grammatical forms and rejecting ungrammatical forms. According to Montrul (2001a), this response is expected because, unlike English, Spanish has the anticausative pattern with intransitive verbs, and, in general, does not allow zero-derived intransitive forms.

In this study, Montrul's claim that morphology can be transferred from native language to the interlanguage grammar is tested by examining the Korean learners' performance on alternating unaccusative verbs in English.

This study further explores the Korean learners' acquisition of unergative verbs in English, such as cry, laugh, sleep, etc., which alternate in transitivity in Korean, albeit with the help of a causative suffix. Thus, these verbs can appear in a morphological causative in Korean, while they occur in a syntactic causative in English. The purpose of investigating the ESL learners' acquisition of unergative verbs in English is to determine whether the learners could identify that these verbs disallow alternation in transitivity in the target language.

5.2. Issues

The main issue involved in this study has to do with the extent to which the morphological properties of verbs in L1 influence the acquisition of these verbs in L2. Specifically, the question revolves around how and whether L2 learners resolve the differences in morphological properties between an L1 and an L2.

This study tests the conclusions of Montrul's research (1999; 2001a; 2001b), in which L1 influence was shown in the linguistic domain of morphology in English, Spanish, and Turkish interlanguage grammars. Specifically, it seeks to determine
whether the same effect of transfer in morphology is also found with ESL and KSL learners. The object of the investigation involves different classes of verbs which (dis)allow the causative/inchoative alternation.

It has been assumed (Pinker 1989; Levin & Rappaport Hovav 1994) that the classes of verbs which participate or do not participate in this alternation are more or less identical in different languages. Thus, those verbs which allow the causative/inchoative alternation in English (i.e., *externally caused change-of-state verbs*), such as *break, open, melt, sink, roll*, etc., are also found to participate in the alternation in other languages. In addition, those unaccusative verbs which do not participate in the alternation in English, such as the verbs of (dis)appearance (e.g., *appear, disappear, vanish*, etc.) and directed motion verbs (e.g., *go, come*, etc.), are also found to disallow this alternation in other languages. Moreover, prototypical unergative verbs, such as *laugh, play, sleep, speak, dance*, etc., which do not participate in the alternation in English, generally disallow the alternation in other languages.

English and Korean behave similarly with respect to the alternating and nonalternating unaccusative verbs, i.e., the classes of verbs which alternate/do not alternate in transitivity are to a great extent the same in both languages when unaccusative verbs are concerned. Matters are a little more complicated, however. Aside from having the same type of verbs which participate in the causative/inchoative alternation (i.e., *externally caused change-of-state verbs*), English and Korean differ in terms of how they mark the verbs: in English verbs used in both the transitive and intransitive construction are morphologically unmarked, an example of a labile pattern (e.g., *John melted the butter/The butter melted*).
In contrast, in Korean there are two major patterns, anticausative and causative. In the anticausative pattern, the verb occurring in the intransitive construction bears an inchoative morpheme, while the verb appearing in the transitive construction is a non-derived verb. Conversely, in the causative pattern, the opposite is true: the verb used in the transitive construction has a causative morpheme attached to it, whereas the verb used in the intransitive construction is a non-derived verb. The following shows an example of each pattern:

**Anticausative**

    -nom door-acc open-past-dec
    'Mary opened the door.'

b. mwun-i yel-liess-ta.
    door-nom open-past-dec
    'The door opened.'

**Causative**

    -nom butter-acc melt-caus-past-dec
    'John melted the butter.'

b. pethe-ka nok-ass-ta.
    butter-nom melt-past-dec
    'The butter melted.'

Another difference between English and Korean lies in the fact that unergative verbs do not generally alternate in English, whereas some unergative verbs such as *nolta* 'play', *ketta* 'walk', *cata* 'sleep', etc., in Korean can alternate in transitivity, although a causative morpheme is required in the transitive construction.
5.3. Hypotheses and Predictions

The hypotheses tested in this study are based on the premise that Korean learners of English know that the same kinds of verbs participate (or do not participate) in the causative/inchoative alternation in different languages. The following hypotheses are examined in this study:

Hypothesis 1: Korean learners of English know that externally caused change-of-state verbs (e.g., open, close, melt, freeze, dry, etc.) in English allow the causative/inchoative alternation.

Hypothesis 2: Korean learners of English know that unergative verbs in English generally disallow alternation in transitivity.

If, however, the learners show difficulty identifying alternating unaccusative verbs in English, this difficulty presumably lies in the morphological characteristics of the verbs in their native language, and not in the argument structure of the verbs.

Furthermore, if, as shown in Montrul's studies (1999; 2001a; 2001b), L2 learners transfer in the domain of morphology when they identify alternating unaccusative verbs in the target language, the following predictions are expected for Korean learners of English:

Predictions: Alternating unaccusative verbs

Since Korean has two different patterns with alternating unaccusative verbs, i.e., anticausative and causative, Korean learners of English are expected to behave differently in assessing these verbs in English, depending on the pattern to which they belong. For example, they might accept the verbs open, close, etc., in lexical causatives but reject the inchoative counterparts in English because these verbs figure in the anticausative pattern
in their native language, in which the verb used in the transitive construction is a non-derived verb, while the verb used in the intransitive construction is a derived verb.

In contrast, the same learners might accept the verbs *melt, sink, etc.*, occurring in the intransitive construction but reject the causative counterparts in English because these verbs belong to the causative pattern in Korean, in which the verb used in the transitive construction is a derived verb, while the verb used in the intransitive construction is a non-derived one. These predictions are summarized in the following table:

Table 6. Predictions for Korean ESL learners

<table>
<thead>
<tr>
<th>Construction</th>
<th>Causative (Transitive)</th>
<th>Inchoative (Intransitive)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>gr/ ungr</td>
<td>example</td>
</tr>
<tr>
<td>Anticausative (open, close, break)</td>
<td>gr</td>
<td>John opened the door</td>
</tr>
<tr>
<td></td>
<td>ungr</td>
<td>John made the door open</td>
</tr>
<tr>
<td>Causative (melt, freeze, roll, etc.)</td>
<td>gr</td>
<td>Ben melted the butter</td>
</tr>
<tr>
<td></td>
<td>ungr</td>
<td>Ben made the butter melt</td>
</tr>
</tbody>
</table>

*The patterns listed here, i.e., anticausative and causative, are possible only for Korean, and not for English.*

5.4. Research Questions

This study attempts to answer the following questions:

Primary Questions
a. Do Korean learners of English know that alternating unaccusative verbs in English can appear in the transitive (lexical causative) and intransitive (inchoative) construction?
b. Do Korean learners of English know that unergative verbs in English cannot appear in the transitive (lexical causative), but can occur in the intransitive construction?

c. Can a transfer effect be found with alternating unaccusative verbs in English? For example, do Korean learners of English accept the lexical causative and reject the make-causative constructions for verbs like open, close, etc., while accepting the get-intransitive and rejecting the inchoative forms for the same verbs in English? Further, do they accept the make-causative and reject the lexical causative constructions for verbs like melt, freeze, roll, etc., while accepting the inchoative and rejecting the get-intransitive forms for the same verbs?

d. Can the overgeneralization occurrences shown in L1 acquisition also be found in L2 learning? More specifically, do Korean learners of English also make errors of transitivity by allowing sentences such as *Tim laughed the baby (cf. Tim made the baby laugh), overgeneralizing the alternation to verbs that disallow this alternation?

Secondary Questions

a. How are acceptability judgments affected by proficiency and grammaticality with respect to the transitive (causative) and intransitive (inchoative) construction in the anticausative pattern?

b. How are acceptability judgments affected by proficiency and grammaticality with respect to the transitive (causative) and intransitive (inchoative) construction in the causative pattern?
c. How are acceptability judgments affected by proficiency and grammaticality with respect to the transitive (causative) and intransitive (inchoative) construction with unergative verbs?

5.5. Experiment Design

5.5.1. Participants

The ESL learners are categorized into two different levels of proficiency, i.e., beginner-level and advanced learners. Seventy beginner-level and thirty-eight advanced learners participated in this study. In addition, twenty native speakers of English served as a comparison group. It is important to note that beginner-level ESL learners in this study, who are college students, are not true beginners, considering the fact that they had already learned English for at least 6 years in middle and high school.

The criteria used to divide learners into the different proficiency levels involve some major and minor factors: the major factors include the test score on the TOEFL and/or the TOEIC (currently commonly used in Korea in place of TOEFL), the score on a cloze test, and the length of stay in an English-speaking country. The minor factors include learners' status as an undergraduate or graduate student, learners' self-evaluation of their proficiency in English, and the students' proficiency based on the evaluation of the instructor who assisted in the implementation of this study. The table below illustrates a brief profile of the beginner-level learners (see Appendix I for more details):
Table 7. Profile of beginner-level learners

<table>
<thead>
<tr>
<th>Major Criteria</th>
<th>Score on cloze test</th>
<th>Score on TOEFL or TOEIC</th>
<th>Length of stay in an English-speaking country</th>
</tr>
</thead>
<tbody>
<tr>
<td>below 5 (zero for most of the learners)</td>
<td>no info available for most of the learners, or, when given, below the range of a good performance (i.e., 900 for TOEIC)</td>
<td>none or minimal for most of the learners</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Minor Criteria</th>
<th>Age &amp; Status</th>
<th>Learner's self-evaluation of proficiency in English</th>
<th>Instructor's evaluation of the learners' proficiency in English</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>20~25 — mostly undergraduate</td>
<td>poor or ok</td>
<td>poor for most of the learners</td>
</tr>
</tbody>
</table>

In contrast, the composition of the advanced learners is very different from that of the beginner-level learners. A brief profile of the advanced learners is illustrated in the following table (see Appendix I for more details):

Table 8. Profile of advanced learners

<table>
<thead>
<tr>
<th>Major Criteria</th>
<th>Score on cloze test</th>
<th>Score on TOEFL or TOEIC</th>
<th>Length of stay in an English-speaking country</th>
</tr>
</thead>
<tbody>
<tr>
<td>above 9</td>
<td>above 600 for TOEFL or above 900 for TOEIC</td>
<td>most of the learners had lived in an English-speaking country for a lengthy period</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Minor Criteria</th>
<th>Age &amp; Status</th>
<th>Learner's self-evaluation of proficiency in English</th>
<th>Instructor's evaluation of the learners' proficiency in English</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>20~25 — either undergraduate or graduate</td>
<td>good or very good</td>
<td>very good for most of the learners</td>
</tr>
</tbody>
</table>

As mentioned above, one of the important factors of categorizing learners into two different levels of proficiency involves the length of stay in an English-speaking country. The table below provides detailed information for advanced learners on the
length of stay in an English-speaking country as well as their scores on the TOEFL and/or TOEIC:

Table 9. Detailed information for advanced learners

<table>
<thead>
<tr>
<th>Length of stay in an English-speaking country</th>
<th>No of learners (38 in total)</th>
<th>Score</th>
<th>No of learners (38 in total)</th>
</tr>
</thead>
<tbody>
<tr>
<td>below 1 yr</td>
<td>5</td>
<td>TOEFL</td>
<td>above 260</td>
</tr>
<tr>
<td>1 ~ 2</td>
<td>3</td>
<td>(18 learners)</td>
<td>14</td>
</tr>
<tr>
<td>3 ~ 4</td>
<td>8</td>
<td>250 ~ 259</td>
<td>4</td>
</tr>
<tr>
<td>5 ~ 6</td>
<td>5</td>
<td>TOEIC²</td>
<td>above 950</td>
</tr>
<tr>
<td>7 ~ 8</td>
<td>6</td>
<td>(14 learners)</td>
<td>6</td>
</tr>
<tr>
<td>9 ~ 10</td>
<td>5</td>
<td>above 930</td>
<td>5</td>
</tr>
<tr>
<td>14 ~ 16</td>
<td>2</td>
<td>above 900</td>
<td>1</td>
</tr>
<tr>
<td>none</td>
<td>4</td>
<td>below 900</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td></td>
<td>no info on TOEFL/TOEIC</td>
<td>6</td>
</tr>
</tbody>
</table>

¹ A score of 260 on a computer-based TOFEL test is comparable to a score of 620 on a paper-based TOEFL test.
² A score of above 900 on TOEIC is considered to be good in terms of proficiency.

5.5.2. Task

In order to familiarize subjects with the task involved in this study they were first provided with a description of the task as well as instructions for the procedure. For example, they were told that the task involved a picture-judgment task, whereby they had to judge whether the sentence provided for a given picture is grammatical or ungrammatical. When doing that, they were told to judge both the meaning of the sentences and their appropriateness in context. They were further told that the task is about their feeling about certain sentences, and not necessarily about giving a right or wrong answer.

For the first task, i.e., a translation task, the learners were instructed to ask if they had difficulty translating a verb. The rationale behind this is that they would be unable to do the main task involving certain verbs if they did not know them. A booklet was given
to learners which contained an information sheet, a word-translation sheet, a cloze test, and the main experiments (experiments I and II) (see Appendix II for more detail). They were given enough time to finish the task, which took around forty minutes. For the main task, pictures and accompanying sentences for a caused event are given as below:

The picture above illustrates a caused event, where an agent is performing something on an object. Below the picture is a set of sentences, one grammatical (e.g., *Mary dried her hair*) and the other ungrammatical (e.g., *Mary made her hair dry*). Each sentence is accompanied by a number scale ranging from 1 to 5 (1 for least natural and 5 for most natural) and "don't know." Subjects are asked to mark a number on this scale.
Pictures were ordered randomly. Moreover, for some pictures a grammatical sentence is ordered first followed by an ungrammatical sentence, while for some other pictures an ungrammatical sentence comes first followed by a grammatical sentence.

Below is an example of a picture for a spontaneous event and accompanying sentences for that picture:

<table>
<thead>
<tr>
<th>Mary's hair got dried.</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>don't know</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mary's hair dried.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>don't know</td>
</tr>
</tbody>
</table>

The picture above shows a change of state or result, where only one participant is portrayed. Below the picture is a set of sentences, one grammatical (e.g., *Mary's hair dried*) and the other ungrammatical (e.g., *Mary's hair got dried*). Here again, subjects are asked to mark a number on this scale. Pictures are ordered randomly. For some pictures a grammatical sentence comes first and an ungrammatical sentence next, while for some
other pictures an ungrammatical sentence is ordered first followed by a grammatical sentence.

5.5.3. Test sentences

Since English does not employ a morphological encoding for verbs in both caused and spontaneous events, a syntactic causative (i.e., make-causative) was used for a caused event in addition to the lexical causative in order to manipulate grammatical and ungrammatical sentences. Moreover, for a spontaneous event, a construction with the verb get was used in addition to a construction with the inchoative verb. The following describes test sentences used in the experiment at hand in detail.

I. Alternating unaccusative verbs

The following examples were used for alternating unaccusative verbs: the first two were given for a caused event and the last two for a spontaneous event. With alternating unaccusative verbs in English the lexical causative rather than the make-causative is grammatical for a caused event, while for a spontaneous event the inchoative form is grammatical rather than the get-intransitive construction.

(6) a. James broke the glass. (grammatical)
    b. James made the glass break. (ungrammatical for a direct causation reading)
    c. The glass broke. (grammatical)
    d. The glass got broken. (ungrammatical for a spontaneous event reading)
II. Nonalternating unergative verbs

Unergative verbs cannot occur in a lexical causative in English, whereas they can in a syntactic causative. In terms of the intransitive construction, like alternating unaccusative verbs, the intransitive form with a non-derived verb is grammatical, whereas the construction with the verb *get* is ungrammatical for the stative event.

(7) a. Tom made the girl cry. (grammatical)
b. *Tom cried the girl. (ungrammatical)
c. The girl cried. (grammatical)
d. *The girl got cried. (ungrammatical)

5.5.4. Analysis

For a statistical analysis, for each pattern, a 1-way ANOVA was run to determine whether there is a significant difference in the acceptability and/or rejection of a specific construction among the various subject groups, i.e., beginner-level, advanced ESL learners, and the native speaker group. Further, a 3-way mixed ANOVA was run with repeated measures on two independent variables, i.e., grammaticality and transitivity. Once a 3-way interaction was shown significant for a pattern, indicating that a 2-way interaction (proficiency×transitivity) is different for the two levels of the grammaticality variable, i.e., grammatical vs. ungrammatical, a 2-way mixed ANOVA with repeated measures on the grammaticality variable was run to determine how the 2-way interaction differs, depending on whether grammatical or ungrammatical tokens are used. In addition, for the analysis at hand, responses given for "don't know" are excluded.
5.6. Results

In this section, results of the verb-translation test, the cloze-test, and the first main experiment are presented in that order.

5.6.1. Verb-translation test

The purpose of this task is to see whether learners know the verbs used in the main experiment. Learners were instructed to ask if they did not know certain verbs. Both beginner-level and advanced Korean learners were able to correctly translate all the verbs tested from English into Korean.

5.6.2. Cloze test

This test is used to determine the learners' proficiency. The text used here is taken from Jonz (1990), who argues for the legitimacy of a cloze test, by showing the comparability of different texts used for cloze tests by various researchers. The text used here has thirty blanks to fill in. An exact word criterion is used to get a score, i.e., words used in the original text should be given.

The cut-off points used for dividing learners into two different levels of proficiency are below five for beginner-level learners, and above nine for advanced learners. The cut-off points for advanced learners are made based on the scores obtained from native speakers of English, which were between eleven and twenty-two, showing a rather great variation. The following table illustrates the distribution of the learner and native speaker groups in terms of their performance on the cloze test:
Although somewhat artificial in nature, the cut-off points made for beginner-level and advanced learners here nonetheless perfectly coincide with other criteria used to determine the learners' proficiency, such as scores on the TOEFL and/or TOEIC, the length of stay in an English-speaking country, etc.

5.6.3. Main experiment

In the following, results of alternating unaccusative verbs are discussed first followed by those of unergative verbs.

I. Alternating Unaccusative Verbs

Alternating unaccusative verbs in English belong to a labile pattern in which verbs used both in the transitive and intransitive sentence have the same form. These verbs are examined separately, however, according to two different patterns that the learners have in their L1, i.e., anticausative and causative, to see whether they had treated them differently, depending on the pattern to which a verb belongs.

Anticausative Pattern

Results of the anticausative pattern to which verbs like open, close, and break in Korean belong are reported below. With these verbs the lexical causative form is grammatical in English for a caused event, whereas the make-causative form is
ungrammatical. In addition, for a spontaneous event the inchoative form is grammatical, whereas the get-intransitive form is ungrammatical. If Korean learners of English transferred from their L1, they would accept the lexical causative and reject the make-causative in the transitive sentence, while accepting the get-intransitive and rejecting the inchoative form in the intransitive sentence.

Table 11 below shows means and standard deviations on grammatical and ungrammatical sentences. Figure 1 depicts mean responses on transitive (causative) and intransitive (inchoative) forms for the anticausative pattern.
Table 11. Anticausative Pattern; Means, and Standard Deviations on Grammatical and Ungrammatical Sentences

<table>
<thead>
<tr>
<th>Verb Type</th>
<th>Beginner M</th>
<th>Beginner SD</th>
<th>Advanced M</th>
<th>Advanced SD</th>
<th>Native M</th>
<th>Native SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Causative</td>
<td>4.70</td>
<td>0.13</td>
<td>4.85</td>
<td>0.26</td>
<td>4.85</td>
<td>0.17</td>
</tr>
<tr>
<td>*Causative (make)</td>
<td>2.95</td>
<td>0.27</td>
<td>2.95</td>
<td>0.32</td>
<td>2.37</td>
<td>0.67</td>
</tr>
<tr>
<td>Inchoative</td>
<td>3.53</td>
<td>0.36</td>
<td>4.10</td>
<td>0.18</td>
<td>4.88</td>
<td>0.03</td>
</tr>
<tr>
<td>*Inchoative (get)</td>
<td>4.14</td>
<td>0.33</td>
<td>3.54</td>
<td>0.41</td>
<td>2.62</td>
<td>0.43</td>
</tr>
</tbody>
</table>

Anticausative Pattern
(corresponding Korean intransitive verb requires an inchoative morpheme)

As shown in Figure 1, grammatical transitive (lexical causative) constructions are strongly accepted by both the native speaker and learner groups. (I will consider a mean score above 3 to indicate acceptance by the learners and a mean score below 3 to indicate rejection. In addition, the mean score 3 is interpreted as uncertainty on the learners' part.) As for the ungrammatical make-causative constructions, both beginner-level and advanced learners seem uncertain about these constructions, whereas the native speaker group accepted them less readily than the learner group.

Figure 1 Mean responses on causative and inchoative forms.

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As for the results of the inchoative forms in the anticausative pattern, both the native speaker and learner groups correctly accepted them. There is a difference, however, in the acceptance rates among the three groups: beginner-level learners accepted these forms less than advanced learners, and advanced learners less than the native speaker group. Results of a 1-way ANOVA showed that all subject groups were significantly different from each other (Tukey, \( p < .05 \)). As for the get-intransitive sentences, both beginner-level and advanced learners incorrectly accepted these sentences, whereas the native speaker group accepted them less readily than the learner group. Results of a 1-way ANOVA also revealed that the various subject groups were significantly different from each other (Tukey, \( p < .05 \)).

In sum, beginner-level and advanced learners seem to behave in a similar fashion when considering their acceptance and/or rejection of the four different construction types, i.e., grammatical and ungrammatical transitive (causative) as well as grammatical and ungrammatical intransitive (inchoative) forms. For example, both groups of learners did well on the grammatical transitive and intransitive constructions, but did poorly on the ungrammatical transitive and intransitive constructions.

The following table presents the significant effects in the 3-way ANOVA for the anticausative pattern:

<table>
<thead>
<tr>
<th>3-way ANOVA</th>
<th>F Value</th>
<th>df</th>
<th>Pr &gt; F</th>
</tr>
</thead>
<tbody>
<tr>
<td>Main effect</td>
<td>grammaticality</td>
<td>175.90</td>
<td>(1, 125)</td>
</tr>
<tr>
<td>2-way interactions</td>
<td>grammaticality×proficiency</td>
<td>23.67</td>
<td>(2, 125)</td>
</tr>
<tr>
<td></td>
<td>transitivity×grammaticality</td>
<td>44.18</td>
<td>(1, 125)</td>
</tr>
<tr>
<td>3-way interaction</td>
<td>trans×gram×proficiency</td>
<td>10.36</td>
<td>(2, 125)</td>
</tr>
</tbody>
</table>
A 3-way ANOVA shows that there is only one statistically significant main effect for grammaticality (meangram = 26.91; meanungram = 18.57). In addition, a 2-way interaction (grammaticality x proficiency) is significant (beginner (meangram-meanungram) = 1.14; advanced (meangram-meanungram) = 2.46; control (meangram-meanungram) = 4.74).

Another 2-way interaction (transitivity x grammaticality) is also shown to be significant (grammatical (meantran-meanintran) = 1.89; ungrammatical (meantran-meanintran) = -2.03).

Moreover, the 3-way interaction (transitivity x grammaticality x proficiency) turns out to be significant (beginner (meangram(tran-intran)-meanungram(tran-intran)) = 2.36; advanced (meangram(tran-intran)-meanungram(tran-intran)) = 1.34; control (meangram(tran-intran)-meanungram(tran-intran)) = 0.22).

The fact that the 3-way interaction is significant indicates that the 2-way interaction (transitivity x grammaticality) is not the same for the different subject groups, i.e., beginner-level, advanced ESL learners, and the native speaker group. This is illustrated in the following graphs:

Graph 1. Interaction effects for the learner and native speaker groups
As shown in the graphs above, the difference between grammatical and ungrammatical sentences is more or less the same across the different subject groups, i.e., beginner-level, advanced ESL learners, and the native speaker group, when considering a transitive construction. On the other hand, the difference between grammatical and ungrammatical sentences varies considerably across the different subject groups, when taking an intransitive construction into account. It appears that the variable of grammaticality interacts with the variable of transitivity especially for the learner group.

To explicate the 3-way interaction effect, I chose to examine the different patterns of the 2-way interaction effect at different levels of the third independent variable. Therefore, subsequent 2-way ANOVA was conducted for each of the subject groups. The statistically significant results are summarized in the table below.

<table>
<thead>
<tr>
<th>Table 13. 2-way ANOVA for anticausative pattern</th>
</tr>
</thead>
<tbody>
<tr>
<td>Beginner-level learners</td>
</tr>
<tr>
<td>Main effect grammaticality</td>
</tr>
<tr>
<td>2-way interaction grammaticality x transitivity</td>
</tr>
<tr>
<td>Advanced learners</td>
</tr>
<tr>
<td>Main effect grammaticality</td>
</tr>
<tr>
<td>2-way interaction grammaticality x transitivity</td>
</tr>
<tr>
<td>Native speakers</td>
</tr>
<tr>
<td>Main effect grammaticality</td>
</tr>
</tbody>
</table>

At the beginner level, it is clear that grammaticality has a significantly stronger impact on acceptability judgement with transitive constructions than with intransitive constructions. At the advanced level, the same pattern holds. However, for native speakers, the effect of grammaticality is consistent for both transitive and intransitive constructions. In other words, grammaticality elicits higher acceptability judgements, regardless of whether a construction is transitive or not.
Causative Pattern

Verbs like *melt*, *freeze*, etc., in English belong to the causative pattern in Korean, in which the verb used in the transitive construction is a derived verb, and the verb used in the intransitive construction is a non-derived verb. With these verbs, the lexical causative form is grammatical in English for a caused event and the *make*-causative form is ungrammatical. In addition, for a spontaneous event the inchoative form is grammatical and the *get*-intransitive form is ungrammatical. In terms of a transfer effect with these verbs, Korean learners are expected to reject the lexical causative and accept the *make*-causative in the transitive construction. In addition, they are expected to accept the inchoative and reject the *get*-intransitive form in the intransitive construction.

Results of the causative pattern are presented below. Table 14 shows means and standard deviations on grammatical and ungrammatical sentences. Figure 2 demonstrates mean responses on transitive (causative) and intransitive (inchoative) forms.
Table 14. Causative Pattern; Means, and Standard Deviations on Grammatical and Ungrammatical Sentences

<table>
<thead>
<tr>
<th>Verb Type</th>
<th>Beginner</th>
<th></th>
<th>Advanced</th>
<th></th>
<th>Native</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>M  SD</td>
<td>M  SD</td>
<td>M  SD</td>
<td>M  SD</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Causative</td>
<td>4.12 0.41</td>
<td>4.66 0.35</td>
<td>4.71 0.18</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>*Causative (make)</td>
<td>3.87 0.20</td>
<td>3.55 0.64</td>
<td>2.90 0.81</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Inchoative</td>
<td>3.49 0.39</td>
<td>4.18 0.59</td>
<td>4.79 0.15</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>*Inchoative (get)</td>
<td>3.88 0.45</td>
<td>3.33 0.69</td>
<td>2.28 0.69</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Figure 2 Mean responses on causative and inchoative forms.

In Figure 2, results of the grammatical transitive (lexical causative) sentences show that both the native speaker and learner groups correctly accepted them, although beginner-level learners accepted them less readily than advanced learners and the native speakers. A 1-way ANOVA shows that advanced learners and the native speaker group were not significantly different from each other, while these two groups of subjects were significantly different from the beginner-level learners (Tukey, \( p < .05 \)). As for the ungrammatical *make*-causative sentences, the learner group incorrectly accepted them,
while the native speakers seem somewhat unsure, neither rejecting nor accepting them. A 1-way ANOVA reveals that only the beginner-level learners and the native speaker group were significantly different from each other (Tukey, \( p < .05 \)).

Moreover, results of the inchoative forms show that both the native speaker and learner groups correctly accepted them, although beginner-level learners accepted them less readily than advanced learners, and advanced learners less readily than the native speakers. It is shown that these different groups of subjects were significantly different from each other (Tukey, \( p < .05 \)). As for the get-intransitive sentences, the learner group incorrectly accepted them, whereas the native speaker group accepted them less readily than the learner group. Here again, the different groups of subjects were significantly different from each other (Tukey, \( p < .05 \)). Comparing the inchoative to the get-intransitive form, beginner-level learners accepted more of the latter than of the former.

In sum, there is a similarity in the response pattern between beginner-level and advanced learners: both groups of learners accepted all construction types tested, i.e., grammatical and ungrammatical transitive, as well as grammatical and ungrammatical intransitive sentences. The difference between these learner groups lies in the fact that the advanced learners performed somewhat better than beginner-level learners by accepting grammatical transitive and intransitive patterns and rejecting ungrammatical transitive and intransitive constructions more readily. Moreover, beginner-level learners accepted ungrammatical intransitive constructions more readily than their grammatical counterparts.

As for the native speaker group, they performed well both on grammatical and ungrammatical transitive patterns and on grammatical and ungrammatical intransitive
constructions. However, the results of the ungrammatical *make*-causative constructions seem to indicate their uncertainty about these constructions.

The following table presents the significant effects in the 3-way ANOVA for the causative pattern:

<table>
<thead>
<tr>
<th>3-way ANOVA</th>
<th>F Value</th>
<th>df</th>
<th>Pr &gt; F</th>
</tr>
</thead>
<tbody>
<tr>
<td>Main effects</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>transitivity</td>
<td>37.21</td>
<td>(1, 125)</td>
<td>&lt;.0001</td>
</tr>
<tr>
<td>grammaticality</td>
<td>125.41</td>
<td>(1, 125)</td>
<td>&lt;.0001</td>
</tr>
<tr>
<td>2-way interaction</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>grammaticality×proficiency</td>
<td>51.72</td>
<td>(2, 125)</td>
<td>&lt;.0001</td>
</tr>
<tr>
<td>3-way interaction</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>trans×gram×proficiency</td>
<td>7.08</td>
<td>(2, 125)</td>
<td>&lt;.0012</td>
</tr>
</tbody>
</table>

A 3-way ANOVA shows that there are statistically significant main effects for transitivity (meantran = 23.81; meanintran = 21.95) and grammaticality (meangram = 25.95; meanungram = 19.81). In addition, a 2-way interaction (grammaticality×proficiency) is significant (beginner(meangram-meanungram) = −0.14; advanced(meangram-meanungram) = 1.96; control(meangram-meanungram) = 4.32). Moreover, the 3-way interaction (transitivity×grammaticality×proficiency) turns out to be significant (beginner(meangram(tran-intran)-meanungram(tran-intran)) = 0.64; advanced(meangram(tran-intran)-meanungram(tran-intran)) = 0.26; control(meangram(tran-intran)-meanungram(tran-intran)) = −0.7).

The fact that the 3-way interaction is significant indicates that the 2-way interaction (transitivity×grammaticality) is not the same for beginner-level, advanced ESL learners, and the native speaker group. The following graphs illustrate this:
The difference between grammatical and ungrammatical sentences varies across the different subject groups, i.e., beginner-level, advanced learners, and the native speaker group, for both transitive and intransitive constructions. It appears that the variable of grammaticality interacts with the variable of transitivity for both beginner-level learners and the native speaker group. To explicate the 3-way interaction effect, the different patterns of the 2-way interaction effect are examined at different levels of the third independent variable. Thus, subsequent 2-way ANOVA was conducted for each of the subject groups. The statistically significant results are summarized in the table below.

Table 16. 2-way ANOVA for causative pattern

<table>
<thead>
<tr>
<th>Subject Group</th>
<th>Type of Effect</th>
<th>F Value</th>
<th>df</th>
<th>Pr &gt; F</th>
</tr>
</thead>
<tbody>
<tr>
<td>Beginner-level learners</td>
<td>Main effect  transitivity</td>
<td>24.70</td>
<td>(1, 69)</td>
<td>&lt;.0001</td>
</tr>
<tr>
<td></td>
<td>2-way interaction  grammaticality×transitivity</td>
<td>13.29</td>
<td>(1, 69)</td>
<td>0.0005</td>
</tr>
<tr>
<td>Advanced learners</td>
<td>Main effects  grammaticality</td>
<td>31.12</td>
<td>(1, 37)</td>
<td>&lt;.0001</td>
</tr>
<tr>
<td></td>
<td>2-way interaction  grammaticality×transitivity</td>
<td>17.89</td>
<td>(1, 37)</td>
<td>0.0001</td>
</tr>
<tr>
<td>Native speakers</td>
<td>Main effects  grammaticality</td>
<td>119.87</td>
<td>(1, 19)</td>
<td>&lt;.0001</td>
</tr>
<tr>
<td></td>
<td>2-way interaction  grammaticality×transitivity</td>
<td>7.17</td>
<td>(1, 19)</td>
<td>0.0149</td>
</tr>
<tr>
<td></td>
<td>Transitivity</td>
<td>9.55</td>
<td>(1, 19)</td>
<td>0.0060</td>
</tr>
</tbody>
</table>
At the beginner-level, grammaticality has a significantly stronger effect on acceptability judgment with the transitive constructions than with the intransitive constructions. At the advanced level, the effect of grammaticality is consistent for both transitive and intransitive constructions. In other words, grammaticality elicits higher acceptability judgements, regardless of whether a construction is transitive or not. At the native speaker level, grammaticality has a significantly stronger effect on acceptability judgment with the intransitive constructions than with the transitive forms.

II. Unergative Verbs

Unergative verbs in English cannot appear in the lexical causative pattern (e.g., *The comedian laughed the crowd), but can in the syntactic causative form (e.g., The comedian made the crowd laugh). In addition, they appear in a non-derived verb form in the intransitive construction (e.g., The crowd laughed). Unlike English, some unergative verbs in Korean such as laugh, cry, sleep, etc., can appear in the morphological causative form (e.g., Khomidien-i (comedian-nom) kwancwung-ul (crowd-acc) wus-ki-ess-ta (laugh-caus-past-dec) 'The comedian made the crowd laugh') (alternating unergative verbs). In addition, unergative verbs in Korean appear in a non-derived verb form in the intransitive construction (e.g., Kwancwung-i (crowd-nom) wus-ess-ta (laugh-past-dec) 'The crowd laughed'), like in English.

Table 17 below shows means and standard deviations for grammatical and ungrammatical sentences. Figure 3 displays mean responses for transitive (causative) and intransitive forms.
Table 17. Alternating Unergative Verbs; Means, and Standard Deviations on Grammatical and Ungrammatical Sentences

<table>
<thead>
<tr>
<th>Verb Type</th>
<th>Beginner</th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>M</td>
<td>SD</td>
<td>M</td>
<td>SD</td>
<td>M</td>
<td>SD</td>
<td></td>
</tr>
<tr>
<td>Causative (make)</td>
<td>4.67</td>
<td>0.03</td>
<td>4.73</td>
<td>0.22</td>
<td>4.54</td>
<td>0.49</td>
<td></td>
</tr>
<tr>
<td>*Causative</td>
<td>1.75</td>
<td>0.25</td>
<td>1.82</td>
<td>0.69</td>
<td>1.40</td>
<td>0.61</td>
<td></td>
</tr>
<tr>
<td>Inchoative</td>
<td>4.42</td>
<td>0.29</td>
<td>4.90</td>
<td>0.15</td>
<td>4.90</td>
<td>0.00</td>
<td></td>
</tr>
<tr>
<td>*Inchoative (get)</td>
<td>3.16</td>
<td>0.26</td>
<td>1.41</td>
<td>0.20</td>
<td>1.09</td>
<td>0.05</td>
<td></td>
</tr>
</tbody>
</table>

Alternating Unergatives
(corresponding Korean transitive verb has a causative morpheme)

Figure 3 Mean responses on transitive and intransitive sentences.

As shown in Figure 3, both the learner and native speaker group correctly accepted the grammatical make-causative (e.g., Tim made the baby laugh) while correctly rejecting the ungrammatical causative construction with a non-derived verb (e.g., Tim laughed the baby).

As for the grammatical intransitive sentence (e.g., The baby laughed), both the native speaker and learner groups correctly accepted it. Results of a 1-way ANOVA on this construction showed that the advanced learners and the native speaker group were not significantly different from each other, while these two groups of subjects were...
significantly different from the beginner-level learners (Tukey, $p < .05$). Concerning the ungrammatical intransitive (e.g., *The baby got laughed*), both the advanced learners and the native speaker group correctly rejected it, whereas beginner-level learners did not reject it as readily as the other groups. Here again, the advanced learners and the native speaker group were not significantly different from each other, while these two groups of subjects were significantly different from the beginner-level learners (Tukey, $p < .05$).

The following table presents the significant effects in the 3-way ANOVA for the alternating unergative pattern:

<table>
<thead>
<tr>
<th>3-way ANOVA</th>
<th>F Value</th>
<th>df</th>
<th>Pr &gt; F</th>
</tr>
</thead>
<tbody>
<tr>
<td>Main effects</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>proficiency</td>
<td>16.22</td>
<td>(2, 125)</td>
<td>&lt;.0001</td>
</tr>
<tr>
<td>transitivity</td>
<td>9.10</td>
<td>(1, 125)</td>
<td>&lt;.0031</td>
</tr>
<tr>
<td>grammaticality</td>
<td>1021.66</td>
<td>(1, 125)</td>
<td>&lt;.0001</td>
</tr>
<tr>
<td>2-way interactions</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>transitivity×proficiency</td>
<td>20.96</td>
<td>(2, 125)</td>
<td>&lt;.0001</td>
</tr>
<tr>
<td>grammaticality×proficiency</td>
<td>28.15</td>
<td>(2, 125)</td>
<td>&lt;.0001</td>
</tr>
<tr>
<td>3-way interaction</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>trans×gram×proficiency</td>
<td>34.69</td>
<td>(2, 125)</td>
<td>&lt;.0001</td>
</tr>
</tbody>
</table>

A 3-way ANOVA shows that there are statistically significant main effects for proficiency (beginner = 14; advanced = 12.86; control = 11.93), transitivity (mean _tran_ = 18.91; mean _intran_ = 19.88), and grammaticality (mean _gram_ = 28.16; mean _ungram_ = 10.63). In addition, a 2-way interaction (transitivity×proficiency) is significant (beginner (mean _tran_-mean _intran_ ) = -1.16; advanced (mean _tran_-mean _intran_ ) = 0.24; control (mean _tran_-mean _intran_ ) = -0.05). Another 2-way interaction (grammaticality×proficiency) is also shown to be significant (beginner (mean _gram_-mean _ungram_ ) = 4.18; advanced (mean _gram_-mean _ungram_ ) = 6.4; control (mean _gram_-mean _ungram_ ) = 6.95).
Moreover, the 3-way interaction (transitivity x grammaticality x proficiency) turns out to be significant as well (beginner (meangram(tran-intran)-meanungram(tran-intran)) = 1.66; advanced (meangram(tran-intran)-meanungram(tran-intran)) = -0.58; control (meangram(tran-intran)-meanungram(tran-intran)) = -0.67).

The fact that the 3-way interaction is significant indicates that the 2-way interaction (transitivity x grammaticality) is not the same for beginner-level, advanced ESL learners, and the native speaker group. This is illustrated in the following graphs:

Graph 3. 2-way interaction for the learner and native speaker groups

As shown in the graphs above, the difference between grammatical and ungrammatical sentences is more or less the same for a transitive construction across the different subject groups, i.e., beginner-level, advanced ESL learners, and the native speaker group. On the other hand, the difference between grammatical and ungrammatical sentences varies for an intransitive construction across the different
subject groups. It appears that the variable of grammaticality interacts with the variable of transitivity for both the learner and native speaker groups.

To explicate the 3-way interaction effect, the different patterns of the 2-way interaction effect were examined at different levels of the third independent variable. Therefore, subsequent 2-way ANOVA was conducted for each of the subject groups. The statistically significant results are summarized in the table below.

Table 19. 2-way ANOVA for alternating unergative pattern

<table>
<thead>
<tr>
<th>Subject Group</th>
<th>F Value</th>
<th>df</th>
<th>Pr &gt; F</th>
</tr>
</thead>
<tbody>
<tr>
<td>Beginner-level learners</td>
<td>277.96</td>
<td>(1, 68)</td>
<td>&lt;.0001</td>
</tr>
<tr>
<td>Main effects</td>
<td>56.99</td>
<td>(1, 68)</td>
<td>&lt;.0001</td>
</tr>
<tr>
<td>2-way interaction</td>
<td>59.64</td>
<td>(1, 68)</td>
<td>&lt;.0001</td>
</tr>
<tr>
<td>Advanced learners</td>
<td>559.72</td>
<td>(1, 37)</td>
<td>&lt;.0001</td>
</tr>
<tr>
<td>Main effect</td>
<td>8.65</td>
<td>(1, 37)</td>
<td>0.0056</td>
</tr>
<tr>
<td>2-way interaction</td>
<td>40.62</td>
<td>(1, 19)</td>
<td>&lt;.0001</td>
</tr>
<tr>
<td>Native speakers</td>
<td>1029.73</td>
<td>(1, 19)</td>
<td>&lt;.0001</td>
</tr>
<tr>
<td>Main effect</td>
<td>1029.73</td>
<td>(1, 19)</td>
<td>&lt;.0001</td>
</tr>
<tr>
<td>2-way interaction</td>
<td>40.62</td>
<td>(1, 19)</td>
<td>&lt;.0001</td>
</tr>
</tbody>
</table>

At the beginner level, it is clear that grammaticality has a significantly stronger impact on acceptability judgement with transitive constructions than with intransitive constructions. At both the advanced learner and native speaker levels, on the other hand, grammaticality has a significantly stronger impact on acceptability judgement with intransitive constructions than with transitive constructions.
5.7. Discussion

I turn now to one of the central questions of this dissertation—whether the performance of the L2 learners can be explained in terms of transfer. It is important to distinguish at the outset between two potentially different manifestations of this phenomenon—class-based transfer and pattern-based transfer.

Class-based Transfer

As we have seen throughout this dissertation, Korean distinguishes between two different classes of alternating unaccusative verbs. On the one hand, there are verbs such as *nok-ta* 'melt' whose intransitive form is basic and whose transitive form (*nok-i-ta*) carries a causative suffix. (I have been referring to this as the 'causative' class.) On the other hand, there are verbs such as *yel-ta* 'open' whose transitive form is basic and whose intransitive form (*yel-li-ta*) carries an anticausative suffix. (I have been referring to such verbs as 'anticausative'.)

Now, if transfer takes place at the level of verb classes, we expect that our Korean ESL learners will treat English verbs whose counterparts in Korean belong to the causative class differently from English verbs whose Korean counterparts belong to the anticausative class. Montrul's (2001b) findings seem to suggest that something like this can happen. For example, it was shown in her study that Spanish-speaking learners of English were less accurate than Turkish learners of English at correctly identifying the inchoative forms, i.e., Spanish learners rejected zero-derived inchoatives and preferred the lexicalization of the inchoative meaning in the verb *get* (e.g., *the window got broken*).
Note that Turkish has two different patterns for alternating unaccusative verbs, i.e., anticausative and causative. Consider the following examples of each pattern:

**Anticausative pattern**

    thief window-acc break-past  
    'The thief broke the window.'

b. Pencere kir- **il**-di.  
    window break- **anticausative**-past  
    'The window broke.'

**Causative pattern**

(9) a. Düsman gemi-yi bat- **ir**-mis.  
    enemy ship-acc sink- **caus**-past  
    'The enemy sank the ship.'

b. Gemi bat-mis.  
    ship sink-past  
    'The ship sank.'

In the anticausative pattern in Turkish a non-derived verb appears in the transitive construction, while a derived verb consisting of a bare verb and an inchoative morpheme occurs in the intransitive construction. In the causative pattern, on the other hand, a derived verb consisting of a bare verb and a causative morpheme appears in the transitive construction, while a non-derived verb occurs in the intransitive construction.

Compared to Turkish, Spanish has only one major pattern, i.e., anticausative, in which a reflexive clitic *se* is used in the intransitive construction, as shown below:

(10) a. Franco abrió la puerta. 'Frank opened the door.'

b. La puerta [**se**] abrió. 'The door opened.'

Thus, the Spanish-speaking learners' poor performance on the intransitive construction in English with alternating unaccusative verbs reflects the fact that in
Spanish a reflexive clitic *se* is used in this construction. At the same time, the Turkish learners' better performance on the intransitive construction is based on the fact that in Turkish a non-derived verb occurs in this construction in the causative pattern, as in English.

**Pattern-based Transfer**

Class-based transfer must be distinguished from pattern-based transfer, which is sensitive only to the existence of patterns or constructions, defined in terms of their structural properties and an associated grammatical meaning (in the sense of Goldberg 1995). On this view, then, the existence of a NP V pattern in Korean that can carry the meaning of an uncaused process without the use of an inchoative morpheme (as in *Elum-i nok-ass-ta* 'the ice melted') leads learners to expect that a comparable pattern will be acceptable in English. No heed is paid to the fact that only certain verbs denoting an uncaused process can occur in this pattern in Korean. Moreover, the existence of a NP NP V pattern in Korean that can carry the meaning of a caused process without the use of a causative morpheme (as in *Chelswu-ka mwun-ul yel-ess-ta* 'Chulsoo opened the door') leads learners to expect that a comparable pattern will be acceptable in English. Here again, it is unimportant that only certain verbs denoting a caused process can occur in this pattern in Korean.

Which, if either, of these approaches to transfer is correct? I will try to answer this question by measuring the two alternatives against the data that I have collected for the anticausative and causative patterns. (There is no point considering the unergative
patterns at this point, since my design did not include any class-based contrasts for this sort of construction.) I will begin with the hypothesis of class-based transfer.

5.7.1. Can class-based transfer account for the facts?

The fate of the class-based account can be determined by considering the ESL learners' performance on the anticausative and causative patterns. I will begin by considering transitive constructions, and then turn my attention to intransitive patterns.

The transitive constructions

First, consider the following table which illustrates the predictions made for Korean learners of English, beginner-level and advanced combined, according to class-based transfer along with these learners' performance on transitive constructions for both the anticausative and causative patterns:

<table>
<thead>
<tr>
<th>Construction</th>
<th>Pattern</th>
<th>gr/ ungr</th>
<th>Example</th>
<th>Prediction</th>
<th>Performance</th>
<th>Prediction (met or not)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Anticausative Pattern</td>
<td>gr</td>
<td>John opened the door</td>
<td>accept</td>
<td>accept</td>
<td>met</td>
</tr>
<tr>
<td></td>
<td></td>
<td>ungr</td>
<td>John made the door open</td>
<td>reject</td>
<td>unclear</td>
<td>unclear</td>
</tr>
<tr>
<td></td>
<td>Causative Pattern</td>
<td>gr</td>
<td>Ben melted the butter</td>
<td>reject</td>
<td>accept</td>
<td>not met</td>
</tr>
<tr>
<td></td>
<td></td>
<td>ungr</td>
<td>Ben made the butter melt</td>
<td>accept</td>
<td>accept</td>
<td>met</td>
</tr>
</tbody>
</table>

*Both beginner-level and advanced learners accepted this construction. Throughout this section I have reported the performance of beginner-level and advanced learners combined, since they did not differ in terms of acceptance or rejection of a construction. If there was a difference, it rather lay in the rate of acceptance or rejection; for example, the advanced learners accepted the grammatical transitive form with the causative pattern (e.g., *Ben melted the butter*) more readily than the beginner-level learners.*
Let us now look at the predictions based on class-based transfer for the transitive constructions with the anticausative pattern. From a class-based transfer point of view, ESL learners are expected to accept the grammatical transitive construction and reject the ungrammatical one because in Korean a non-derived verb (e.g., *yel-ta* 'open') occurs in the transitive construction, as in English. However, when looking at the ESL learners' performance on the transitive constructions with the anticausative pattern, we find that they accepted the grammatical transitive form on the one hand, while showing uncertainty with the ungrammatical form on the other.

Note that a class-based transfer account for the anticausative pattern could not work if the learners' performance meets predictions only on one type of transitive constructions, be it grammatical or ungrammatical. Hence, I will argue that ESL learners are not influenced by class-based transfer in identifying transitive constructions with the anticausative pattern, since they failed to reject the ungrammatical transitive construction in English (e.g., *John made the door open*) as readily as expected.

Let us turn now to the causative pattern. Here, as far as the predictions made by class-based transfer are concerned, ESL learners are expected to reject the grammatical transitive construction and accept the ungrammatical one. This is because in Korean a derived verb consisting of a bare verb and a causative morpheme (e.g., *nok-i-ta* 'melt') occurs in the transitive construction, unlike in English. However, when examining the learners' performance on both grammatical and ungrammatical transitive constructions with the causative pattern, we find that ESL learners accepted both of these constructions.

Recall that a class-based transfer account could work for the causative pattern only when the learners' performance on both grammatical and ungrammatical transitive
constructions meets predictions. As it stands, however, it is difficult to argue that ESL learners are influenced by class-based transfer in identifying transitive constructions with the causative pattern, because they failed to reject the grammatical transitive construction in English (e.g., *Ben melted the butter*).

In conclusion, considering both anticausative and causative patterns, I claim that a class-based transfer account cannot explain the ESL learners' performance on transitive forms with both of these patterns. Let us now move on to intransitive constructions.

The intransitive constructions

Consider first the following table which illustrates the predictions made for Korean learners of English according to class-based transfer along with these learners' performance on intransitive constructions for both the anticausative and causative patterns:

<table>
<thead>
<tr>
<th>Construction Pattern</th>
<th>Anticausative Pattern</th>
<th>Causative Pattern</th>
</tr>
</thead>
<tbody>
<tr>
<td>gr/ gr</td>
<td>The door opened</td>
<td>The butter melted</td>
</tr>
<tr>
<td>ungr</td>
<td>The door got opened</td>
<td>The butter got</td>
</tr>
<tr>
<td></td>
<td></td>
<td>melted</td>
</tr>
</tbody>
</table>

Let us first look at the predictions based on class-based transfer for the intransitive constructions with the anticausative pattern. From a class-based transfer point of view, ESL learners are expected to reject the grammatical intransitive
construction and accept the ungrammatical one because in Korean a derived verb consisting of a bare verb and an inchoative morpheme (e.g., *yel-li-ta* 'open') occurs in the intransitive construction. However, when examining the learners' performance on both grammatical and ungrammatical intransitive constructions with the anticausative pattern, we find that they accepted both of these constructions. Thus, the same reasoning given earlier for the transitive constructions applies here, namely that a class-based transfer account could work only if the learners' performance on both grammatical and ungrammatical intransitive constructions meets predictions. As a result, ESL learners did not appear to have been influenced by class-based transfer in identifying intransitive constructions with the anticausative pattern, since they failed to reject the grammatical intransitive construction in English (e.g., *The door opened*).

Let us now examine the causative pattern. As far as the predictions based on class-based transfer for this pattern are concerned, ESL learners are expected to accept the grammatical intransitive construction and reject the ungrammatical one because in Korean a non-derived verb (e.g., *nok-ta* 'melt') occurs in the intransitive construction, like in English. However, when looking at the learners' performance on the causative pattern, they accepted both grammatical and ungrammatical intransitive constructions with this pattern. Thus, following the same reasoning given for the anticausative pattern whereby class-based transfer could work only when the learners had performed as predicted on both grammatical and ungrammatical intransitive constructions, I conclude that ESL learners did not seem to have been influenced by class-based transfer because they failed to reject the ungrammatical intransitive construction in English (e.g., *The butter got melted*).
In conclusion, I argue that a class-based transfer account cannot explain the ESL learners' performance on intransitive constructions with both anticausative and causative patterns. Moreover, considering both transitive and intransitive constructions with both anticausative and causative patterns, I claim that class-based transfer is not the answer for explaining the ESL learners' performance on these constructions. I turn now to the alternative pattern-based transfer account.

5.7.2. Can pattern-based transfer account for the facts?

In this section, I will present the ESL learners' performance on transitive and intransitive constructions with both anticausative and causative patterns, and the alternating unergative pattern in that order, along with an alternative pattern-based transfer account. Let us look at the transitive constructions first.

The transitive constructions

Consider first the following table which shows the ESL learners' performance on transitive constructions for both the anticausative and causative patterns:

<table>
<thead>
<tr>
<th></th>
<th>gr/ungr</th>
<th>Example</th>
<th>Performance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Anticausative Pattern</td>
<td>gr</td>
<td>John opened the door</td>
<td>accept</td>
</tr>
<tr>
<td></td>
<td>ungr</td>
<td>John made the door open</td>
<td>unclear</td>
</tr>
<tr>
<td>Causative Pattern</td>
<td>gr</td>
<td>Ben melted the butter</td>
<td>accept</td>
</tr>
<tr>
<td></td>
<td>ungr</td>
<td>Ben made the butter melt</td>
<td>accept</td>
</tr>
</tbody>
</table>
As for the ESL learners' performance on the transitive constructions with the anticausative pattern, they correctly accepted the grammatical transitive, while showing uncertainty with the ungrammatical transitive construction.

This contrasts with ESL learners' performance on the causative pattern, where they correctly accepted the grammatical transitive construction, whereas they incorrectly accepted the ungrammatical one.

A first observation is that Korean learners of English seem to treat the ungrammatical transitive constructions with the anticausative pattern (e.g., John made the door open) differently from those with the causative pattern (e.g., Ben made the butter melt). For example, they accepted them with the causative pattern more readily than with the anticausative pattern.

The reason for this may lie in the difference between a syntactic causative involving verbs with the causative pattern and a syntactic causative involving verbs with the anticausative pattern in Korean. The following illustrates this (key-hata is used for a syntactic causative in Korean):

(11) John-i mwun-ul yel-key hay-ssta.
     -nom door-acc open-comp do-past-dec
     'John made (somebody) open the door.'

(12) Ben-i pethe-lul nok-key hay-ssta.
     -nom butter-acc melt-comp do-past-dec
     'Ben made the butter melt.'

Examples (11) and (12), both syntactic causatives in Korean, have a different meaning, depending on which verb appears in the causative. When a verb which belongs to the anticausative pattern appears in the syntactic causative, as in (11), the agent of the event of opening the door is not John, but somebody else, which is not expressed here. In
contrast, when a verb that belongs to the causative pattern appears in the syntactic causative, as in (12), the agent of the event of melting the butter is still Ben, and not anybody else.

Thus, the reason why learners reject the ungrammatical transitive in English with verbs which belong to the anticausative pattern more readily than with verbs that belong to the causative pattern could be that the picture given for this sentence where John is depicted as somebody opening the door cannot be described by the corresponding syntactic causative in Korean. Consider the following picture:

```
John opened the door.  1  2  3  4  5  don't know
John made the door open.  1  2  3  4  5  don't know
```

On the other hand, the picture given for the ungrammatical transitive with verbs that belong to the causative pattern in which Ben, for example, is depicted as somebody opening the door.
melting the butter can be straightforwardly described by the corresponding syntactic causative in Korean. Consider the following picture:

Recall that the pattern transfer predicts the influence of L1 constructions in Goldberg's sense, by which I mean pairings of a particular form and a grammatical meaning. Crucially, the Korean causatives corresponding to the two English patterns differ in their meaning. Whereas the Korean structural equivalent of *Ben made the butter melt* (sentence (13) below) has the same meaning as its English counterpart, the Korean structural equivalent of *John made the door open* (sentence (14) below) has a substantially different meaning, making it a less likely source for pattern transfer.

(13) Ben-i pethe-lul nok-key hay-ss-ta.
    -nom butter-acc melt-comp do-past-dec
    'Ben made the butter melt.'
When the transferred pattern is inappropriate to describe the picture given for the sentence, as shown for the ungrammatical transitive form in the anticausative pattern (e.g., *John made the door open*), they are less likely to accept it. When the transferred pattern correctly describes the picture provided for the sentence, as shown for the ungrammatical transitive form in the causative pattern (e.g., *Ben made the butter melt*), on the other hand, they are more likely to accept it.

An explanation based on a pattern transfer can also be applied to the grammatical transitive forms in English. For example, Korean learners of English correctly accepted these forms for both anticausative (e.g., *John opened the door*) and causative patterns (e.g., *Ben melted the butter*).

If Korean learners of English had been influenced by class-based transfer, their performance on the grammatical transitive forms would have been different for alternating unaccusative verbs in English that belong to the anticausative pattern in Korean and those verbs that belong to the causative pattern. This is because in Korean, verb forms occurring in the grammatical transitive constructions for anticausative and causative patterns are different, i.e., a non-derived verb appears in these constructions in the anticausative pattern, such as *yel-ta* 'open', *tat-ta* 'close', *kkay-ta* 'break', etc. On the other hand, a derived verb appears in the same constructions in the causative pattern, such as *nok-i-ta* 'melt', *el-li-ta* 'freeze', *mal-li-ta* 'dry', etc. Korean learners of English, however, performed well on the grammatical transitive forms for both anticausative and causative patterns, contrary to what we would expect if there is class-based transfer.
There is no such problem if we posit pattern transfer since Korean has a transitive construction with an underived transitive verb and the right grammatical meaning (roughly "X acts on Y").

    -nom door-acc open-past-dec

'Chulsoo opened the door.'

I propose that this pattern provides the basis for learners' assumption that English sentences such as *John opened the door* and *Ben melted the butter* are acceptable, without regard for the class to which the corresponding Korean verbs belong (i.e., causative or anticausative).

Note that pattern transfer is sensitive only to the existence of patterns or constructions with a comparable meaning. Thus, having a non-derived transitive pattern in their native language that carries the meaning of a caused process (as in *Chelswu-ka mwun-ul yel-ess-ta* 'Chulsoo opened the door') leads Korean learners of English to expect that a comparable pattern is acceptable in English. It should also be noted that Korean learners of English did not transfer the specific verb form used in their L1 in identifying the grammatical transitive constructions with those alternating unaccusative verbs in English which belong to the anticausative pattern in Korean (i.e., a non-derived verb) and the transitive constructions with those verbs which belong to the causative pattern (a derived verb).

In conclusion, I suggest that a pattern-based transfer, and not a class-based transfer account, can better explain the ESL learners' performance on the transitive...
constructions with both anticausative and causative patterns. Now I turn my attention to intransitive constructions.

The intransitive constructions

Consider first the following table which shows the ESL learners' performance on intransitive constructions for both the anticausative and causative patterns:

<table>
<thead>
<tr>
<th></th>
<th>gr/ungr</th>
<th>Example</th>
<th>Performance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Anticausative Pattern</td>
<td>gr</td>
<td>The door opened</td>
<td>accept</td>
</tr>
<tr>
<td></td>
<td>ungr</td>
<td>The door got opened</td>
<td>accept</td>
</tr>
<tr>
<td>Causative Pattern</td>
<td>gr</td>
<td>The butter melted</td>
<td>accept</td>
</tr>
<tr>
<td></td>
<td>ungr</td>
<td>The butter got melted</td>
<td>accept</td>
</tr>
</tbody>
</table>

Let us first look at the ESL learners' performance on the intransitive constructions with the anticausative pattern. They correctly accepted the grammatical inchoative (e.g., *The door opened*), although advanced learners accepted them more readily than beginner-level learners. In addition, the learners incorrectly accepted the ungrammatical intransitive construction (e.g., *The door got opened*).

Turning to the causative pattern, Korean learners of English correctly accepted the grammatical inchoative (e.g., *The butter melted*), while incorrectly accepting the more ungrammatical intransitive form (e.g., *The butter got melted*).

Thus, it appears that ESL learners accepted everything here, i.e., grammatical and ungrammatical intransitive constructions for both anticausative and causative patterns. Why would this be? I will first discuss the grammatical inchoative forms for both anticausative and causative patterns. The fact that ESL learners accepted the
grammatical inchoative forms in English with both the anticausative pattern (e.g., *The door opened*) and causative pattern (e.g., *The butter melted*) can be explained that they transferred from Korean a construction that carries the meaning of an uncaused process without the use of an inchoative morpheme (as in *Elum-i nok-ass-ta* 'the ice melted').

Note that if ESL learners had been influenced by class-level transfer, they would have performed on the grammatical inchoative forms with the anticausative pattern differently from those with the causative pattern, because different verb forms are used in these forms depending on which pattern the verbs belong to in Korean. For example, a derived verb appears in the inchoative form in the anticausative pattern, consisting of a bare verb and an inchoative morpheme, i.e., *yel-li-ess-ta* (open-incho-past-dec) 'opened'. On the other hand, a non-derived verb occurs in the inchoative form in the causative pattern, such as *nok-ta* 'melt', *el-ta* 'freeze', *malu-ta* 'dry', *tha-ta* 'burn', *tol-ta* 'spin', *kwulu-ta* 'roll', etc.

Let us now turn to the ungrammatical intransitive constructions involving both anticausative and causative patterns. The fact that Korean learners of English accepted the ungrammatical intransitive forms for both the anticausative (e.g., *The door got opened*) and causative pattern (e.g., *The butter got melted*) in English can be explained by the pattern transfer account with reference to Korean constructions below:

(16) a. mwun-i yel-li-e iss-ta.
    door-nom open-incho-epen be-dec
    'The door is in a state of being opened.'

    b. pethe-ka nok-a iss-ta.
    butter-nom melt-epen be-dec
    'The butter is in a state of being melted.'
The key observation is that Korean has a fully grammatical construction with a structure and grammatical meaning comparable to those of the unacceptable English *get* pattern. (And, intriguingly, it occurs primarily with unaccusative verbs—the very type of verb that triggers the errors in the ESL learners.)

Note that the task involved in this study is a picture-identification task in which learners have to identify whether a sentence correctly describes the picture they see. Thus, when Korean learners of English see a picture depicting a result state, e.g., a door being opened, and the accompanying sentence *The door got opened*, they might have attempted to find a pattern in their L1 corresponding to the sentence in English. Consider the picture below:

![Picture with options]

<table>
<thead>
<tr>
<th>The door got opened</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>don't know</th>
</tr>
</thead>
<tbody>
<tr>
<td>The door opened</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>don't know</td>
</tr>
</tbody>
</table>
Thus, Korean learners of English could well have found something analogous for *got opened* in Korean, i.e., the verb pattern $V$-(e/a) *iss-ta* 'be in a state of $V$' as shown in (9a) above. Moreover, this verb pattern also correctly describes the picture they see, which depicts more a current state rather than a result state this time.

Now, consider the following picture for the example (9b):

<table>
<thead>
<tr>
<th>The butter melted</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>don't know</th>
</tr>
</thead>
<tbody>
<tr>
<td>The butter got melted</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>don't know</td>
</tr>
</tbody>
</table>

Here again, Korean learners of English could well have found something analogous for *got melted* in Korean, namely the verb pattern $V$-(e/a) *iss-ta* 'be in a state of $V$'. In addition, this verb pattern correctly describes the picture they see, which depicts more a current state rather than a result state this time.
In conclusion, I suggest that ESL learners have transferred a general pattern, rather than a class, in identifying grammatical and ungrammatical intransitive constructions for both anticausative and causative patterns.

The table below summarizes the ESL learners' performance on both grammatical and ungrammatical transitive as well as grammatical and ungrammatical intransitive constructions with both anticausative and causative patterns, along with the alternative pattern-based transfer accounts used in this study. Let us first look at these learners' performance on the transitive constructions along with the alternative accounts:

<table>
<thead>
<tr>
<th>Construction Pattern</th>
<th>Transitive (Causative)</th>
<th>example</th>
<th>performance</th>
<th>explanation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Anticausative</td>
<td>gr</td>
<td>John opened the door</td>
<td>good</td>
<td>transfer of a transitive pattern</td>
</tr>
<tr>
<td></td>
<td>ungr</td>
<td>John made the door</td>
<td>unclear</td>
<td>weak transfer of a syntactic causative</td>
</tr>
<tr>
<td>Causative</td>
<td>gr</td>
<td>Ben melted the butter</td>
<td>good</td>
<td>transfer of a transitive pattern</td>
</tr>
<tr>
<td></td>
<td>ungr</td>
<td>Ben made the butter</td>
<td>poor</td>
<td>strong transfer of a syntactic causative</td>
</tr>
</tbody>
</table>

In sum, the ESL learners' performance on the ungrammatical transitive constructions with both causative and anticausative patterns can be explained by assuming that they have transferred a syntactic causative pattern from their L1. When this pattern correctly describes the picture they see, as shown for the ungrammatical transitive construction with the causative pattern (e.g., Ben made the butter melt), they are likely to accept the construction. When the syntactic causative pattern they are transferring from their L1 is inappropriate to describe the picture they see, as shown for
the ungrammatical transitive construction with the anticausative pattern (e.g., John made the door open), they are less likely to accept the construction.

Moreover, the ESL learners' performance on the grammatical transitive constructions in causative and anticausative patterns can be explained by assuming that they have transferred a transitive pattern from their L1. Having a transitive pattern in their native language that carries the meaning of a caused process without a causative morpheme (as in Chelswu-ka mwun-ul yel-ess-ta 'Chulsoo opened the door') leads Korean learners of English to expect that a comparable pattern is acceptable in English.

Let us now look at the following table, which illustrates the ESL learners' performance on the intransitive constructions along with the alternative accounts:

Table 25. ESL learners' performance on intransitive forms along with alternative accounts

<table>
<thead>
<tr>
<th>Construction Pattern</th>
<th>gr/ungr</th>
<th>example</th>
<th>performance</th>
<th>explanation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Anticausative</td>
<td>gr</td>
<td>The door opened</td>
<td>good</td>
<td>transfer of an intransitive pattern</td>
</tr>
<tr>
<td></td>
<td>ungr</td>
<td>The door got opened</td>
<td>poor</td>
<td>transfer of a $V$-$(e/a)$ issta pattern</td>
</tr>
<tr>
<td>Causative</td>
<td>gr</td>
<td>The butter melted</td>
<td>good</td>
<td>transfer of an intransitive pattern</td>
</tr>
<tr>
<td></td>
<td>ungr</td>
<td>The butter got melted</td>
<td>poor</td>
<td>transfer of a $V$-$(e/a)$ issta pattern</td>
</tr>
</tbody>
</table>

With respect to the intransitive forms with both anticausative and causative patterns, Korean learners of English accepted everything, i.e., they accepted both grammatical and ungrammatical intransitive forms with both anticausative (e.g., The door opened & The door got opened) and causative patterns (e.g., The butter melted & The butter got melted). The fact that they accepted the grammatical inchoative forms both
with the anticausative pattern (e.g., *The door opened*) and with the causative pattern (e.g., *The butter melted*) can be explained by assuming that they have transferred a general intransitive pattern. Having an intransitive pattern in their native language that carries the meaning of an uncaused process without the use of an inchoative morpheme (as in *Olumi-nok-ass-ta* 'the ice melted') leads Korean learners of English to expect that a comparable pattern is acceptable in English.

A similar explanation can be offered for why they accepted ungrammatical intransitive forms with both the anticausative (e.g., *The door got opened*) and causative pattern (e.g., *The butter got melted*). As we have seen, there is a morphologically and semantically similar pattern in their L1, i.e., *V-(e/a) issta* 'be in a state of V'.

In conclusion, I argue that pattern-based transfer, and not class-based transfer, can better account for the ESL learners' performance on transitive and intransitive constructions in both the anticausative and causative patterns. I turn now to the alternating unergative patterns.
5.7.3. The alternating unergative construction

The unergative verbs to be examined here are those in English whose counterparts in Korean alternate in transitivity, such as *wulta* 'cry', *wusta* 'laugh', *cata* 'sleep', *ketta* 'walk', etc. These verbs were put aside when the data for the two different classes of alternating unaccusative verbs, i.e., causative and anticausative, were analyzed with respect to class-based transfer. The problem using a class-based transfer account in explaining the ESL learners' performance with alternating unergative verbs involves the fact that with these verbs there are no different classes that we could contrast to each other, as we did for alternating unaccusative verbs. In other words, it is impossible to measure the data for these verbs against class-based transfer, when there is only one class.

I will provide a pattern-based transfer hypothesis to account for the ESL learners' performance with alternating unergative verbs, namely the same hypothesis used to explain these learners' performance with alternating unaccusative verbs. Consider first the following table which illustrates the ESL learners' performance on the alternating unergative construction:

---

9 An alternating unergative construction is possible only for Korean, and not for English. Specifically, in Korean some unergative verbs alternate in transitivity, whereby a derived verb consisting of a bare verb and a causative morpheme occurs in the transitive construction, while a non-derived verb appears in the intransitive form.
As shown here, ESL learners performed well both on the grammatical and ungrammatical transitive constructions, correctly accepting the grammatical transitive construction (e.g., *Tom made the girl cry*) and rejecting the ungrammatical one (e.g., *Tom cried the girl*). On the intransitive constructions, both beginner-level and advanced learners correctly accepted the grammatical form (e.g., *The girl cried*). In addition, advanced learners correctly rejected the ungrammatical intransitive form (e.g., *The girl got cried*), whereas beginner-level learners showed difficulty rejecting it.

In interpreting the ESL learners' performance with alternating unergative verbs, an explanation based on pattern transfer once again seems promising. For example, Korean learners of English performed well on both grammatical and ungrammatical transitive forms in English with alternating unergative verbs by correctly accepting grammatical sentences and rejecting ungrammatical ones. Their correct acceptance of the grammatical transitive form (e.g., *Tom made the girl cry*) can be attributed to the transfer of a general pattern in Korean, whereby unergative verbs occur in a syntactic causative construction, as shown below:

\[(17) \text{Inho-ka yecaai-lul wul-} \underline{\text{ke-y}} \underline{\text{ha}}-\text{yess-ta.}}\]
\[
\text{-nom girl-acc cry-comp do-past-dec }
\]
\*'Inho made the girl cry.'\]
Aside from the unergative verb *wulta* 'cry', all the other unergative verbs used in the experiment such as *wusta* 'laugh', *ketta* 'walk', and *cata* 'sleep' can occur in a syntactic causative in Korean. In this regard, it would be worth noting that a syntactic causative is more productive than a morphological causative in Korean. Hence, it appears that Korean learners of English had transferred from their L1 a more general pattern for a causative construction, i.e., a syntactic causative pattern, in identifying a causative construction in English with alternating unergative verbs.

As far as the ungrammatical transitive form (e.g., *Tom cried the girl*) is concerned, the learners' correct rejection of this form might be explained by assuming that they have transferred an ungrammatical transitive pattern in Korean where an unergative verb is used in a causative construction (as in *Cheulsu-ka yecaai-lul wul-ess-ta* 'Chulsoo cried the girl'). Since the transferred pattern is illicit in their L1, the learners expect that a comparable pattern in English is also ungrammatical, thus leading them to reject the ungrammatical transitive construction in English.

Let us now examine the learners' performance on intransitive constructions with alternating unergative verbs. Here, the advanced ESL learners correctly accepted the grammatical intransitive form (e.g., *The girl cried*) and rejected the ungrammatical one (e.g., *The girl got cried*). These learners' correct performance on the grammatical constructions can be attributed to the transfer of an intransitive pattern from their L1 that carries the meaning of an activity (as in *yecaai-ka wul-ess-ta* 'the girl cried'). In addition, the transfer of an ungrammatical intransitive pattern from their L1 in which an unergative verb occurs with -*e-iss-ta* 'be in a state' (as in *yecaai-ka wul-e-iss-ta* 'the girl cried') can
account for the advanced learners' correct rejection of the ungrammatical intransitive constructions.

The real challenge lies in explaining the beginner-level ESL learners' performance on the intransitive constructions with alternating unergative verbs, especially their performance on the ungrammatical intransitive construction. As we have noted, these learners correctly accepted the grammatical intransitive (e.g., *The girl cried*), while incorrectly accepting the ungrammatical intransitive form (e.g., *The girl got cried*). Their correct acceptance of the grammatical intransitive form has a transfer explanation, as we have just seen. But what about the ungrammatical pattern, which they also accept?

Unlike the advanced learners who correctly rejected the ungrammatical intransitive construction with alternating unergative verbs, the beginner-level ESL learners incorrectly accepted this construction. This incorrect acceptance begs the question as to why they showed difficulty rejecting the ungrammatical intransitive construction with alternating unergative verbs such as *The girl got cried*, *The baby got laughed*, etc.

First, to find out how many of the beginner-level learners rejected and/or accepted this construction, the following analysis is performed. Ratings of 4 or 5 for at least three items out of four was taken to indicate acceptance of the pattern, while ratings of 1 or 2 for at least three items was taken to indicate rejection. Consider the following table which illustrates the beginner-level learners' responses on the ungrammatical intransitive construction with alternating unergative verbs in terms of their acceptance and/or rejection of this construction:
Table 27. Beginner-level learners' responses on ungrammatical intransitive forms with
alternating unergative verbs

<table>
<thead>
<tr>
<th>No. (%) of learners who</th>
<th>No. (%) of learners who</th>
</tr>
</thead>
<tbody>
<tr>
<td>rejected (responses 1 or 2)</td>
<td>accepted (responses 4 or 5)</td>
</tr>
<tr>
<td>Beginner-level</td>
<td>16 (23%)</td>
</tr>
</tbody>
</table>

As shown here, 16 learners out of 70 (23%) correctly rejected the ungrammatical
transitive construction with alternating unergative verbs, whereas 21 learners (30%)
incorrectly accepted it. In addition, no clear response patterns can be found for the
remaining 33 learners (47%).

The fact that 21 beginner-level ESL learners (30%) gave a positive response on
the ungrammatical intransitive construction with alternating unergative verbs is
troublesome. An additional analysis was performed to find out whether the learners who
accepted the ungrammatical intransitive construction with alternating unergative verbs
(e.g., *The baby got laughed*) also accepted the ungrammatical intransitive construction
with alternating unaccusative verbs (e.g., *The butter got melted, The door got opened,*
etc.). The rationale behind this is that if a correlation can be found between the
acceptance of the ungrammatical intransitive construction with alternating unergative verbs
and that of the ungrammatical intransitive construction with alternating
unaccusative verbs by the same learners, it could indicate that these learners
overgeneralized the 'get + V ed' form used in the ungrammatical intransitive form with
alternating unaccusative verbs.

In order to find out whether there is a correlation between these two
ungrammatical intransitive constructions, the learners who rated the ungrammatical
intransitive construction with alternating unergative verbs positively are first identified,
and then the responses by these learners on the ungrammatical intransitive construction
with alternating unaccusative verbs are examined. The following table illustrates these
learners' responses on the ungrammatical intransitive construction with alternating
unaccusative verbs (note that there are 21 learners we are considering here, as well as 10
items in total for an ungrammatical intransitive form with alternating unaccusative verbs).

<table>
<thead>
<tr>
<th>No. of items accepted out of 10</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>9</th>
<th>10</th>
</tr>
</thead>
<tbody>
<tr>
<td>No. of learners (21 in total)</td>
<td>2</td>
<td>1</td>
<td>4</td>
<td>1</td>
<td>3</td>
<td>10</td>
</tr>
</tbody>
</table>

As shown here, 10 learners accepted the ungrammatical intransitive forms with
alternating unaccusative verbs for all 10 items, 3 learners for 9 items, 1 learner for 8
items, and so on. If we count only those learners who accepted the ungrammatical
intransitive forms with alternating unaccusative verbs for at least 8 items, 14 learners
(67%) belong to this category.

A 1-way ANOVA was run to see whether there is a correlation between the
ungrammatical intransitive forms with alternating unergative verbs (e.g., *The girl got
cried*) and those with alternating unaccusative verbs (e.g., *The butter got melted*) in terms
of the beginner-level learners' acceptance of these two groups of forms. Results show
that there is no significant correlation effect between these two constructions (*p > 0.1107*).

Based on these results, it is difficult to argue that beginner-level learners overgeneralized
the 'get + Ved' form used in the ungrammatical intransitive form with alternating
unaccusative verbs in identifying the ungrammatical intransitive construction with
alternating unergative verbs.

A possible explanation for the beginner-level learners' acceptance of the
ungrammatical intransitive construction like *The girl got cried* can be found in the fact
that these learners might have treated the unergative verbs occurring in this construction as unaccusative-like verbs, thus assuming that they can occur with the verb *get*.

Sorace (2000:877) introduces an auxiliary selection hierarchy in which different intransitive verbs are ordered with respect to variable auxiliary selection. On one end, there are core unaccusative verbs denoting a change of location, such as *come, go, arrive*, etc., which select the auxiliary *be* in Dutch, German, and Italian. On the other end, there are core unergative verbs categorized as 'nonmotional controlled process verbs' like *work, play, talk*, etc., which are combined with the auxiliary *have*. In between these ends, there are less consistent categories of verbs in terms of selecting an auxiliary. In other words, these verbs are less unergative- or unaccusative-like. One category involves 'uncontrolled process verbs', denoting various types of process, such as uncontrolled action (e.g., *be horrified, tremble*, etc.), involuntary bodily function (e.g., *cough, sweat*, etc.), and emission of light/sound/smell (e.g., *shine, ring*, etc.), etc., whose common denominator is the lack of volitionality. These verbs usually select the auxiliary *have* in German, Dutch, and French, but are highly variable in Italian.

The unergative verbs tested in this study such as *laugh, cry, sleep*, etc., could be categorized as belonging to the class of uncontrolled process verbs, as defined in Sorace (2000). Hence, beginner-level ESL learners might have treated these verbs as unaccusative-like verbs, thus assuming that they can occur with the verb *get*.

In conclusion, setting the beginner-level learners' performance on the ungrammatical intransitive construction aside, I suggest that ESL learners have transferred a general pattern in identifying grammatical and ungrammatical transitive as
well as grammatical and ungrammatical intransitive constructions with alternating unergative verbs in English.

The table below summarizes the ESL learners' performance with alternating unergative verbs along with the alternative transfer accounts used in this study. Let us first look at the transitive constructions:

Table 29. ESL learners' performance with alternating unergative verbs along with the alternative accounts

<table>
<thead>
<tr>
<th>Alternating Unergatives</th>
<th>Transitive (Causative)</th>
<th>Performance</th>
<th>Example in Korean</th>
<th>Explanation</th>
</tr>
</thead>
<tbody>
<tr>
<td>gr/ungr</td>
<td></td>
<td>good</td>
<td>Inho-ka ye caai-lul nom girl-acc wul-key ha-yess-ta cry-comp do-past-dec 'Inho made the girl cry'</td>
<td>transfer of a syntactic causative</td>
</tr>
<tr>
<td>gr</td>
<td>Tom made the girl cry</td>
<td>good</td>
<td></td>
<td></td>
</tr>
<tr>
<td>ungr</td>
<td>Tom cried the girl</td>
<td>good</td>
<td>*Inho-ka ye caai-lul nom girl-acc wul-ess-ta cry-past-dec 'Inho cried the girl.'</td>
<td>transfer of an ungrammatical transitive pattern</td>
</tr>
</tbody>
</table>

I have argued that both beginner-level and advanced ESL learners transferred a general pattern from their L1 in identifying grammatical and ungrammatical transitive constructions with alternating unergative verbs in English. In identifying the grammatical transitive constructions with these verbs, they seem to have been influenced by a syntactic causative pattern in Korean. Moreover, in identifying the ungrammatical transitive forms an ungrammatical transitive pattern was transferred over in which an unergative verb appears.
Let us now look at the following table which illustrates the ESL learners' performance on intransitive constructions with alternating unergative verbs along with the alternative transfer accounts:

Table 30. ESL learners' performance on intransitive forms with alternating unergative verbs along with alternative accounts

<table>
<thead>
<tr>
<th>Alternating Unergatives</th>
<th>Intransitive</th>
<th>Example in Korean</th>
<th>Explanation</th>
</tr>
</thead>
<tbody>
<tr>
<td>gr/ ungr</td>
<td>gr</td>
<td>The girl good</td>
<td>yecaai-ka wul-ess-ta girl-nom cry-past-dec 'The girl cried' transfer of an intransitive pattern</td>
</tr>
<tr>
<td></td>
<td>ungr</td>
<td>The girl got cried</td>
<td>*yecaai-ka wul-e-girl-nom cry-epen-iss-ta be-dec 'The girl got cried' transfer of an ungrammatical intransitive pattern</td>
</tr>
</tbody>
</table>

In identifying grammatical intransitive forms with alternating unergative verbs in English, advanced ESL learners seem to have transferred an intransitive pattern from their L1 that carries the meaning of an activity. In addition, the transfer of an ungrammatical intransitive pattern from their L1 in which an unergative verb occurs with a morpheme indicating stativity can account for these learners' correct performance on the ungrammatical intransitive constructions.

As far as the beginner-level ESL learners are concerned, I argue that, like advanced learners, these learners also transferred an intransitive pattern that carries the meaning of an activity in identifying the grammatical intransitive form. On the other hand, the reason why these learners had difficulty rejecting the ungrammatical intransitive form might lie in the fact that they treated the unergative verbs as unaccusative-like verbs, thus assuming that they can occur with the verb get.

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In accounting for the ESL learners' performance with alternating unaccusative verbs in English, I have argued that these learners, both beginner-level and advanced, had been influenced more by general pattern transfer rather than by class-based transfer in identifying these verbs. As I noted earlier, however, beginner-level learners in this study are not "true" beginners, since most of them had learned English for at least 6 years before becoming college students. Thus, it could have been possible to find a class-based transfer effect if the learners had been true beginner-level learners. Future research should involve true beginner-level learners to determine whether class-based transfer occurs more at an early stage of learning rather than at a later stage.

This section started out with the question of which of the two approaches, i.e., class-based or pattern-based transfer, best accounts for the ESL learners' performance in this study. I investigated each approach against the data that I have collected. It was shown that ESL learners did not seem to have been influenced by class-based transfer in identifying alternating unaccusative verbs in English. Rather, they seem to have transferred a general structural pattern in identifying these verbs.

A general pattern transfer account can also explain the ESL learners' performance with alternating unergative verbs. In conclusion, I claim that a pattern-based transfer account can explain the ESL learners' performance with both alternating unaccusative and unergative verbs in English.
6.1. Issues

In order to determine whether the absence of morphology to encode alternating unaccusative verbs in their native language interferes with learning these verbs in L2 which carry an extra morpheme to indicate causation or inchoation, English-speaking learners of Korean (KSL) are examined in this study.

Montrul (2001a) investigated the acquisition of change-of-state verbs in Turkish by Spanish and English speakers. Turkish has two different patterns with alternating unaccusative verbs—anticausative and causative. Consider the following examples:

**Anticausative pattern**

(1) a. Hirsiz pencere-yi kir-di.
   thief window-acc break-past
   'The thief broke the window.'

   b. Pencere kir-il-dı.
   window break-[anticausative]-past
   'The window broke.'

**Causative pattern**

(2) a. Düşman gemi-yi bat-[caus]-mis.
   enemy ship-acc sink-past
   'The enemy sank the ship.'

   b. Gemi bat-mis.
   ship sink-past
   'The ship sank.'
In the anticausative pattern in Turkish a non-derived verb appears in the transitive construction, and a derived verb consisting of a bare verb and an inchoative morpheme occurs in the intransitive construction. In the causative pattern, on the other hand, a derived verb consisting of a bare verb and a causative morpheme appears in the transitive construction, and a non-derived verb occurs in the intransitive construction.

Compared to Turkish, Spanish has only one major pattern, i.e., anticausative, in which a reflexive clitic se is used in the intransitive construction, as shown below:

(3) a. Franco abrió la puerta. 'Frank opened the door.'
   b. La puerta [se] abrió. 'The door opened.'

Results on change-of-state verbs of the anticausative pattern in Turkish show that the English group had difficulty in determining both grammatical and ungrammatical causative forms, as well as grammatical and ungrammatical inchoative forms. Spanish-speaking learners, on the other hand, were very accurate at correctly accepting grammatical forms and rejecting ungrammatical forms. According to Montrul, this response is expected because, unlike English, Spanish has the anticausative pattern with intransitive verbs, and, in general, does not allow zero-derived intransitive forms.

The findings in Montrul's studies (1999; 2001a; 2001b)—that the absence or presence of morphology to encode alternating unaccusative verbs in L1 interferes with learning these verbs in L2—are tested in this study with English-speaking learners of Korean. Korean is similar to Turkish in that there are two different patterns with alternating unaccusative verbs—anticausative and causative.

Consider the following examples:
Anticausative pattern

   -nom vase-acc break-past-dec
   'John broke the vase.'

b. hwapyeng-i kkay-ci-ess-ta.
   vase-nom break-incho-past-dec
   'The vase broke.'

Causative pattern

(5) a. Mary-ka elum-ul nok-[i]-ess-ta.
   -nom ice-acc melt-caus-past-dec
   'Mary melted the ice.'

b. elum-i nok-ass-ta.
   ice-nom melt-past-dec
   'The ice melted.'

In the anticausative pattern in Korean a non-derived verb appears in the transitive construction, while a derived verb consisting of a bare verb and an inchoative morpheme occurs in the intransitive construction. In the causative pattern, on the other hand, a derived verb consisting of a bare verb and a causative morpheme appears in the transitive construction, while a non-derived verb occurs in the intransitive construction.

The relevant question might be whether English-speaking learners of Korean will have difficulty identifying the intransitive construction in the anticausative pattern in Korean as well as the transitive construction in the causative pattern because the verbs occurring in these constructions are derived verbs, unlike in English.

The second group of verbs to be examined in this study involves unergative verbs in Korean such as cata 'sleep', ketta 'walk', wusta 'laugh', wulta 'cry', nolta 'play', etc., which alternate in transitivity. Thus, they can occur either as morphological causative transitives or as intransitives. The question is, then, whether English-speaking learners of
Korean could correctly identify that these unergative verbs in Korean alternate in transitivity.

6.2. Hypotheses and predictions

The hypotheses tested in this study are based on the premise that English-speaking learners of Korean are aware that the same kinds of verbs participate (or do not participate) in the causative/inchoative alternation in different languages. The following hypotheses are examined in this study:

**Hypothesis 1:** English-speaking learners of Korean know that externally caused change-of-state verbs (e.g., open, close, melt, freeze, dry, etc.) in Korean allow the causative/inchoative alternation.

**Hypothesis 2:** English-speaking learners of Korean know that unergative verbs in Korean in general disallow the alternation.

If, however, these learners show difficulty identifying alternating unaccusative verbs in Korean, this difficulty has something to do with the morphological characteristics of the verbs in their native language, and not with the argument structure of them. Furthermore, if KSL learners transfer in the domain of morphology when identifying alternating unaccusative verbs in Korean, the following predictions are expected:
Prediction: Alternating unaccusative verbs

English has one major pattern (i.e., labile pattern) for alternating unaccusative verbs. Thus, the verbs occurring in both transitive and intransitive constructions have the same form, i.e., a non-derived verb form (e.g., *John opened the door/The door opened*). In contrast, there are two different patterns in Korean, i.e., anticausative and causative. Hence, if KSL learners transfer a general pattern from their L1, these learners might accept a non-derived verb in Korean rather than a verb which has an extra morpheme attached to it, be it a causative or an inchoative morpheme, across different sentence types (transitive or intransitive) as well as different patterns (anticausative or causative) in both grammatical and ungrammatical constructions.

Therefore, both for the anticausative and causative pattern in Korean, KSL learners are expected to accept the transitive (causative) form with a non-derived verb, but reject one with a derived verb consisting of a bare verb plus a causative morpheme. Further, they would accept the intransitive (inchoative) form with a non-derived verb, but reject one with a derived verb consisting of a bare verb and an inchoative morpheme. These predictions are summarized in the following table:
Table 31. Predictions for KSL learners

<table>
<thead>
<tr>
<th>Construction</th>
<th>Transitive (Causative)</th>
<th>Intransitive (Inchoative)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>gr/ ungr</td>
<td>Predict. gr/ ungr</td>
</tr>
<tr>
<td>Anti-causative</td>
<td>gr</td>
<td>accept</td>
</tr>
<tr>
<td>yelta 'open', tatta 'close', kkayta 'break'</td>
<td>ungr</td>
<td>reject</td>
</tr>
<tr>
<td>Causative</td>
<td>gr</td>
<td>reject</td>
</tr>
<tr>
<td>nokta 'melt', elta 'freeze', kwuluta 'roll', tolta 'spin', thata 'burn'</td>
<td>ungr</td>
<td>accept</td>
</tr>
</tbody>
</table>

6.3. Research questions

This study attempts to answer the following questions:

Primary questions

a. Do English-speaking learners of Korean know that verbs that belong to the anticausative pattern in Korean can appear in a transitive (causative) and intransitive (inchoative) construction?
b. Do English-speaking learners of Korean know that verbs that belong to the causative pattern in Korean can appear in a transitive (causative) and intransitive (inchoative) construction?

c. Do English-speaking learners of Korean know that alternating unergative verbs in Korean can appear in a transitive (causative) and intransitive construction?

d. Can a transfer effect from L1 to L2 be found with alternating unaccusative verbs in Korean?

e. Can the overgeneralization occurrences shown in L1 acquisition also be found in L2 learning? More specifically, do English-speaking learners of Korean also make errors of transitivity by allowing sentences like *Sangho-ka aki-lul wus-ess-ta (Sangho-nom baby-acc laugh-past-dec) 'Sangho laughed the baby' (cf. Sangho made the baby laugh), in which an intransitive verb is used in a transitive construction?

Secondary Questions

a. How are acceptability judgments affected by group and morphology with respect to the transitive (causative) and intransitive (inchoative) construction in the anticausative pattern?

b. How are acceptability judgments affected by group and morphology with respect to the transitive (causative) and intransitive (inchoative) construction in the causative pattern?

c. How are acceptability judgments affected by group and morphology with respect to the transitive (causative) and intransitive construction with the alternating unergative verbs?
6.4. Experiment design

6.4.1. Participants

Participants in this experiment were thirty English-speaking learners of Korean who were recruited in Korea. In addition, thirty native Koreans served as a comparison group. The learner group is heterogeneous in terms of age, the length of stay in Korea, and the length of learning Korean. For example, some of them had already taken some language classes, while some others were taking them at the time of the experiment. Still some others had learned Korean without any outside help. In addition, some had stayed in Korea for a few months, while some others had lived there for a lengthy period. The age of the learners ranged from twenty to sixty.

All these factors did not coincide with the learners' proficiency in Korean, however. For example, the length of stay in Korea did not guarantee a high level of proficiency in Korean. The following table illustrates these learners' profiles (see Appendix I for more detail):

<table>
<thead>
<tr>
<th>Age</th>
<th>Range No. of learners</th>
<th>Length of stay in Korea No. of learners</th>
<th>Length of learning Korean No. of learners</th>
</tr>
</thead>
<tbody>
<tr>
<td>&gt; 20</td>
<td>2</td>
<td>&gt; 1 yr 7</td>
<td>&gt; 1 yr 4</td>
</tr>
<tr>
<td>20~30</td>
<td>19</td>
<td>1~3 12</td>
<td>1~2 13</td>
</tr>
<tr>
<td>30~40</td>
<td>5</td>
<td>4~6 4</td>
<td>3~4 7</td>
</tr>
<tr>
<td>&lt; 40</td>
<td>4</td>
<td>7~10 3</td>
<td>&lt; 4 4</td>
</tr>
<tr>
<td>total</td>
<td>30</td>
<td>&lt; 10 3</td>
<td>no info 2</td>
</tr>
<tr>
<td></td>
<td></td>
<td>no info 1</td>
<td>total 30</td>
</tr>
</tbody>
</table>

Table 32. Profiles for KSL learners
6.4.2. Task

The task involves a picture-identification task, whereby learners have to identify whether a sentence is grammatical or ungrammatical for the picture they see. The same instructions given to ESL learners are also provided to KSL learners. For example, they are asked to mark a number on a scale (1 for least natural and 5 for most natural) to indicate their judgment on the sentence tested. They are allowed to have as much time as they need to complete the task. The duration of the task was approximately an hour. For the main task, the following picture is provided with two accompanying sentences for a caused event:

![Picture with sentences]

Sengho-ka pethe-lul nok-i-ess-ta. 1 2 3 4 5 don't know
Sengho-ka pethe-lul nok-ass-ta. 1 2 3 4 5 don't know
For example, from a set of sentences provided for a caused event, one is grammatical and the other ungrammatical; e.g., Sengho-ka (Sengho-nom) pethe-lul (butter-acc) nok-i-ess-ta (melt-caus-past-dec) 'Sungho melted the butter' is grammatical, whereas Sengho-ka (Sengho-nom) pethe-lul (butter-acc) nok-ass-ta (melt-past-dec) 'Sungho melted the butter' is ungrammatical.

In addition, the following picture is provided with two accompanying sentences for a spontaneous event:

<table>
<thead>
<tr>
<th>pethe-ka nok-ass-ta.</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>don't know</th>
</tr>
</thead>
<tbody>
<tr>
<td>pethe-ka nok-aci-ess-ta</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>don't know</td>
</tr>
</tbody>
</table>

For a spontaneous event, in a set of sentences provided, one is grammatical and the other ungrammatical; e.g., pethe-ka (butter-nom) nok-ass-ta (melt-past-dec) 'The butter melted' is grammatical and pethe-ka (butter-nom) nok-(a)ci-ess-ta (melt-incho-past-dec) 'The butter melted' is ungrammatical.
6.4.3. Test Sentences

For both causative and anticausative patterns, there is a set of sentences, one grammatical and the other ungrammatical\(^\text{10}\), for both caused and spontaneous events. In the anticausative pattern in Korean, the verb used in the transitive construction is a non-derived verb, whereas the verb used in the intransitive construction is a derived verb, formed by adding an inchoative morpheme to the verb root. Thus, the verb with a causative morpheme and the verb without an inchoative morpheme are ungrammatical in the transitive and intransitive constructions, respectively.

Furthermore, in the causative pattern, the verb used in the transitive construction is a derived verb, i.e., a causative morpheme is attached to the verb root in this construction, rendering the verb without the causative morpheme as ungrammatical. On the other hand, in the same pattern, the verb used in the intransitive form is an underived verb; thus, the verb with an inchoative morpheme is ungrammatical. Consider the following examples:

**Anticausative pattern**

\[(6)\]

a. Manswu-ka yulican-ul kkay-ss-ta. (grammatical)
   -nom glass-acc break-past-dec
   'Mansoo broke the glass.'

b. *Manswu-ka yulican-ul kkay\-[\text{\underline{t}}}]-ess-ta. (ungrammatical)
   -nom glass-acc break-\text{[\underline{caus}]}-past-dec
   'Mansoo broke the glass.'

\(^{10}\) For example, if the verb occurs with a causative morpheme in the transitive form in the anticausative pattern, or if it occurs without a causative morpheme in the same form in the causative pattern, the sentence is ungrammatical. Further, if the verb occurs without an inchoative morpheme in the intransitive form in the anticausative pattern, or if it occurs with an inchoative morpheme in the same form in the causative pattern, the sentence is also ungrammatical.
Causative pattern

(7) a. Sengho-ka pethe-lul nok-[i]-ess-ta. (grammatical)
   -nom butter-acc melt-[caus]-past-dec
   'Sungho melted the butter.'

   -nom butter-acc melt-past-dec
   'Sungho melted the butter.'

c. pethe-ka nok-ass-ta. (grammatical)
   butter-nom melt-past-dec
   'The butter melted.'

d. pethe-ka nok-[a]-[i]ess-ta. (ungrammatical)
   butter-nom melt-epeni incho-[incho]-past-dec
   'The butter melted.'

Unergative verbs in Korean, such as wusta 'laugh', nolta 'play', ketta 'walk', cata 'sleep', etc. can occur in the morphological causative for the caused event. Therefore, with respect to these unergative verbs, the morphological causative construction is grammatical, whereas the construction with a non-derived verb is ungrammatical.

As for the spontaneous event, the intransitive construction with a non-derived verb is grammatical, whereas the construction with a derived verb consisting of a bare verb and an inchoative morpheme is ungrammatical. Consider the following example of alternating unergative verbs in Korean:

(8) a. Sangho-ka aki-lul wus-[ki]-ess-ta. (grammatical)
   -nom baby-acc laugh-[caus]-past-dec
   'Sangho made the baby laugh.'

b. *Sangho-ka aki-lul wus-ess-ta. (ungrammatical)
   -nom baby-acc laugh-past-dec
   'Sangho laughed the baby.'
c. aki-ka wus-ess-ta. (grammatical)
baby-nom laugh-past-dec
'The baby laughed.'

d. *aki-ka wus-e-[ci]-ess-ta. (ungrammatical)
baby-nom laugh-epen-[incho]-past-dec
'The baby laughed.'

6.4.4. Analysis

For a statistical analysis, for each pattern, a 1-way ANOVA was run to determine whether there is a significant difference in performance between the learner and native speaker groups. Further, a 3-way mixed ANOVA was run with repeated measures on two independent variables, i.e., morphology and transitivity. Once a 3-way interaction was shown to be significant for a pattern, indicating that a 2-way interaction (group×transitivity) was different for the two levels of the morphology variable, i.e., morphology vs. non-morphology, a 2-way mixed ANOVA with repeated measures on the morphology variable was run to determine how the 2-way interaction differs, depending on whether tokens with morphology or tokens without morphology are used.

As in the ESL study, "don't know"-responses are excluded. Responses 1 and 2 indicate rejection, and responses 4 and 5 acceptance. The response involving 3 is interpreted as uncertain. The description used for each response is as follows: 1 for least natural, 2 for sounds strange, 3 for kind of ok, 4 for sounds good, and 5 for most natural.
6.5. Results

6.5.1. Verb-translation task

KSL learners are asked to translate some verbs in Korean used in the main task into English. In addition, they are instructed to ask if they have difficulty translating some verbs. The correct translation is provided for those verbs which learners could not translate into English. This is to help them do the main task because if learners do not know what a certain verb means, they would be unable to perform the task involving that verb, for example.

6.5.2. Cloze test

This test is used to determine the learner's proficiency. The text used here is taken from the textbook *Integrated Korean Workbook (Intermediate 2)* written by Hwang and Lee in 2001, which was used for intermediate-level learners at the university of Hawai'i at Mānoa. There were thirty blanks to fill in. An exact word criterion is used to get a score, i.e., words used in the original text should be given. Most of the KSL learners had difficulty with the test. The following table illustrates their performance:

<table>
<thead>
<tr>
<th>Table 33. KSL learners' performance on cloze test</th>
</tr>
</thead>
<tbody>
<tr>
<td>Score</td>
</tr>
<tr>
<td>No of learners (30)</td>
</tr>
</tbody>
</table>

The table below shows Korean native speakers' performance on the cloze test:

<table>
<thead>
<tr>
<th>Table 34. Native speakers' performance on cloze test</th>
</tr>
</thead>
<tbody>
<tr>
<td>Score</td>
</tr>
<tr>
<td>No of native speakers (30)</td>
</tr>
</tbody>
</table>
A great portion of the native speakers of Korean obtained a score on the cloze test between thirteen and eighteen. When comparing the scores obtained by KSL learners to those received by native speakers, some learners scored as high as native speakers, e.g., 9 learners scored between nine and sixteen.

6.5.3. Main experiment

Since alternating unaccusative verbs in Korean can be divided into two different patterns, i.e., anticausative and causative, results of these verbs are reported separately according to these two patterns. First, results of the anticausative pattern are presented followed by those of the causative pattern. Results of alternating unergative verbs are reported next.

1. Alternating unaccusative verbs

Change-of-state verbs like yeita 'open', tatta 'close', nokta 'melt', maluta 'dry', etc., in Korean alternate in transitivity, as in English. However, unlike English which has one major pattern, i.e., a labile pattern, Korean has two different patterns, i.e., anticausative and causative. In the following, results of the anticausative pattern are presented first, followed by those of the causative pattern.

Anticausative Pattern

In the anticausative pattern in Korean, the transitive (causative) verb is a non-derived verb and the intransitive (inchoative) verb has an inchoative morpheme attached to it. Thus, in the transitive sentence the verb form is ungrammatical if it has a causative morpheme attached to it, while the verb without an inchoative morpheme is ungrammatical in the intransitive sentence.
Results of the anticausative pattern are reported below. Table 35 shows means
and standard deviations on grammatical and ungrammatical sentences. Figure 4 displays
mean responses on causative and inchoative forms.

Table 35. Anticausative Pattern; Means, and Standard Deviations on Grammatical and
Ungrammatical Sentences

<table>
<thead>
<tr>
<th>Verb Type</th>
<th>Learner</th>
<th></th>
<th>Native</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>M</td>
<td>SD</td>
<td>M</td>
<td>SD</td>
</tr>
<tr>
<td>*Causative (mor)</td>
<td>1.86</td>
<td>0.46</td>
<td>1.32</td>
<td>0.02</td>
</tr>
<tr>
<td>Causative (nonmor)</td>
<td>4.27</td>
<td>0.36</td>
<td>4.92</td>
<td>0.08</td>
</tr>
<tr>
<td>Inchoative (mor)</td>
<td>3.81</td>
<td>0.30</td>
<td>4.89</td>
<td>0.07</td>
</tr>
<tr>
<td>*Inchoative (nonmor)</td>
<td>2.72</td>
<td>0.36</td>
<td>1.26</td>
<td>0.10</td>
</tr>
</tbody>
</table>

Figure 4 Mean responses on causative and inchoative forms

As shown in Figure 4, both the learner and native speaker groups were accurate in
determining both grammatical and ungrammatical transitive (causative) constructions.
For example, they correctly accepted the transitive construction with a non-derived verb
and rejected one with a derived verb consisting of a bare verb and a causative morpheme.
As for the intransitive constructions, both the learner and native speaker groups correctly
accepted the intransitive construction with a derived verb consisting of a bare verb and an
inchoative morpheme and rejected one with a non-derived verb.

A 1-way ANOVA shows that on all construction types, however, the learners' performance is significantly different from the native speakers' (Tukey, \( p < .05 \)).

The following table presents the significant effects in the 3-way ANOVA for the anticausative pattern:

<table>
<thead>
<tr>
<th>3-way ANOVA</th>
<th>F Value</th>
<th>df</th>
<th>Pr &gt; F</th>
</tr>
</thead>
<tbody>
<tr>
<td>Main effect morphology</td>
<td>5.21</td>
<td>(1, 58)</td>
<td>0.0262</td>
</tr>
<tr>
<td>2-way interactions</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>transitivity\times group</td>
<td>5.18</td>
<td>(1, 58)</td>
<td>0.0265</td>
</tr>
<tr>
<td>morphology\times group</td>
<td>5.76</td>
<td>(1, 58)</td>
<td>0.0196</td>
</tr>
<tr>
<td>transitivity\times morphology</td>
<td>254.56</td>
<td>(1, 58)</td>
<td>&lt;.0001</td>
</tr>
<tr>
<td>3-way interaction</td>
<td>31.04</td>
<td>(1, 58)</td>
<td>&lt;.0001</td>
</tr>
</tbody>
</table>

A 3-way ANOVA shows that there is only one statistically significant main effect for morphology (meanmor = 11.88; meannonmor = 13.17). In addition, several 2-way interactions are significant: for example, a 2-way interaction (transitivity\times group) is significant (learner(meantran-meanintran) = -0.4; control(meantran-meanintran) = 0.09).

Another 2-way interaction (morphology\times group) is also significant (learner(meanmor-meannonmor) = -1.32; control(meanmor-meannonmor) = 0.03). The other 2-way interaction (transitivity\times morphology) turns out to be significant as well (meantran(mor-nonmor) = -6.01; meanintran(mor-nonmor) = 4.72). Moreover, the 3-way interaction (transitivity\times grammaticality\times proficiency) is also significant (beginner(meantran(mor-nonmor)-meanintran(mor-nonmor)) = -3.5; control(meantran(mor-nonmor)-meanintran(mor-nonmor)) = -7.23).
The fact that the 3-way interaction is significant indicates that the 2-way interaction (transitivity × morphology) is not the same for the learner and native speaker groups. This is illustrated in the following graphs:

Graph 4. 2-way interaction for anticausative pattern

As shown in the graphs above, the difference between tokens with and tokens without morphology is greater with the transitive construction than with the intransitive construction for the learner group. For the native speaker group the difference between tokens with and tokens without morphology is the same for both transitive and intransitive constructions. It appears that the variable of morphology interacts with the variable of transitivity for both the learner and native speaker groups.

To explicate the 3-way interaction effect, the different patterns of the 2-way interaction effect are examined at different levels of the third independent variable. Therefore, subsequent 2-way ANOVA was conducted for each of the subject groups. The statistically significant results are summarized in the table below.
At the learner level, it is clear that the variable of non-morphology has a significantly stronger effect on acceptability judgement with transitive constructions than with intransitive constructions. At the native speaker level, the same holds. In other words, the absence of morphology elicits higher acceptability judgement in the transitive construction, whereas the presence of morphology elicits higher acceptability judgement in the intransitive construction.

**Causative Pattern**

In the causative pattern in Korean the verb in the transitive construction has a causative morpheme attached to it, whereas the verb in the intransitive form is a non-derived verb. Thus, in the transitive sentence a non-derived verb form is ungrammatical, while a verb with an inchoative morpheme is ungrammatical in the intransitive sentence.
Results of the causative pattern are shown below. Table 38 shows means and standard deviations on grammatical and ungrammatical sentences. Figure 5 displays mean responses on causative and inchoative forms.

Table 38. Causative Pattern; Means, and Standard Deviations on Grammatical and Ungrammatical Sentences

<table>
<thead>
<tr>
<th>Verb Type</th>
<th>Learner M</th>
<th>Learner SD</th>
<th>Native M</th>
<th>Native SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Causative (mor)</td>
<td>3.09</td>
<td>0.30</td>
<td>4.96</td>
<td>0.10</td>
</tr>
<tr>
<td>*Causative (nonmor)</td>
<td>2.90</td>
<td>0.40</td>
<td>1.30</td>
<td>0.10</td>
</tr>
<tr>
<td>*Inchoative (mor)</td>
<td>2.97</td>
<td>0.70</td>
<td>2.38</td>
<td>0.34</td>
</tr>
<tr>
<td>Inchoative (nonmor)</td>
<td>4.07</td>
<td>0.40</td>
<td>4.75</td>
<td>0.28</td>
</tr>
</tbody>
</table>

Figure 5 Mean responses on causative and inchoative forms.

As shown in Figure 5, KSL learners seem somewhat unsure, neither accepting nor rejecting grammatical and ungrammatical transitive (causative) constructions, as well as ungrammatical intransitive (inchoative) constructions. They were accurate with the grammatical intransitive construction, however, i.e., they correctly accepted it.
A 1-way ANOVA show that on all construction types KSL learners' performance was significantly different from the native speakers' (Tukey, $p < 0.05$).

As for the native speakers, they were accurate with all the construction types, i.e., grammatical and ungrammatical transitive, as well as grammatical and ungrammatical intransitive constructions. The following table presents the significant effects in the 3-way ANOVA for the causative pattern:

<table>
<thead>
<tr>
<th>3-way ANOVA</th>
<th>F Value</th>
<th>df</th>
<th>Pr &gt; F</th>
</tr>
</thead>
<tbody>
<tr>
<td>Main effect transitivity</td>
<td>40.78</td>
<td>(1, 58)</td>
<td>&lt;.0001</td>
</tr>
<tr>
<td>2-way interactions morphology×group</td>
<td>15.28</td>
<td>(1, 58)</td>
<td>0.0002</td>
</tr>
<tr>
<td>transitivity×morphology</td>
<td>191.59</td>
<td>(1, 58)</td>
<td>&lt;.0001</td>
</tr>
<tr>
<td>3-way interaction trans×morph×group</td>
<td>80.57</td>
<td>(1, 58)</td>
<td>&lt;.0001</td>
</tr>
</tbody>
</table>

A 3-way ANOVA shows that there is only one statistically significant main effect for transitivity (meantran = 12.25; meanintran = 14.17). In addition, a 2-way interaction (morphology×group) is also shown to be significant (learner(meanmor-meannonmor) = −0.91; control(meanmor-meannonmor) = 1.29). Another 2-way interaction (transitivity×morphology) turns out to be significant as well (meantran(mor-nonmor) = 3.85; meanintran(mor-nonmor) = −3.47). Moreover, the 3-way interaction (transitivity×grammaticality×proficiency) is also significant (beginner(meantran(mor-nonmor)-meanintran(mor-nonmor)) = 1.29; control(meantran(mor-nonmor)-meanintran(mor-nonmor)) = 6.03).

Since the 3-way interaction is shown to be significant, it means that the 2-way interaction (transitivity×morphology) is not the same for the learner and native speaker groups. This is illustrated in the following graphs:
As shown in the graphs above, for the learner group, there is no difference between tokens with and tokens without morphology in the transitive construction. However, there is a difference between the two groups of tokens in the intransitive construction for the same group. For the native speaker group the difference between tokens with and tokens without morphology is greater in the transitive construction than that in the intransitive construction. It appears that the variable of morphology interacts with the variable of transitivity for both the learner and native speaker groups.

To explicate the 3-way interaction effect, I chose to examine the different patterns of the 2-way interaction effect at different levels of the third independent variable. Therefore, subsequent 2-way ANOVA was conducted for each of the subject groups.

The statistically significant results are summarized in the table below.

Table 40. 2-way ANOVA for the learner and native speaker groups

<table>
<thead>
<tr>
<th>Subject Group</th>
<th>Effect</th>
<th>F Value</th>
<th>df</th>
<th>Pr &gt; F</th>
</tr>
</thead>
<tbody>
<tr>
<td>KSL learners</td>
<td>Main effect</td>
<td>19.51</td>
<td>(1, 29)</td>
<td>&lt;.0001</td>
</tr>
<tr>
<td></td>
<td>2-way interaction</td>
<td>7.52</td>
<td>(1, 29)</td>
<td>0.0103</td>
</tr>
<tr>
<td>Native speakers</td>
<td>Main effects</td>
<td>22.33</td>
<td>(1, 29)</td>
<td>&lt;.0001</td>
</tr>
<tr>
<td></td>
<td>morphology</td>
<td>43.76</td>
<td>(1, 29)</td>
<td>&lt;.0001</td>
</tr>
<tr>
<td></td>
<td>2-way interaction</td>
<td>611.26</td>
<td>(1, 29)</td>
<td>&lt;.0001</td>
</tr>
</tbody>
</table>
At the learner level, it is clear that the variable of non-morphology has a significantly stronger effect on acceptability judgement with intransitive constructions than with transitive constructions. At the native speaker level, the variable of morphology has a significantly stronger effect on acceptability judgement with transitive constructions than with intransitive constructions. Furthermore, the variable of non-morphology has a significantly stronger effect on acceptability judgement with intransitive constructions than with transitive constructions. In other words, the presence of morphology elicits higher acceptability judgement in the transitive construction than in the intransitive construction, whereas the absence of morphology elicits higher acceptability judgement in the intransitive construction than in the transitive construction.

II. Alternating unergative Verbs

Unlike English, some unergative verbs in Korean such as wusta 'laugh', wulta 'cry', ketta 'walk', cata 'sleep', etc., allow alternation in transitivity (alternating unergative verbs). With alternating unergative verbs in Korean, the transitive (causative) construction is grammatical when the verbs appear with a causative morpheme attached to them, whereas it is ungrammatical when the verbs appear in a non-derived verb form. As with alternating unaccusative verbs, with alternating unergative verbs the intransitive construction is grammatical when the verbs appear in a non-derived verb form, whereas it is ungrammatical when the verbs carry an inchoative morpheme.

Table 41 below shows means and standard deviations on grammatical and ungrammatical sentences. Figure 6 displays means on transitive and intransitive forms.
Table 41. Alternating Unergative Verbs; Means, and Standard Deviations on Grammatical and Ungrammatical Sentences

<table>
<thead>
<tr>
<th>Verb Type</th>
<th>Learner M</th>
<th>Learner SD</th>
<th>Native M</th>
<th>Native SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Causative (mor)</td>
<td>3.60</td>
<td>0.32</td>
<td>4.31</td>
<td>1.30</td>
</tr>
<tr>
<td>*Causative (nonmor)</td>
<td>1.68</td>
<td>0.12</td>
<td>1.40</td>
<td>0.30</td>
</tr>
<tr>
<td>*Unergative (mor)</td>
<td>1.90</td>
<td>0.21</td>
<td>1.59</td>
<td>0.10</td>
</tr>
<tr>
<td>Unergative (nonmor)</td>
<td>4.59</td>
<td>0.32</td>
<td>4.88</td>
<td>0.03</td>
</tr>
</tbody>
</table>

Figure 6 Mean responses on transitive (causative) and intransitive sentences

As shown in Figure 6, both the learner and native speaker groups correctly accepted the grammatical transitive (causative) with a derived verb consisting of a bare verb and a causative morpheme, while correctly rejecting the ungrammatical transitive construction with a non-derived verb. Moreover, both the learner and native speaker groups correctly accepted the grammatical intransitive with a non-derived verb, while correctly rejecting the ungrammatical intransitive form with a derived verb consisting of a bare verb and an inchoative morpheme. On the grammatical transitive and intransitive
constructions, it was shown that the KSL learners' performance was significantly different from the native speaker's (Tukey, \( p < 0.05 \)).

The following table presents the significant effects in the 3-way ANOVA for the alternating unergative verbs:

### Table 42. 3-way ANOVA for alternating unergative pattern

<table>
<thead>
<tr>
<th>3-way ANOVA</th>
<th>F Value</th>
<th>df</th>
<th>Pr &gt; F</th>
</tr>
</thead>
<tbody>
<tr>
<td>Main effects</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>transitivity</td>
<td>36.83</td>
<td>(1, 58)</td>
<td>&lt;.0001</td>
</tr>
<tr>
<td>morphology</td>
<td>5.34</td>
<td>(1, 58)</td>
<td>0.0244</td>
</tr>
<tr>
<td>2-way interaction</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>transitivity\times morphology</td>
<td>325.49</td>
<td>(1, 58)</td>
<td>&lt;.0001</td>
</tr>
<tr>
<td>3-way interaction</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>trans\times morph\times group</td>
<td>7.00</td>
<td>(1, 58)</td>
<td>0.0105</td>
</tr>
</tbody>
</table>

A 3-way ANOVA shows that there are statistically significant main effects for transitivity (mean\( \text{trans} \) = 10.99; mean\( \text{intran} \) = 12.96) and morphology (mean\( \text{mor} \) = 11.4; mean\( \text{nonmor} \) = 12.55). In addition, a 2-way interaction (transitivity\times morphology) is also significant (mean\( \text{trans} \text{(mor-nonmor)} \) = 4.83; mean\( \text{intran} \text{(mor-nonmor)} \) = -5.98). Moreover, the 3-way interaction (transitivity\times grammaticality\times proficiency) turns out to be significant as well (beginner(mean\( \text{trans} \text{(mor-nonmor)} \)-mean\( \text{intran} \text{(mor-nonmor)} \)) = 4.61; control(mean\( \text{trans} \text{(mor-nonmor)} \)-mean\( \text{intran} \text{(mor-nonmor)} \)) = 6.2). The fact that the 3-way interaction is significant indicates that the 2-way interaction (transitivity\times morphology) is not the same for the learner and native speaker groups. This is illustrated in the following graphs:
Graph 6. 2-way interaction for alternating unergative pattern

As shown in the graphs above, there is no difference between tokens with and tokens without morphology for both transitive and intransitive constructions for both the learner and native speaker groups. It appears that the variable of morphology interacts with the variable of transitivity for both groups of subjects.

To explicate the 3-way interaction effect, I chose to examine the different patterns of the 2-way interaction effect at different levels of the third independent variable. Therefore, subsequent 2-way ANOVA was conducted for each of the subject groups. The statistically significant results are summarized in the table below.

Table 43. 2-way ANOVA for the learner and native speaker groups

<table>
<thead>
<tr>
<th></th>
<th>KSL learners</th>
<th>F Value</th>
<th>df</th>
<th>Pr &gt; F</th>
</tr>
</thead>
<tbody>
<tr>
<td>Main effect</td>
<td>transitivity</td>
<td>17.31</td>
<td>(1, 29)</td>
<td>0.0003</td>
</tr>
<tr>
<td>2-way interaction</td>
<td>transitivity×morphology</td>
<td>67.68</td>
<td>(1, 29)</td>
<td>&lt;.0001</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th>Native speakers</th>
<th>F Value</th>
<th>df</th>
<th>Pr &gt; F</th>
</tr>
</thead>
<tbody>
<tr>
<td>Main effects</td>
<td>transitivity</td>
<td>27.29</td>
<td>(1, 29)</td>
<td>&lt;.0001</td>
</tr>
<tr>
<td></td>
<td>morphology</td>
<td>4.20</td>
<td>(1, 29)</td>
<td>0.0497</td>
</tr>
<tr>
<td>2-way interaction</td>
<td>transitivity×morphology</td>
<td>859.16</td>
<td>(1, 29)</td>
<td>&lt;.0001</td>
</tr>
</tbody>
</table>
At both the learner and native speaker levels, the variable of morphology has a significantly stronger effect on acceptability judgement with transitive constructions than with intransitive constructions. Furthermore, the variable of non-morphology has a significantly stronger effect on acceptability judgement with intransitive constructions than with transitive constructions. In other words, the presence of morphology elicits higher acceptability judgement in the transitive construction, whereas the absence of morphology elicits higher acceptability judgement in the intransitive construction.

6.6. Discussion

I turn now to the question of whether the KSL learners' performance can be explained by transfer. English has one major pattern (i.e., the labile pattern) for alternating unaccusative verbs. Verbs occurring in both transitive and intransitive constructions have the same form (e.g., John opened the door/The door opened).

Unlike English, Korean has two different patterns—anticausative and causative. In the anticausative pattern the verb occurring in the transitive construction is a non-derived verb, whereas a derived verb consisting of a bare verb and an inchoative morpheme appears in the intransitive construction. In the causative pattern, on the other hand, the verb occurring in the transitive construction is a derived verb consisting of a bare verb and a causative morpheme, whereas a non-derived verb appears in the intransitive construction. Consider the following example of each pattern:

Anticausative pattern

   -nom vase-acc break-past-dec
   'John broke the vase.'
b. hwapyeng-i kkay-ci ess-ta.
    vase-nom break-incho-past-dec
'The vase broke.'

Causative pattern

(10) a. Mary-ka elum-ul nok-[-]-ess-ta.
    -nom ice-acc melt-[caus]-past-dec
'Mary melted the ice.'

b. elum-i nok-ass-ta.
    ice-nom melt-past-dec
'The ice melted.'

Based on the fact that English does not employ any morphology to mark
(in)transitivity for alternating unaccusative verbs, English-speaking learners of Korean
are expected to accept a non-derived verb in both anticausative and causative patterns in
Korean and reject a derived verb which carries an extra morpheme, be it a causative or
inchoative. In other words, they would transfer a general pattern (i.e., a non-derived verb
used both in transitive and intransitive constructions) from their L1 in identifying
alternating unaccusative verbs in the target language.

As we have already seen, English has one major pattern, unlike Korean, which
distinguishes between two different classes of alternating unaccusative verbs, i.e.,
anticausative and causative. Thus, predictions made for English-speaking learners of
Korean are based on pattern-based transfer, and not on class-based transfer, simply
because English does not distinguish between different classes of alternating
unaccusative verbs. The general pattern that they would transfer from their L1 in
identifying alternating unaccusative verbs in Korean is an NP V pattern (as in The butter
melted) for an intransitive construction or an NP V NP pattern (as in Ben melted the
butter) for a transitive construction, where a non-derived verb form is used.
In the following, I will examine predictions made for KSL learners based on pattern-based transfer along with these learners' performance on alternating unaccusative verbs in Korean. In addition, I will address the question of whether pattern-based transfer can account for the data I collected by examining each pattern. Finally, the KSL learners' performance on each pattern considered in this study will be discussed along with an alternative explanation that better accounts for the current data. I will begin by considering transitive constructions, and then turn my attention to intransitive patterns:

The transitive constructions

First, consider the following table, which illustrates the predictions made for KSL learners based on pattern-based transfer along with their performance on transitive constructions for both the anticausative and causative patterns:
First, when considering the anticausative pattern, predictions based on pattern-based transfer seem to be met, since KSL learners accepted the grammatical transitive construction and rejected the ungrammatical one. This contrasts with the KSL learners' performance on the causative pattern, where they were unsure about both grammatical and ungrammatical transitive constructions, contrary to predictions.

It is difficult to argue that KSL learners have been influenced by pattern-based transfer because the predictions made for the causative pattern are not met. If KSL learners had transferred a general pattern from their L1 in identifying alternating unaccusative verbs in Korean, their performance would have been more consistent than shown here. Let us now examine the intransitive constructions.
The intransitive constructions

Consider next the following table which illustrates the predictions made for KSL learners based on pattern-based transfer along with their performance on intransitive constructions for both the anticausative and causative patterns:

Table 45. Predictions for KSL learners and their performance on intransitive forms

<table>
<thead>
<tr>
<th>Construction Pattern</th>
<th>Intransitive (Inchoative)</th>
<th>Example</th>
<th>Prediction</th>
<th>Performance</th>
<th>Prediction (met or not)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Anticausative</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>yelta 'open',</td>
<td>gr mwun-i yel-li-ess-ta</td>
<td>reject</td>
<td>accept</td>
<td>not met</td>
<td></td>
</tr>
<tr>
<td>tatta 'close',</td>
<td>door-nom open-incho-past-dec 'The door opened'</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>kkayta 'break'</td>
<td>gr mwun-i yel-ess-ta</td>
<td>accept</td>
<td>reject</td>
<td>not met</td>
<td></td>
</tr>
<tr>
<td>Causative</td>
<td>gr pethe-ka nok-ass-ta</td>
<td>accept</td>
<td>accept</td>
<td>met</td>
<td></td>
</tr>
<tr>
<td>nokta 'melt',</td>
<td>butter-nom melt-past-dec 'The butter melted'</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>elta 'freeze',</td>
<td>gr pethe-ka nok-(a)ci-ess-ta</td>
<td>reject</td>
<td>unclear</td>
<td>not met</td>
<td></td>
</tr>
<tr>
<td>kwuluta 'roll',</td>
<td>butter-nom melt-incho-past-dec 'The butter melted'</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>toltta 'spin',</td>
<td>gr pethe-ka nok-ass-ta</td>
<td>accept</td>
<td>accept</td>
<td>met</td>
<td></td>
</tr>
<tr>
<td>thata 'burn'</td>
<td>ungr pethe-ka nok-(a)ci-ess-ta</td>
<td>reject</td>
<td>unclear</td>
<td>not met</td>
<td></td>
</tr>
</tbody>
</table>

When considering the anticausative pattern, KSL learners do not appear to have been influenced by pattern-based transfer in evaluating the intransitive construction, since they accepted the grammatical intransitive construction and rejected the ungrammatical one, contrary to predictions. Regarding the causative pattern, KSL learners accepted the grammatical intransitive construction, while showing uncertainty about the ungrammatical intransitive form. Here again, KSL learners do not appear to have transferred a general pattern from their L1 in identifying the intransitive constructions with both anticausative and causative patterns.

As I have shown, predictions based on pattern-based transfer seem to be met for some construction types but not for other constructions. The table below summarizes this:
Table 46. Constructions for which predictions are met (or are not met)

<table>
<thead>
<tr>
<th>Pattern</th>
<th>Constructions for which predictions are met</th>
<th>Constructions for which predictions are not met</th>
</tr>
</thead>
<tbody>
<tr>
<td>Anticausative</td>
<td>transitive construction</td>
<td>intransitive construction</td>
</tr>
<tr>
<td>Causative</td>
<td>transitive and intransitive construction</td>
<td></td>
</tr>
</tbody>
</table>

All in all, KSL learners do not appear to have been influenced by pattern-based transfer in evaluating the acceptability of alternating unaccusative verbs in Korean. If these learners had transferred a general pattern from their L1, they should have accepted a non-derived verb in all constructions tested because that is the form used in both transitive and intransitive constructions with alternating unaccusative verbs in their L1.

In conclusion, pattern-based transfer does not seem to be the explanation for KSL learners' performance. I will now reexamine the KSL learners' performance on transitive and intransitive constructions with both anticausative and causative patterns, and the alternating unergative patterns in that order, while providing an alternative account. Let us first look at the transitive constructions.

The transitive constructions

Consider first the following table which illustrates the KSL learners' performance on the transitive constructions with both the anticausative and causative patterns:
KSL learners were accurate in determining both grammatical and ungrammatical transitive constructions for the anticausative pattern. This contrasts with the causative pattern, where they had difficulty with both grammatical and ungrammatical transitive constructions, showing uncertainty about these constructions.

KSL learners treat individual items used in the grammatical and ungrammatical transitive constructions in the causative pattern differently. For example, they incorrectly rejected the grammatical transitive construction with the verbs thaywuta 'burn (tr.)' and thwikita 'bounce (tr.)' and accepted the ungrammatical one with the verbs thata 'burn (intr.)' and thwita 'bounce (intr.)'. The only verb that these learners correctly accepted in the grammatical and rejected in the ungrammatical transitive constructions in the causative pattern was mallita 'dry (tr.)'/maluta 'dry (intr.)'. All in all, it appears that KSL learners had difficulty with most of the alternating unaccusative verbs which belong to the causative pattern, both in the grammatical and ungrammatical transitive constructions.

<table>
<thead>
<tr>
<th>Construction Pattern</th>
<th>Transitive (Causative)</th>
<th>Performance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Anticausative</td>
<td></td>
<td></td>
</tr>
<tr>
<td>yel'ta 'open', tatta 'close', kkayta 'break'</td>
<td>gr Chelswu-ka mwun-ul yel-ess-ta -nom door-acc open-past-dec 'Chulsoo opened the door'</td>
<td>accept</td>
</tr>
<tr>
<td></td>
<td>ungr Chelswu-ka mwun-ul yel-li-ess-ta -nom door-acc open-caus-past-dec 'Chulsoo opened the door'</td>
<td>reject</td>
</tr>
<tr>
<td>Causative</td>
<td></td>
<td></td>
</tr>
<tr>
<td>nokta 'melt', elta 'freeze', kwuluta 'roll', thwita 'bounce', thata 'burn'</td>
<td>gr Sengho-ka pethe-lul nok-i-ess-ta -nom butter-acc melt-caus-past-dec 'Sungho melted the butter'</td>
<td>unclear</td>
</tr>
<tr>
<td></td>
<td>ungr Sengho-ka pethe-lul nok-ass-ta -nom butter-acc melt-past-dec 'Sungho melted the butter'</td>
<td>unclear</td>
</tr>
</tbody>
</table>
The reason why KSL learners did not perform well with the causative pattern in Korean might involve the fact that the verbs used in this pattern are less prototypical than those used in the anticausative pattern in terms of depicting a transitive event.

The verbs used in the anticausative pattern in Korean, such as *yel-ta* 'open', *tat-ta* 'close', *kkay-ta* 'break', etc., can be categorized as prototypical transitive verbs, describing an event where an agent acts on something, which are found to be acquired earlier than others by children. In this regard, Slobin (1981:187) maintains that on the semantic side the prototypical transitive event is salient not only across languages, but also in the early stages of language acquisition. On the syntactic side children show a strong bias toward the unmarked, basic or canonical sentence type of their mother tongue. For example, children identify one basic sentence type early on and use it to express the prototypical transitive event. In English that type is SVO, whereby two noun phrases surface as an argument required by the verb.

Lidz & Gleitman (2004:159) found that children learning Kanada (a Dravidian language of India) as their first language preferred argument number over the more reliable cue of causative morphology as an indicator of causative meaning. In this language, however, a causative morpheme provides a deterministic surface cue to causal meaning, and never occurs unless causal meaning is intended. On the other hand, transitivity freely occurs with or without causative meaning and with or without causative morphology. In an act-out experiment with 3-year-old children learning Kanada as their L1, Lidz & Gleitman (2004) found that these children treated two noun-phrase sentences as causative and one noun-phrase sentences as non-causative, independent of the presence
or absence of the causative morpheme. The children ignored the more reliable
morphological cue to verb meaning and instead favored the less reliable syntactic cue
(argument number). Based on this, the authors (2004:160) argue that these children use
argument number as a cue to verb meaning not just because it is there in the input, but
because they expect to find it there.

Returning now to the results of the KSL learners, it is possible that their success
on transitive patterns containing verbs such as yelta 'open', tatta 'close', kkayta 'break', etc.
reflects the fact that the events they depict in the pictures used in the experiment are
prototypically transitive. They involve the deliberate action of an animate agent on an
inanimate theme. Their expression via an underived verb form is therefore expected.

In this regard, it would be worth mentioning that Korean-learning children go
through a stage when they use a non-derived verb instead of a derived verb to express a
causative meaning until they correctly use a morphological causative. For example, they
use pes- 'take off one's clothes' for pes-ki 'undress (others)', ip- 'put on one's clothes' for
ip-hi 'dress (others)', nwup- 'lie down' for nwup-hi 'lay down', anc- 'sit down' for anc-hi
'make sit down', tol- 'turn around (intransitive)' for tol-li 'make turn around', and so on
(Kim 1997).

In conclusion, I suggest that the difficulty and/or ease of a certain pattern shown
by KSL learners has something to do with the prototypical vs. non-prototypical nature of
the verb used in that pattern in terms of describing a transitive event. In the causative
pattern with which the learners had difficulty, a non-prototypical verb expressing a
transitive event occurs in the transitive construction. On the other hand, a prototypical
verb is used in the same construction in the anticausative pattern with which the learners had less difficulty.

Let us now look at the KSL learners' performance on the intransitive constructions with both anticausative and causative patterns.

The intransitive constructions

Consider first the following table which illustrates the KSL learners' performance on intransitive constructions for both the anticausative and causative patterns:

<table>
<thead>
<tr>
<th>Construction Pattern</th>
<th>Intransitive (Inchoative)</th>
<th>Performance</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Anticausative</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>yelta 'open', tatta 'close', kkayta 'break'</td>
<td>gr</td>
<td>mwun-i yel-li-ess-ta door-nom open-incho-past-dec 'The door opened'</td>
</tr>
<tr>
<td></td>
<td>ungr</td>
<td>mwun-i yel-ess-ta door-nom open-past-dec 'The door opened'</td>
</tr>
<tr>
<td><strong>Causative</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>nokta 'melt', elta 'freeze', kwuluta 'roll', thwita 'bounce', thata 'burn'</td>
<td>gr</td>
<td>pethe-ka nok-ass-ta butter-nom melt-past-dec 'The butter melted'</td>
</tr>
<tr>
<td></td>
<td>ungr</td>
<td>pethe-ka nok-(a)ei-ess-ta butter-nom melt-incho-past-dec 'The butter melted'</td>
</tr>
</tbody>
</table>

Concerning the anticausative pattern, KSL learners were accurate in determining both grammatical and ungrammatical intransitive constructions, correctly accepting grammatical and rejecting ungrammatical forms. It should be noted, however, that these learners accepted the grammatical intransitive construction less readily than the native
speakers of Korean. Moreover, they also rejected the ungrammatical intransitive construction less readily than the native speakers.

In contrast to the anticausative pattern, KSL learners had difficulty with the ungrammatical intransitive sentences in the causative pattern, showing uncertainty over these constructions. Nevertheless, they performed well on the grammatical intransitive sentences in the same pattern, correctly accepting them.

However, it is worth noting, concerning the ungrammatical intransitive construction in the causative pattern on which KSL learners showed uncertainty, that the rejection rate by the native speakers of the same construction is somewhat lower than expected. The reason for the native speakers' low rejection rate of this construction might lie in the fact that the forms appearing in this construction which consist of a bare verb and an inchoative morpheme -ci such as nok-(a)ci-ta 'being melted', el-(e)ci-ta 'being frozen', tol-(a)ci-ta 'being spun', etc., are not ungrammatical in Korean. They are simply less natural than their counterparts like nok-ta 'melt', el-ta 'freeze', tol-ta 'spin', etc.

Thus, the fact that the KSL learners showed uncertainty about the ungrammatical intransitive construction in the causative pattern involving a derived verb consisting of a bare verb and the inchoative morpheme -ci should be understood in relation to the native speakers' response to this construction, i.e., their low rejection of this form.

All in all, KSL learners seem to have performed well on the intransitive constructions with both anticausative and causative patterns. The fact that these learners performed well on the intransitive constructions with the anticausative pattern where a derived verb consisting of a bare verb and an inchoative morpheme occurs seems surprising. Recall that the learners had difficulty with a derived verb consisting of a bare
verb and a causative morpheme occurring in the transitive construction in the causative pattern. Thus, not all derived verbs seem to cause difficulty for the learners.

The reason why KSL learners had little difficulty with the inchoative verbs such as *yel-li-ta* 'opened', *tat-hi-ta* 'closed', etc., in Korean might lie in frequency. A preliminary examination using on-line corpus research shows comparatively more use of the inchoative verbs like *yel-li-ta* 'opened' than those of the causative verbs like *nok-i-ta* 'melt', with which KSL learners had difficulty. Moreover, since these verbs are not used to denote prototypically transitive events in these cases, there is no reason to expect a preference for an underived form.

In conclusion, the KSL learners' optimal performance on the intransitive constructions with the causative pattern might lie in the verb form (i.e., a non-derived verb form) used in these constructions, such as *nok-ta* 'melt', *el-ta* 'freeze', *tha-ta* 'burn', etc. Moreover, their optimal performance on the same constructions with the anticausative pattern might be explained by frequency, albeit tentatively. I turn my attention now to the alternating unergative patterns.

**The alternating unergative pattern**

The unergative verbs to be examined here, such as *wusta* 'laugh', *wulta* 'cry', *ketta* 'walk', *cata* 'sleep', etc., alternate in transitivity in Korean. Thus, they can occur as either morphological causative transitives or as intransitives, as shown in the following examples:

    -nom baby-acc laugh-caus-past-dec
    'Sangho made the baby laugh.'
b. aki-ka wus-ess-ta.
baby-nom laugh-past-dec
'The baby laughed.'

    -nom girl-acc cry-caus-past-dec
'ninho made the girl cry.'

b. yecaai-ka wul-ess-ta.
girl-nom cry-past-dec
'the girl cried.'

These unergative verbs were put aside when the data for the two different classes of alternating unaccusative verbs (i.e., anticausative and causative) were analyzed with respect to pattern-based transfer because there is no general pattern in the L1 that contrasts with the L2 in terms of a verb form (e.g., a derived vs. non-derived verb).

Recall that the general pattern that KSL learners would transfer from their L1 in identifying alternating unaccusative verbs in Korean involved a non-derived verb form occurring in both transitive and intransitive constructions in English.

Let us reexamine the KSL learners' performance with alternating unergative verbs in Korean. Consider first the following table which illustrates these learners' performance with alternating unergative verbs:
Let us first look at the transitive constructions with alternating unergative verbs. KSL learners performed well on these constructions, correctly accepting grammatical forms and rejecting ungrammatical forms. It should be noted, however, that they did not accept the grammatical transitive construction with a derived verb consisting of a bare verb and a causative morpheme as readily as the native speaker group.

KSL learners also performed well on intransitive constructions with alternating unergative verbs, correctly accepting grammatical patterns and rejecting ungrammatical forms. The same reasoning given for these learners' performance on the intransitive construction with alternating unaccusative verbs with the causative pattern can perhaps be applied here too. In particular, the learners' correct performance on the intransitive construction with alternating unergative verbs might lie in the verb form (i.e., a non-derived verb form) used in these constructions, such as *wus-ta* 'laugh', *wul-ta* 'cry', *ca-ta* 'sleep', etc.

<table>
<thead>
<tr>
<th>Alternating Unergatives</th>
<th>gr/ ungr</th>
<th>Example</th>
<th>Performance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Transitive</td>
<td>gr</td>
<td>Sangho-ka aki-lul wul-li-ess-ta nom baby-acc cry-\textit{caus}-past-dec</td>
<td>'Sangho made the baby cry'</td>
</tr>
<tr>
<td></td>
<td>ungr</td>
<td>Sangho-ka aki-lul wul-ess-ta nom baby-acc cry-past-dec</td>
<td>reject</td>
</tr>
<tr>
<td>Intransitive</td>
<td>gr</td>
<td>aki-ka wul-ess-ta baby-nom cry-past-dec</td>
<td>'The baby cried'</td>
</tr>
<tr>
<td></td>
<td>ungr</td>
<td>aki-ka wul-(e)i-ess-ta baby-nom cry-incho-past-dec</td>
<td>reject</td>
</tr>
</tbody>
</table>
The real challenge is how to explain these learners' optimal performance on the transitive constructions, where a derived verb consisting of a bare verb and a causative morpheme occurs. It appears that the learners could clearly distinguish between a grammatical and ungrammatical form used in these constructions, which is different from their performance on the transitive constructions with the causative pattern. For example, they were unsure about both grammatical and ungrammatical transitive constructions with the causative pattern.

Frequency does not appear to play a role in the difference in the learners' performance. For example, an on-line corpus examination revealed no difference in frequency between a morphological causative (e.g., *wul-li-ta* 'make cry') whose intransitive counterpart is unergative and one (e.g., *nok-i-ta* 'melt') whose intransitive counterpart is unaccusative. Both causatives seem to be used at a similarly low rate. Future research should investigate whether the membership of a certain intransitive verb has anything to do with the difficulty and/or ease of learning a morphological causative of this intransitive verb.

Overall, KSL learners performed well on both transitive and intransitive constructions with almost all of the patterns investigated in this study. For example, they were accurate with both transitive and intransitive constructions with the anticausative pattern, as well as with the alternating unergative pattern. The pattern with which they had the most trouble involves the causative. They were relatively accurate with the intransitive construction with this pattern but were unsure about the transitive construction, both grammatical and ungrammatical.
What is special about the transitive construction with the causative pattern? As I have argued, the verbs used in this construction are not prototypical in describing a transitive event where an agent brings about a change of state or location in a patient by means of direct body contact, defined by Slobin (1981), which might cause difficulty for the learners. In particular, the verbs like nok-i-ta 'melt', el-li-ta 'freeze', mal-li-ta 'dry', etc., the causative form of unaccusatives, which were used in this experiment to depict prototypical transitive events (an animate agent acting on an inanimate theme), in general denote natural processes that take place without human intervention. This may have something to do with the intermediate scores these forms elicited.

A problem with the argument that a derived verb causes difficulty is that KSL learners performed well on the intransitive construction with the anticausative pattern, where a derived verb consisting of a bare verb and an inchoative morpheme occurs, such as yel-li-ta 'opened', tat-hi-ta 'closed', etc. They also performed well on the grammatical transitive form with alternating unergative verbs in Korean in which a derived verb consisting of a bare verb and a causative morpheme appears, such as wul-li-ta 'make cry', wus-ki-ta 'make laugh', cay-wu-ta 'make sleep', etc.

I have suggested that frequency might also affect the learners' performance. For example, KSL learners might have encountered a derived verb consisting of a bare verb and an inchoative morpheme occurring in the intransitive construction with the anticausative pattern more frequently than one consisting of a bare verb and a causative morpheme appearing in the transitive construction with the causative pattern. A preliminary examination based on on-line corpus research seems to suggest this.
Future research should be more rigorous in exploring whether frequency actually plays a role in the learners' performance with derived verbs in Korean which consist of a bare verb and a causative and/or inchoative morpheme.

In considering the anticausative and causative patterns investigated in this study, it appears that KSL learners do not seem to have transferred a general pattern from their L1 in identifying alternating unaccusative verbs in Korean. They did not prefer a non-derived verb to a derived one following their L1 patterns, for example, in identifying these verbs in Korean.

The reason that a pattern-based transfer effect is not readily found in KSL learners in this study could lie in the fact that the learners who participated in this study might not be true low-level learners from whom one could expect to find more transfer. In fact, they might well be beyond the stage at which a transfer effect can be found more readily, i.e., the initial stage focused on by Schwartz & Sprouse (1996). Their optimal performance on the various constructions tested in this study appears to support this notion.
Chapter 7
Lexical/Morphological vs. Syntactic Causative

7.1. Introduction

The objective of this section is to assess L2 learners' knowledge of the semantic and syntactic differences between the lexical/morphological and syntactic causative in the target language. The term *lexical causative* is used for English and *morphological causative* for Korean since a non-derived verb is used in English, while a causative morpheme is attached to the verb root in Korean for the majority of the corresponding lexical causative verbs in English.

English and Korean each have two different kinds of causative constructions, i.e., a lexical/morphological and a syntactic causative. It is commonly believed that the two causative constructions are associated with a different type of meaning. For example, a lexical/morphological causative usually involves direct causation, while a meaning of indirect causation is associated with a syntactic causative.

In this chapter, the entailment relations associated with lexical/morphological and syntactic causatives in English and Korean are examined to determine whether L2 learners could detect these relations in the target language. More specifically, the question is whether L2 learners would transfer the entailment relation associated with a lexical/morphological and syntactic causative construction from their L1 when assessing these constructions in L2.

The remainder of this chapter is organized in six sections. The first section discusses two different types of causatives in English and Korean, i.e., lexical/
morphological and syntactic, with respect to their semantic and syntactic differences. The second section introduces the entailment relations associated with morphological and syntactic causatives in Korean. The third section outlines differences in the entailment relations associated with lexical/morphological and syntactic causatives between English and Korean. The fourth section presents the ESL study with subsections on research questions, participants, the task, results, and a discussion. The KSL study is covered in the fifth section. Finally, the sixth section draws some general conclusions.

7.2. Two different types of causatives

The causative construction involved in the causative/inchoative alternation, the focus of the first experiment, is a lexical/morphological causative, exemplified in the following English and Korean examples.

(1) a. John melted the ice. (lexical causative)
   
   b. John-i elum-ul nok-[i]-ess-ta. (morphological causative)
      -nom ice-acc melt-caus-past-dec
      'John melted the ice.'

Causation in English and Korean, shown in (1a) and (1b) respectively, can also be expressed by means of a syntactic causative as in (2b) and (3b) below, albeit differing in meaning.

(2) a. John melted the ice. (direct causation)
   
   b. John made the ice melt. (indirect causation)

(3) a. John-i elum-ul nok-[i]-ess-ta. (direct causation)
   
   -nom ice-acc melt-caus-past-dec
   'John melted the ice.'
b. John-i elum-ul nok-\underline{key} ha-yess-ta. (indirect causation)
   nom ice-acc melt-\underline{comp} do-past-dec
   'John made the ice melt.'

As demonstrated above, there are two distinct types of causatives both in English
and Korean. English has lexical and syntactic causatives, shown in (2a) and (2b)
respectively, whereas Korean has morphological and syntactic causatives\(^\text{11}\), shown in (3a)
and (3b) respectively. The morphological causative in Korean is comprised of the verb
root plus a causative morpheme, such as \(i/hi/li/ki\). Thus, transitive verbs with the
causative pattern which participate in the causative/inchoative alternation in Korean, such
as \(nok-i-ta\) (melt-caus-dec) 'melt', \(el-li-ta\) (freeze-caus-dec) 'freeze', \(tol-li-ta\) (spin-caus-dec) 'spin', \(kwul-li-ta\) (roll-caus-dec) 'roll', etc., are examples of a morphological
causative. On the other hand, a syntactic causative in Korean has the \(-\underline{key} hata\) form
\((-\underline{key} is a complementizer and hata is a verb with the meaning 'do').

According to Shibatani (1975), the main semantic difference between the
morphological causative and the syntactic causative in Korean lies in the role of the
cauzer in bringing about the caused event. In a situation in which the causee is seen as a
nonvolitional agent, the causer must physically manipulate the causee in bringing about
the caused event. It is this manipulative causation that the morphological causative
usually expresses. Thus, forms such as \(ip-hi-ta\) (put on-caus-dec) 'dress' or \(mek-i-ta\) (eat-
caus-dec) 'feed' are appropriate in a situation in which the causer physically manipulates

\(^{11}\) There are other types of causatives in Korean aside from morphological and syntactic causatives, such as
\(sikhi-ta\)-causatives 'make someone do something', shown in the following example, which is not
considered in this study:

\(\text{e.g. emma-ka Swuni-hanthey selkeci-lul sikhi-ess-ta.}
mother-nom -dat dish wash-acc make-past-dec 'The mother made Sooni wash dishes.'\)
the causee. Another type of causation involves a situation in which the causee is a volitional agent, and the causer just gives directions to the causee. The syntactic -key *hata* form normally expresses this situation. The following examples show this:

(4) a. emma-ka ai-hanthey pap-ul mek-[i]-ess-ta.
   mother-nom child-dat rice-acc eat-caus-past-dec
   'The mother fed the child rice.'

   b. emma-ka ai-hanthey pap-ul mek-[key ha]-yess-ta.
      mother-nom child-dat rice-acc eat-comp do-past-dec
      'The mother made the child eat rice.'

The example (4b), which is a syntactic causative, can be used in a situation where the mother is not directly involved in the child's eating rice, whereas the mother is the active participant in the same event in (4a), which is a morphological causative. Here, she actually fed the child rice.

The fact that there are two distinct types of causatives in Korean, morphological and syntactic, has interested many linguists for several decades and there has been a great deal of debate about whether these two types of causatives are semantically the same or different. It has been assumed by the majority, though, that morphological and syntactic causatives in Korean differ in meaning. This view is most notably represented by Shibatani (1975), who maintains that if there are two different forms of causatives in a language, they cannot be the same.
7.3. Entailment Relation in Morphological and Syntactic Causatives in Korean

The relevance of entailment to Korean causatives was recognized by Patterson (1974), who proposed that although both *ha* and *I* are causative morphemes, only the latter entails result (the morphological causative morpheme *I* represents several allomorphs in Korean, such as *i, hi, li, ki*, among others):

(5) a. Ku-ka na-eykey kimchi-lul mek-?key ha-yess-una,  
he-sub I-obl -obj eat-comp do-past-adversative
'He caused me to eat kimchi, but ...'

b. Ku-ka na-eykey kimchi-lul mek-?I-ess-una,  
he-sub I-obl -obj eat-caus-past-adversative
'He fed me kimchi, but ...'

Patterson suggests that the first, but not the second, may be continued without contradiction by the following.

Na-ka mek-ci an(i)-ha-ess-ta.  
I-sub eat-comp not-do-past-dec
'I didn't eat kimchi.'

According to Patterson (1974), the conceptual independence of the result clause is signaled in Korean by its physical separation from the causative morpheme *ha*; its conceptual dependence, by its fusion with the causative morpheme *I*.

The relation of entailment posited for the morphological causative in Korean, however, turns out to be very controversial among Korean speakers. This observation led to an experiment whose goal was to determine to what extent morphological causatives in

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12 Strictly speaking, the term *entailment relation* used for Korean causatives should be *non-entailment relation*, because Korean causatives do not strictly entail the success of the causation. Throughout this section, however, the term *entailment relation* is used for both English and Korean causatives for the sake of convenience.
Korean can be followed with a 'but-clause' without contradiction. The following describes the experiment.

Subjects:

Twelve native speakers of Korean were recruited for this experiment. They are in their twenties and thirties, and are all graduate students at the University of Hawai‘i at Mānoa.

Procedure:

Subjects are asked to indicate whether they think the given sentence can or cannot be expressed in the given context, by marking O or X (O for acceptance and X for non-acceptance). Contexts and example sentences are shown to subjects in Korean. Subjects are also instructed not to spend too much time judging the acceptability of each sentence.

Material:

Fourteen sentence pairs with different morphological causatives in Korean were used in the main experiment. The first part of each sentence pair involved a morphological causative in Korean, which was accompanied by an appropriate context. Consider the following example:

Context 1-1: *Mother is worried that her child has not eaten well recently. She has made things her child likes. She tries hard to make the child eat rice.*

   mother-nom child-dat rice-ace with force eat-caus-pst-dec  
   'Mother made the child eat rice.'
The second part of the sentence pair contains a morphological causative followed by a 'but-clause', adopting Patterson's negation test. An appropriate context is also provided here. Consider the following example:

Context 1-2: The child says that she doesn't want to eat right now. Mother tells her to eat a little bit at least. However, no matter how hard mother tries to make the child eat rice, she refuses to eat by not opening her mouth.


Results:

The table below illustrates the subjects' responses on the first part of the sentence pairs, which contains a plain declarative morphological causative in Korean.

<table>
<thead>
<tr>
<th>Table 50. Sentences with a morphological causative</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sentence</td>
</tr>
<tr>
<td>1-1   Mother made the child eat.</td>
</tr>
<tr>
<td>2-1   Grandmother dressed her granddaughter.</td>
</tr>
<tr>
<td>3-1   Father made his daughter starve.</td>
</tr>
<tr>
<td>4-1   Teacher took off his student's hat.</td>
</tr>
<tr>
<td>5-1   Mother made her child accept to be held by grandmother.</td>
</tr>
<tr>
<td>6-1   Father made the brother sit on the chair.</td>
</tr>
<tr>
<td>7-1   Teacher made students walk.</td>
</tr>
<tr>
<td>8-1   John made Mary laugh.</td>
</tr>
<tr>
<td>9-1   Mother made her child wash her hair.</td>
</tr>
<tr>
<td>10-1  Sister made her brother urinate.</td>
</tr>
<tr>
<td>11-1  Teacher made Youngsoo read.</td>
</tr>
<tr>
<td>12-1  The housemaid made Minho play.</td>
</tr>
<tr>
<td>13-1  Youngsoo made ice melt.</td>
</tr>
<tr>
<td>14-1  Minho made a kite fly.</td>
</tr>
</tbody>
</table>
The subjects' responses on the second part of the sentence pairs involving a morphological causative followed by a 'but-clause' in Korean are presented in the following table:

**Table 51. Sentences with a morphological causative followed by a 'but-clause'

<table>
<thead>
<tr>
<th>Sentence</th>
<th>Response</th>
</tr>
</thead>
<tbody>
<tr>
<td>1-2 Mother made the child eat, but she didn't eat.</td>
<td>11</td>
</tr>
<tr>
<td>2-2 Grandmother dressed her granddaughter, but she didn't put it on.</td>
<td>9</td>
</tr>
<tr>
<td>3-2 Father made his daughter starve, but she didn't starve.</td>
<td>8</td>
</tr>
<tr>
<td>4-2 Teacher took off his student's hat, but he didn't take it off.</td>
<td>6</td>
</tr>
<tr>
<td>5-2 Mother made her child accept to be held by grandmother, but she</td>
<td>9</td>
</tr>
<tr>
<td>didn't accept to be held.</td>
<td></td>
</tr>
<tr>
<td>6-2 Father made the brother sit on the chair, but he didn't sit.</td>
<td>9</td>
</tr>
<tr>
<td>7-2 Teacher made students walk, but they didn't walk.</td>
<td>5</td>
</tr>
<tr>
<td>8-2 John made Mary laugh, but she didn't laugh.</td>
<td>12</td>
</tr>
<tr>
<td>9-2 Mother made her child wash her hair, but she didn't wash her hair.</td>
<td>8</td>
</tr>
<tr>
<td>10-2 Sister made her brother urinate, but he didn't urinate.</td>
<td>9</td>
</tr>
<tr>
<td>11-2 Teacher made Youngsoo read, but he didn't read.</td>
<td>9</td>
</tr>
<tr>
<td>12-2 The housemaid made Minho play, but he didn't play.</td>
<td>7</td>
</tr>
<tr>
<td>13-2 Youngsoo made ice melt, but it didn't melt.</td>
<td>11</td>
</tr>
<tr>
<td>14-2 Minho made a kite fly, but it didn't fly.</td>
<td>12</td>
</tr>
</tbody>
</table>

(The English translations for the B-type sentences might sound illogical to native speakers of English, for whom the causing event *make* and the caused event *eat* for (1-2), for example, represent a single event, so that it is impossible to negate only the caused event. In Korean, however, the corresponding expressions can be used because they represent two distinct events instead of one, so that only the caused event can be negated.)

**Analysis:**

**A. Sentences with a morphological causative**

As expected, subjects accepted the majority of sentences with a morphological causative. Sentences with nine morphological causatives were judged to be acceptable by all subjects. Among the five sentences which did not receive full acceptance, sentences with the causative *kel-li-ta* (make walk) had the least acceptance, i.e., five subjects out of twelve rejected the sentence. Sentences with the causatives *nol-li-ta*
(make play) and an-ki-ta (make accept to be held) had four and two rejections each, respectively. Sentences with the causatives kwulm-ki-ta (make starve) and kam-ki-ta (make wash hair) had one rejection each. Subjects in this study seem to dislike sentences with the morphological causatives nol-li-ta (make play) and kel-li-ta (make walk). They would rather use syntactic causatives nolkey hata (make play) and ketkey hata (make walk), for example. One of the subjects who rejected the sentence with the causative nol-li-ta said that she would not use it herself, but would not necessarily consider it to be wrong if she heard somebody say it. All in all, it can be argued that the subjects accepted sentences with a morphological causative used in this study.

B. Sentences with a morphological causative followed by a 'but-clause'

Now consider the test items in which a clause with a morphological causative is followed by a 'but-clause.' For example, subjects showed a perfect to near perfect acceptance for the majority of sentences tested in this study, which had a 'but-clause' after the morphological causative. For example, sentences with the morphological causatives wus-ki-ta (make laugh) and nal-li-ta (make fly) received a perfect acceptance from all of the subjects. Sentences with the causatives mek-i-ta (feed) and nok-i-ta (make melt) each received an almost perfect acceptance, i.e., eleven subjects out of twelve accepted them. Sentences with the causatives ip-hi-ta (dress), an-ki-ta (make accept to be held), anc-hi-ta (make sit), nwu-i-ta (make urinate), ilk-hi-ta (make read) were accepted by nine subjects. Eight subjects accepted sentences with the causatives kwulm-ki-ta (make starve) and kam-ki-ta (make wash hair); seven subjects the sentence with the causative nol-li-ta (make play); six subjects the sentence with the causative pes-ki-ta (take off); and five subjects the sentence with the causative kel-li-ta (make walk).
It is interesting to see that subjects who rejected sentences with a morphological causative without a 'but-clause' also rejected sentences with the same morphological causative followed with a 'but-clause.' Thus, subjects who rejected the sentence with the causative kwulm-ki-ta (make starve) without a 'but-clause' also rejected the same sentence followed with a 'but-clause.' The same is true of sentences with the causatives an-ki-ta (make accept to be held), for which two subjects rejected the sentence without a 'but-clause', as well as the same sentence followed with a 'but-clause.' Similarly, five subjects who rejected the sentence with the causative keln-li-ta (make walk) also rejected this sentence, which was followed with a 'but-clause.' Additionally, one subject who rejected the sentence with the causative kam-ki-ta (make wash hair) also rejected the same sentence followed with a 'but-clause.' The only exception involves the sentence with the causative nol-li-ta (make play), which four subjects rejected without a 'but-clause.' Interestingly, one of these subjects accepted this sentence, although it was followed with a 'but-clause.'

Discussion:

 Morphological causatives used in this study involve an-ki-ta 'make accept to be held', anc-hi-ta 'make sit', kel-li-ta 'make walk', us-ki-ta 'make laugh', pes-ki-ta 'make take off', among others, in which there are both a causer and a causee. Sentences with the morphological causatives that involve a causer and a causee are accepted by the majority of the subjects, even when they are followed with a 'but-clause.' There are, however, sentences with certain morphological causatives that are rejected by some subjects, when they are followed with a 'but-clause'; those causatives include keln-li-ta 'make walk', pes-
ki-ta 'make take off', and nol-li-ta 'make play.' As noted above, however, subjects who rejected the sentences when they were followed with a 'but-clause' also rejected them even when they were not followed with a 'but-clause.' Thus, for these subjects the question is not whether they accept or reject a sentence with a morphological causative when it is negated afterwards, but whether they accept or reject a sentence with a certain morphological causative at all.

According to Patterson (1974), it should not be possible for a clause with a morphological causative to be followed with a 'but-clause', since in a morphological causative cause and result are fused, and therefore just negating the result would yield a contradiction. However, the results shown in the study above strongly suggest that her claim does not hold for morphological causatives in Korean. For example, most of the causative constructions used in the study can be combined with a 'but-phrase', showing the independence of cause and result in these constructions. This, in turn, nullifies the distinction between morphological and syntactic causatives in Korean in terms of an entailment relationship. In other words, neither a morphological causative nor a syntactic causative exhibits an entailment relation in Korean.

7.4. Difference between English and Korean in Terms of Entailment Relation

English stands in a perfect opposition with Korean in terms of an entailment relation. For example, in English, neither a lexical nor a syntactic causative can be combined with a 'but clause' without contradiction ((a) is a lexical and (b) a syntactic causative):
(6) a. *John melted the butter, but it didn't melt.
   b. *John made the butter melt, but it didn't melt.

   The fact that sentences (6a) and (6b) are both unacceptable shows that the same entailment relation holds for both the lexical and syntactic causatives in English, i.e., in these constructions the causing and caused event are fused. In other words, both lexical and syntactic causatives in English require that the caused event occur. That is why negating the caused event results in contradiction. Now, compare sentences (6a) and (6b) to the Korean counterparts ((a) is a morphological and (b) a syntactic causative):

(7) a. Swuni-ka pethe-lul yelsimhi nok-\textsuperscript{1}ess-una,
    -nom butter-acc with effort melt-caus-past-but
    pethe-ka nok-ci anh-ass-ta.
    butter-nom melt-comp not-past-dec.
   'With great effort, Sooni melted the butter, but it didn't melt.'

   b. Swuni-ka pethe-lul nok-\textsuperscript{key} ha-yess-una,
    -nom butter-acc melt-comp do-past-but
    pethe-ka nok-ci anh-ass-ta.
    butter-nom melt-comp not-past-dec.
   'Sooni made the butter melt, but it didn't melt.'

   Unlike English, the corresponding examples in Korean are both acceptable, indicating that the same entailment relation holds for both the morphological and syntactic causative in Korean, i.e., in these constructions the causing and caused event are not fused. In other words, morphological and syntactic causatives in Korean do not differ in terms of the entailment relation, suggesting that neither causative requires that the caused event occur.
7.5. ESL Study

In English both the lexical and syntactic causatives require that the caused event occur, thus making it impossible to negate the resultant state in both constructions. The relevant question of this issue is whether Korean-speaking learners of English (ESL) could recognize the entailment relations associated with lexical and syntactic causatives in the target language. In the following, the ESL study is reported with subsections on hypotheses, research questions, an experiment design, results, and a discussion.

7.5.1. Hypothesis

The hypothesis tested in this study is based on the premise that language-particular semantic characteristics are likely to transfer in an L2 learning situation. The hypothesis tested is as follows:

**Hypothesis:** ESL learners, both beginner-level and advanced, rely on their L1 knowledge in assessing the entailment relations associated with the lexical and syntactic causative in English. In other words, the entailment relations associated with the morphological and syntactic causative in Korean would be transferred when learners judge acceptability of the lexical and syntactic causative followed with a 'but-clause' in English.

**Predictions:** ESL learners will accept both lexical and syntactic causative constructions followed with a 'but-clause' in English. The following table exemplifies this:

<table>
<thead>
<tr>
<th>Predictions</th>
<th>Learners</th>
<th>Beginner-level</th>
<th>Advanced</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lexical causative</td>
<td></td>
<td>accept</td>
<td>accept</td>
</tr>
<tr>
<td>Syntactic causative</td>
<td></td>
<td>accept</td>
<td>accept</td>
</tr>
</tbody>
</table>

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7.5.2. Research Questions

This study seeks to determine the extent to which Korean learners of English transfer their L1 knowledge in identifying those semantic and/or syntactic characteristics specific to the two different types of causative constructions in L2. More specifically, the question revolves around whether ESL learners make use of their L1 knowledge that both the morphological and syntactic causatives in Korean do not require that the caused event occur, in assessing the relation of entailment regarding the lexical and syntactic causative in English. This study attempts to answer the following questions:

i. Do Korean learners of English, both beginner-level and advanced, incorrectly accept the lexical causative construction followed with a 'but clause' in English because the corresponding morphological causative is allowed in their native language? For example, do they judge the sentence *John melted the ice, but it didn't melt in English to be non-contradictory?

ii. Do Korean learners of English, both beginner-level and advanced, incorrectly accept the syntactic causative construction followed with a 'but clause' in English because the corresponding syntactic causative is allowed in their native language? For example, do they judge the sentence *John made the ice melt, but it didn't melt in English to be non-contradictory?

7.5.3. Experiment Design

Subjects:

The same subjects who participated in the first experiment of this dissertation, which examined the L2 acquisition of the causative/inchoative alternation, took part in
the experiment at hand. There were seventy beginner-level and thirty-eight advanced learners. In addition, twenty native speakers of English served as controls.

Task:

The main task is designed to test whether Korean learners of English could identify that both lexical and syntactic causatives in English require the causation to be successful (in other words, the caused event has taken place). In order to familiarize subjects with the task at hand, they were instructed about the task involved in the experiment as well as the procedure. For example, they were told that the task was about identifying a contradicting and/or non-contradicting sentence. The examples given for these sentences include the following: *John hit Tom, but he didn't do it* for a contradiction and *Mary drank a lot of water, but she is still thirsty* for a non-contradicting sentence. They were further told that the same procedure adopted in the first experiment of this dissertation was used here, i.e., they had to mark a number on a five-point scale (1 for least natural and 5 for most natural), based on their judgment on the sentences tested.

Twenty-eight experimental items for causative sentences were included in the task, as well as twelve distractor items for non-causative sentences. Among the experimental items twelve items involve a lexical causative in English, and the other sixteen a syntactic causative sentence. The reason why the test items for a lexical causative are fewer than those for a syntactic causative construction is that some of the verbs used in the task such as *sleep, cry, laugh* etc. cannot appear in a lexical causative construction in English, whereas they can in a syntactic causative form. As for the distractor items, six of them involve a contradicting non-causative in English, and the
other six a non-contradicting non-causative sentence. An important reason for having the
distractor items in the task is to determine whether subjects could distinguish a
contradicting from a non-contradicting sentence, the main focus of the experiment at
hand. A total of forty items, both experimental and distractor, are counterbalanced and
given to subjects in a random order.

Test sentences:

The distractor sentences are either contradicting or non-contradicting non-
causative sentences. The experimental items, on the other hand, are either contradicting
lexical or syntactic causative sentences in English followed with a 'but-clause.' To make
English lexical causatives potentially more plausible on a non-entailing interpretation, an
adverbial phrase "with great effort" was used at the beginning of the causative. The
following table illustrates both experimental and distractor items used in the current task
(see Appendix III for more details):

Table 53. Experimental and distractor items

<table>
<thead>
<tr>
<th>Distractor Items</th>
<th>Experimental Items</th>
<th>Example</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. Contradicting non-causative</td>
<td>*It rained, but it didn't rain.</td>
<td></td>
</tr>
<tr>
<td>b. Non-contradicting non-causative</td>
<td>Will went to school, but he didn't go into the classroom.</td>
<td></td>
</tr>
<tr>
<td>c. Contradicting lexical causative</td>
<td>*With great effort, John melted the butter, but it didn't melt.</td>
<td></td>
</tr>
<tr>
<td>d. Contradicting syntactic causative</td>
<td>*Bill made the ice melt, but it didn't melt.</td>
<td></td>
</tr>
</tbody>
</table>
7.5.4. Results

Table 54 below shows mean and standard deviations on the distractor items involving both contradicting and non-contradicting sentences:

Table 54. Distractor Items: Means, and Standard Deviations on Contradicting and Non-contradicting Sentences

<table>
<thead>
<tr>
<th>Distractor Items</th>
<th>Beginner</th>
<th></th>
<th>Advanced</th>
<th></th>
<th>Native</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>M</td>
<td>SD</td>
<td>M</td>
<td>SD</td>
<td>M</td>
<td>SD</td>
</tr>
<tr>
<td>Contradicting</td>
<td>1.38</td>
<td>0.51</td>
<td>1.15</td>
<td>0.28</td>
<td>1.30</td>
<td>0.54</td>
</tr>
<tr>
<td>Non-contradicting</td>
<td>4.23</td>
<td>0.63</td>
<td>4.79</td>
<td>0.29</td>
<td>4.72</td>
<td>0.33</td>
</tr>
</tbody>
</table>

Results of the distractor sentences show that both the learner and native speaker groups correctly identified contradicting and/or non-contradicting sentences.

Table 55 below shows mean and standard deviations on the experimental items involving both lexical and syntactic causative sentences in English followed with a 'but-clause.' Figure 7 depicts mean responses on these two causative constructions:
Table 55. Experimental Items: Means, and Standard Deviations on Lexical and Syntactic Causatives

<table>
<thead>
<tr>
<th>Causative</th>
<th>Beginner</th>
<th>Advanced</th>
<th>Native</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>M</td>
<td>SD</td>
<td>M</td>
</tr>
<tr>
<td>Lexical</td>
<td>2.90</td>
<td>0.98</td>
<td>2.61</td>
</tr>
<tr>
<td>Syntactic</td>
<td>2.98</td>
<td>1.02</td>
<td>2.42</td>
</tr>
</tbody>
</table>

Figure 7 Mean responses on lexical and syntactic causative constructions

As shown in Figure 7, beginner-level learners seem somewhat unsure, neither accepting nor rejecting both lexical and syntactic causative forms in English. The following figure shows beginner-level learners' responses on the lexical and syntactic causatives in English involving individual verbs tested in terms of the acceptance and/or rejection of these causatives.
As shown in Figure 8, lexical causatives with certain verbs (e.g., *sit, walk, dress,* etc.) are rejected more readily than with other verbs (e.g., *roll, bounce, wake up, fly, feed,* etc.). There is a great variation among verbs in the syntactic causatives; for example, some syntactic causatives with verbs such as *melt, freeze, dry, cry,* etc. are rejected more readily than with verbs like *wake up, sit, fly, feed, dress, sleep, read,* etc.

Turning now to the advanced ESL learners, at first glance, they appear to have rejected both lexical and syntactic causatives followed with a 'but-clause' in English (see Figure 1). They also appear to have rejected the syntactic causative more readily than the lexical causative.

Figure 9 below shows the advanced ESL learners' responses on both lexical and syntactic causative constructions involving different verbs used in the task.
As shown in Figure 9, there is a variation among verbs in the lexical causative followed with a 'but-clause' in English: lexical causatives with some verbs like melt, freeze, wake up, sit, etc. are rejected more readily than with verbs such as roll, bounce, spin, fly, etc. There is an even greater variation in the syntactic causative form followed with a 'but-clause' in English: syntactic causatives with verbs such as melt, freeze, roll, bounce, etc. are more readily rejected than with verbs like sit, walk, feed, etc.

Compared to the learner groups, beginner-level and advanced, the native speaker group strongly rejected both the lexical and syntactic causative constructions followed with a 'but-clause' in English. For example, a great difference in the rejection rates between beginner-level ESL learners and the native speakers of English, on one hand, and between advanced ESL learners and the native speakers, on the other, was found, i.e.,
the native speaker group rejected the two causative constructions at a greatly higher rate than the learner groups.

An additional analysis was performed to determine how many of native speakers accepted (with responses 4 and 5) the lexical causative followed with a 'but-clause' in English for at least 3 items out of 12 (25%), and the syntactic causative for at least 4 items out of 16 (25%).

Note that both lexical and syntactic causatives in English underlie a structural constraint. In particular, these two causatives require that the caused event occur. That is why it is impossible to negate the caused event in these two causatives (e.g., *John melted the ice, but it didn't melt or *John made the ice melt, but it didn't melt). It is assumed that native speakers of English would show the structural constraint which underlies English causatives. With regard to the analysis, strictly speaking, the acceptance of only one lexical or syntactic causative in English followed with a 'but-clause' by native speakers would indicate their lack of the constraint. However, setting the criterion up to 3 or 4 items in terms of the acceptance of these causatives is based on the consideration that various things could happen in an experiment situation, such as a performance error.

Results show that 1 native speaker (5%) out of 20 accepted the lexical causative followed with a 'but-clause' in English for at least 3 items out of 12, although none of them accepted the syntactic causative followed with a 'but-clause' for at least 4 items out of 16.
The following table shows the overall responses by native speakers of English on lexical and syntactic causatives followed with a 'but-clause' in English with those verbs which they accepted:

Table 56. Native speakers' responses on causatives with those verbs that they accepted

<table>
<thead>
<tr>
<th>Causative</th>
<th>Verb</th>
<th>No</th>
<th>Verb</th>
<th>No</th>
<th>Verb</th>
<th>No</th>
<th>Verb</th>
<th>No</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lexical causative</td>
<td>roll</td>
<td>1</td>
<td>bounce</td>
<td>2</td>
<td>spin</td>
<td>2</td>
<td>feed</td>
<td>5</td>
<td>10*</td>
</tr>
<tr>
<td>Syntactic causative</td>
<td>spin</td>
<td>1</td>
<td>fly</td>
<td>1</td>
<td>sit</td>
<td>1</td>
<td>put on</td>
<td>3</td>
<td>6</td>
</tr>
</tbody>
</table>

*Among ten, four positive responses come from one particular subject, who accepted the lexical causative with each of the items considered here, i.e., roll, bounce, spin, and feed.

As shown in the table above, some verbs were accepted more readily than others when they occur in lexical and syntactic causatives followed with a 'but-clause' in English. For example, the verb feed was accepted more readily than other verbs when it appears in the lexical causative followed with a 'but-clause' in English. In addition, the verb put on was accepted more readily than other verbs when it occurs in the syntactic causative followed with a 'but-clause' in English. All in all, the responses given by the native speakers regarding their acceptance of the lexical and syntactic causatives followed with a 'but-clause' in English with some specific verbs appears rather sporadic and insignificant. Consider the fact that there is a total of 20 native speakers, and 12 items are used for the lexical and 16 items for the syntactic causative followed with a 'but-clause' in the English study. Thus, the ten positive responses to the lexical causative patterns followed with a 'but-clause' account for only 4% of the total of 240 responses (20×12). In the same vein, the six positive responses to the syntactic causative patterns followed with a 'but-clause' represent only about 2% of the total of 320 responses (20×16).
Turning now to the learner group, results show that 42 beginner-level ESL learners out of 70 (60%) accepted the lexical causative and 40 learners (57%) accepted the syntactic causative followed with a 'but-clause' in English. In addition, 22 advanced learners out of 38 (58%) accepted the lexical causative, while 18 learners (47%) accepted the syntactic causative followed with a 'but-clause' in English.

In order to determine how different the performance is among various subject groups on the lexical and syntactic causative forms followed with a 'but-clause' in English, a 2-way mixed ANOVA is run with repeated measures on constructions (lexical and syntactic causatives). The results show that there is a main effect only for proficiency ($F(2, 125) = 32.84, p < 0.0001$), indicating a significant difference in performance among different subject groups on the lexical and syntactic causative forms followed with a 'but-clause' in English, i.e., beginner-level learners rejected these two causative constructions the least, whereas native speakers rejected them the most. In addition, advanced learners rejected the two causative forms more than beginner-level learners but less than native speakers.

7.5.5. Discussion

English causatives require that the causation be successful. Therefore, it is impossible to negate the caused event in these causatives. The overall high rejection rate of the lexical and syntactic causatives followed with a 'but-clause' by native speakers of English seems to indicate that these causatives obey a structural constraint. In addition, the fact that few if any of the native speakers accepted the lexical and syntactic causatives followed with a 'but-clause' in English also supports the idea of an existence of a
structural constraint in these causatives in English. For example, only 5% of the native speakers (one person) accepted the lexical causative followed with a 'but-clause' in English for at least 3 items out of 12, while none of them accepted the syntactic causative for at least 4 items out of 16.

Turning now to the beginner-level learners' performance on both lexical and syntactic causatives followed with a 'but-clause' in English, at first glance, they seem uncertain about these causatives. However, they rejected both lexical and syntactic causatives followed with a 'but-clause' in English at a considerably lower rate than the native speakers.

Furthermore, the fact that 60% of the beginner-level learners accepted the lexical causative followed with a 'but-clause' in English for at least 3 items out of 12 (and 57% of them accepted the syntactic causative for at least 4 items out of 16) seems to indicate their lack of a structural constraint that underlies the lexical and syntactic causatives in English. Therefore, for those beginner-level learners who accepted lexical and/or syntactic causatives followed with a 'but-clause' in English, I suggest that they have transferred the entailment relations associated with morphological and syntactic causatives from their L1.

Let us now look at the advanced ESL learners. Based on the mean responses on both lexical and syntactic causatives followed with a 'but-clause' in English, at first glance, these learners seem to have rejected both of these causatives. However, as with the beginner-level learners, the advanced learners rejected these two causatives at a considerably lower rate than the native speakers. Furthermore, 58% of the advanced learners accepted the lexical causative followed with a 'but-clause' in English for at least
3 items, while 47% of them accepted the syntactic causative for at least 4 items. Here again, for those advanced learners who accepted lexical and/or syntactic causatives followed with a 'but-clause' in English, I suggest that they have transferred the entailment relations associated with morphological and syntactic causatives from their L1.

The results of a 2-way mixed ANOVA show that there is a main effect for proficiency ($F(2, 125) = 32.84, p < 0.0001$), indicating a significant difference in performance among different subject groups on the lexical and syntactic causative forms followed with a 'but-clause' in English, i.e., beginner-level learners rejected these two causative constructions the least, whereas the native speakers rejected them the most. In addition, the advanced learners rejected the two causative forms more than the beginner-level learners but less than the native speakers.

In conclusion, the Korean learners of English did not reject either lexical or syntactic causatives followed with a 'but-clause' in English as readily as the native speaker group because the corresponding causative forms in their native language, i.e., morphological and syntactic causatives, are licit. This confirms the predictions made in this study, i.e., Korean learners of English accept both lexical and syntactic causative constructions followed with a 'but-clause' in English.
7.6. KSL Study

In Korean, neither the morphological causative nor the syntactic causative requires that the caused event occur; thus, negating the caused event does not result in contradiction in these constructions. The relevant question in this regard is whether English-speaking learners of Korean (KSL) could recognize the entailment relations associated with morphological and syntactic causatives in Korean. In the following, the KSL study is reported with subsections on hypotheses, research questions, an experiment design, results, and discussions in that order.

7.6.1. Hypotheses

The hypothesis tested in this study is based on the premise that language-particular semantic characteristics are likely to transfer in an L2 learning situation. The following explicates the hypothesis tested in this study:

**Hypothesis:*** KSL learners rely on their L1 knowledge in identifying the entailment relations associated with the morphological and syntactic causative in Korean. In other words, the entailment relations associated with the lexical and syntactic causatives in English would be transferred when the KSL learners judge the acceptability of the morphological and syntactic causatives followed with a 'but-clause' in Korean.

**Predictions:*** KSL learners will reject both morphological and syntactic causative constructions followed with a 'but-clause' in Korean. The following table exemplifies this:
Table 57. Predictions for KSL learners

<table>
<thead>
<tr>
<th>KSL learners</th>
<th>Causative</th>
<th>Prediction</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>morphological causative</td>
<td>reject</td>
</tr>
<tr>
<td></td>
<td>syntactic causative</td>
<td>reject</td>
</tr>
</tbody>
</table>

7.6.2. Research Questions

For KSL learners the question is whether they would transfer their L1 knowledge that both the lexical and syntactic causatives in English require the success of the causation in evaluating the relation of entailment regarding the morphological and syntactic causative in Korean. This study attempts to answer the following questions:

a. Do KSL learners incorrectly reject the morphological causative construction followed with a 'but-clause' in Korean because the corresponding lexical causative in their native language is unacceptable? For example, do they judge the following sentence to be contradictory?

   e.g. Hyencwu-ka pethe-lul aylulssese nok-i-ess-una, Hyunjoo-nom butter-ace with great effort melt-caus-past-but, pethe-ka nok-ci anh-ass-ta butter-nom melt-comp-not-past-dec 'With great effort, Hyunjoo melted the butter, but it didn't melt.'

b. Do KSL learners incorrectly reject the syntactic causative construction followed with a 'but-clause' in Korean because the corresponding syntactic causative in their native language is unacceptable? For example, do they judge the following sentence to be contradictory?

   e.g. John-i elum-ul nok-key hay-ss-una, elum-i nok-ci anh-ass-ta -nom ice-acc melt-comp-do-past-but ice-nom melt-comp-not-past-dec 'John made the ice melt, but it didn't melt.'
7.6.3. Experiment Design

*Subjects:* The same subjects who participated in the first experiment of this dissertation which examined the L2 acquisition of transitivity alternation also took part in this experiment. There were thirty KSL learners. In addition, thirty native speakers of Korean served as controls.

*Task:* The main task is designed to investigate whether KSL learners are able to identify the entailment relationships associated with the morphological and syntactic causatives in Korean. More specifically, it is designed to test whether KSL learners could identify that both the morphological and syntactic causatives in Korean do not require that the causation be successful (in other words, the caused event has not taken place).

In order to familiarize the subjects with the test at hand, they were first instructed about the task involved in the experiment as well as the procedure. For example, they were told that the task is concerned with identifying a contradicting and/or non-contradicting sentence, of which the second part consists of a 'but-clause' as shown below ((8) is a contradicting and (9) a non-contradicting sentence):

(8) *Chelswu-ka Yengswu-lul ttaylye-ss-una, ttayli-ci anh-ass-ta*
    Chulsoo-nom Youngsoo-acc hit-past-but hit-comp-not-past-dec
    'Chulsoo hit Youngsoo, but he didn't do it.'

(9) *emma-ka chasako-ka na-ss-una, manhi tachi-ci anh-ass-ta*
    mother-nom car accident-nom happen-past-but a lot get hurt-comp-not-past-dec
    'Mother had a car accident, but she didn't get hurt seriously.'
Subjects were further told that the same procedure adopted in the first experiment is used here, i.e., they have to mark a number on a five-point scale (1 for least natural and 5 for most natural), based on their judgment on the sentences tested.

Thirty-two experimental items along with twelve distractor items are included in the task. Distractor items are non-causative sentences, of which the half are contradicting, and the other half non-contradicting sentences. The experimental items, on the other hand, are causative sentences, of which the half are morphological causatives followed with a 'but-clause' in Korean and the other half syntactic causatives followed with a 'but-clause.' A total of forty-four items, experimental and distractor items combined, are counterbalanced and given to subjects in a random order.

Test sentences:

Distractor sentences are either contradicting or non-contradicting non-causative sentences in Korean. Experimental items are either non-contradicting morphological or syntactic causative sentences followed with a 'but-clause' in Korean. To increase the plausibility of a morphological causative when there is a 'but-clause', an adverbial phrase aylulssese 'with great effort' is used in the first part of the sentence. The following table illustrates both experimental and distractor items used in the task at hand:
Table 58. Experimental and distractor items

<table>
<thead>
<tr>
<th>Sentence type</th>
<th>Example</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. Contradicting non-causative sentence</td>
<td>*pi-ka wa-ss-una, o-ci anh-ass-ta. rain-nom come-past-but come-comp not-past-dec 'It rained, but it didn't rain.'</td>
</tr>
<tr>
<td>b. Non-contradicting non-causative sentence</td>
<td>Mary-ka kakey-ey ka-ss-una, amwukesto sa-ci anh-ass-ta. -nom store-to go-past-but anything buy-comp not-past-dec 'Mary went to a store, but she didn't buy anything.'</td>
</tr>
<tr>
<td>c. Non-contradicting morphological causative</td>
<td>Hyencwu-ka pethe-lul aylulssese nok-i-ess-una, -nom butter-acc with great effort melt-caus-past-but pethe-ka nok-ci anh-ass-ta. butter-nom melt-comp not-past-dec 'With great effort, Hyunjoo melted the butter, but it didn't melt.'</td>
</tr>
<tr>
<td>d. Non-contradicting syntactic causative</td>
<td>Chelswu-ka elum-ul nok-key hay-ss-una, -nom ice-acc melt-comp do-past-but elum-i nok-ci anh-ass-ta. ice-nom melt-comp not-past-dec 'Chulsoo made the ice melt, but it didn't melt.'</td>
</tr>
</tbody>
</table>

7.6.4. Results

Results of the distractor sentences show that both the learner and native speaker groups correctly distinguished contradicting from non-contradicting sentences. Table 59 below shows mean and standard deviations on distractor items:

Table 59. Distractor Items: Means, and Standard Deviations on Contradicting and Non-contradicting Sentences

<table>
<thead>
<tr>
<th>Distractors</th>
<th>Learners</th>
<th>Native</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>M</td>
<td>SD</td>
</tr>
<tr>
<td>Contradicting</td>
<td>1.89</td>
<td>1.12</td>
</tr>
<tr>
<td>Non-contradicting</td>
<td>4.20</td>
<td>0.89</td>
</tr>
</tbody>
</table>

Table 60 below shows mean and standard deviations on the morphological and syntactic causatives followed with a 'but-clause' in Korean. Figure 10 depicts mean responses on these two causative constructions:
Table 60. Experimental Items: Means, and Standard Deviations on Morphological and Syntactic Causative Sentences

<table>
<thead>
<tr>
<th>Experimental Items</th>
<th>Learners</th>
<th>Native</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>M</td>
<td>SD</td>
</tr>
<tr>
<td>Morphological causative</td>
<td>2.39</td>
<td>1.00</td>
</tr>
<tr>
<td>Syntactic causative</td>
<td>2.58</td>
<td>1.21</td>
</tr>
</tbody>
</table>

Figure 10 Mean responses on morphological and syntactic causatives

As shown in Figure 10, the learner group did not accept both morphological and syntactic causative constructions followed with a 'but-clause' in Korean as readily as the native speaker group.

Figure 11 below shows how KSL learners treated individual verbs in both morphological and syntactic causatives followed with a 'but-clause' in Korean:
As shown in Figure 11, there is a variation among verbs in the morphological causative followed with a 'but-clause' in Korean; for example, verbs like kwul-li-ta 'roll', tol-li-ta 'spin', wus-ki-ta 'laugh', wul-li-ta 'cry', etc., are rejected more readily than verbs such as mal-li-ta 'dry', cay-wu-ta 'sleep', anc-hi-ta 'sit', etc., in the morphological causative. Verbs in the syntactic causative followed with a 'but-clause' in Korean also vary. Thus, verbs like nok-i-ta 'melt', nal-li-ta 'fly', ip-hi-ta 'dress', etc., are rejected more readily than other verbs like el-li-ta 'freeze', anc-hi-ta 'sit', mek-i-ta 'feed', ilk-hi-ta 'read', etc., in the syntactic causative.
The following table shows the proportion of each answer given by the KSL learners for the morphological causative followed with a 'but-clause' in Korean:

Table 61. Proportion of answers given by KSL learners for the morphological causative

<table>
<thead>
<tr>
<th>Answer</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>don't know</th>
<th>Answers in total</th>
</tr>
</thead>
<tbody>
<tr>
<td>No of answers</td>
<td>148</td>
<td>84</td>
<td>43</td>
<td>58</td>
<td>46</td>
<td>101</td>
<td>480</td>
</tr>
<tr>
<td>(proportion)</td>
<td>(30.8%)</td>
<td>(17.5%)</td>
<td>(9%)</td>
<td>(12.1%)</td>
<td>(9.6%)</td>
<td>(21%)</td>
<td>(100%)</td>
</tr>
</tbody>
</table>

Note that 21% of the answers given by the KSL learners involve "don't know," which is a rather high proportion. This is different from the response patterns given by the ESL learners, i.e., only 1.7% of the answers given by the beginner-level ESL learners and 0.4% of the answers given by the advanced ESL learners involve "don't know" for the lexical causative followed with a 'but-cause' in English.

The following table shows the proportion of the answers given by the KSL learners regarding the syntactic causative followed with a 'but-clause' in Korean:

Table 62. Proportion of answers given by KSL learners for the syntactic causative

<table>
<thead>
<tr>
<th>Answer</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>don't know</th>
<th>Answers in total</th>
</tr>
</thead>
<tbody>
<tr>
<td>No of answers</td>
<td>158</td>
<td>83</td>
<td>55</td>
<td>64</td>
<td>76</td>
<td>44</td>
<td>480</td>
</tr>
<tr>
<td>(proportion)</td>
<td>(33%)</td>
<td>(17%)</td>
<td>(12%)</td>
<td>(13%)</td>
<td>(16%)</td>
<td>(9%)</td>
<td>(100%)</td>
</tr>
</tbody>
</table>

Here, 9.2% of the total answers involve "don't know," which is much less than the proportion given for the morphological causative in Korean (21%). It is still notably larger than the proportion obtained from the ESL learners, however: for example, merely 0.8% of the answers given by both beginner-level and advanced ESL learners include "don't know" for the syntactic causative followed with a 'but-clause' in English.
Lastly, I turn to the performance by the native speaker group on both morphological and syntactic causatives followed with a 'but-clause' in Korean. As expected, they accepted both causative forms.

It should be noted, however, that, unlike English causatives, both lexical and syntactic, which obey a structural constraint, Korean causatives lack the same kind of a constraint. In other words, Korean causatives do not require that the causation be successful. Matters are a little more complicated, however. Namely, not all Korean speakers allow the caused event to be negated. Thus, a morphological causative followed with a 'but-cause' in Korean is acceptable for some Korean speakers, whereas it is unacceptable for others.

Hence, it is important to determine how native speakers of Korean performed on the morphological causative followed with a 'but-clause' in Korean in the study at hand. Consider the following table which illustrates how many of the native speakers accepted the morphological causative. (Note that there were 16 items in total used for the morphological causative with 30 native speakers of Korean.)

<table>
<thead>
<tr>
<th>No of items accepted (responses 4 or 5)</th>
<th>10</th>
<th>11</th>
<th>12</th>
<th>13</th>
<th>14</th>
<th>15</th>
</tr>
</thead>
<tbody>
<tr>
<td>No. of native speakers</td>
<td>1</td>
<td>3</td>
<td>1</td>
<td>7</td>
<td>5</td>
<td>4</td>
</tr>
</tbody>
</table>

As shown here, 4 native speakers accepted 15 items out of 16, and 5 native speakers 14 items, and so on. Only those native speakers who accepted 12 items or more are considered here, which accounts for 57% (17 native speakers). The table below illustrates how many of native speakers accepted the syntactic causative followed with a 'but-cause' in Korean. (There are also 16 items in total):
Here again, only those native speakers who accepted 12 items or more are considered, which represents 67% (20 native speakers). Let us now examine how KSL learners performed on the morphological causative followed with a 'but-clause' in Korean. The following table presents how many of the KSL learners accepted the morphological causative:

Table 64. Proportion of native speakers who accepted the syntactic causative

<table>
<thead>
<tr>
<th>No. of items accepted</th>
<th>10</th>
<th>11</th>
<th>12</th>
<th>13</th>
<th>14</th>
<th>15</th>
<th>16</th>
</tr>
</thead>
<tbody>
<tr>
<td>No. of native speakers</td>
<td>1</td>
<td>1</td>
<td>4</td>
<td>2</td>
<td>6</td>
<td>6</td>
<td>2</td>
</tr>
</tbody>
</table>

As shown here, only 2 KSL learners (7%) accepted the morphological causative followed with a 'but-clause' in Korean for 12 items or more.

Turning now to the syntactic causative followed with a 'but-clause' in Korean, the table below shows how many of the KSL learners accepted it:

Table 65. Proportion of KSL learners who accepted the morphological causative

<table>
<thead>
<tr>
<th>No. of items accepted</th>
<th>10</th>
<th>12</th>
<th>15</th>
</tr>
</thead>
<tbody>
<tr>
<td>No. of KSL learners</td>
<td>1</td>
<td>1</td>
<td>1</td>
</tr>
</tbody>
</table>

Only 3 KSL learners (10%) accepted the syntactic causative followed with a 'but-clause' in Korean for 12 items or more.

In order to determine whether there was a significant difference in performance by different subject groups on the morphological and syntactic causative forms followed with a 'but-clause' in Korean, a 2-way mixed ANOVA was run with repeated measures on constructions (morphological and syntactic causatives). The results show that there is a significant main effect only for group (F(1, 58) = 92.28, p < 0.0001). This indicates that
there is a significant difference in performance between the learner and native speaker
groups on the two causative forms followed with a 'but-clause' in Korean. Native
speakers accepted both causative forms, whereas the KSL learners accepted them at a
significantly lower rate.

7.6.5. Discussion

Compared to the ESL learners, the KSL learners, in general, had great difficulty
identifying the morphological and syntactic causatives followed by a 'but-clause' in
Korean, as shown in their choosing "don't know"-responses to a great extent (more so for
the morphological causatives).

In accounting for the data obtained from KSL learners, it is important to keep in
mind that Korean causatives, both morphological and syntactic, do not manifest the same
kind of structural constraint which underlies English causatives. Recall that English
causatives, both lexical and syntactic, require the causation to be successful. This
constraint is manifested in the fact that native speakers of English in general do not allow
the caused event to be negated in these causatives in English. On the other hand, Korean
native speakers are divided into two groups. Some native speakers of Korean allow the
causative to be negated in the morphological and syntactic causatives in Korean,
while others disallow it.

The analysis used for the KSL learners is as follows: first, the proportion of the
native speakers of Korean who accepted at least 12 items out of 16 for both
morphological and syntactic causatives followed by a 'but-clause' in Korean was
calculated and, subsequently, this proportion was compared to that of the KSL learners.
Results of this analysis show that 57% of the native speakers of Korean accepted the morphological causatives followed by a 'but-clause' in Korean, while 67% of them accepted the syntactic causatives.

This suggests that not all Korean native speakers allow the caused event to be negated in these two causatives in Korean. This, in turn, suggests that morphological and syntactic causatives in Korean do not require that the caused event occur—i.e., there is no structural constraint.

In contrast to native speakers, 7% of the KSL learners accepted the morphological causatives followed by a 'but-clause' in Korean, while 10% of them accepted the syntactic causatives.

The question, then, is how to interpret the KSL learners' performance on the morphological and syntactic causatives followed by a 'but-clause' in Korean. Based on the clear difference in the proportion of the KSL learners and the native speakers of Korean who accepted these two causatives followed by a 'but-clause' in Korean, I conclude that the KSL learners accepted them less readily than the native speakers. Recall that 7% of the KSL learners accepted the morphological causative followed by a 'but-clause' in Korean in contrast to 57% of the native speakers, while 10% of the KSL learners accepted the syntactic causative in contrast to 67% of the native speakers.

In addition, it is interesting to note that slightly more native speakers accepted the syntactic causative followed by a 'but-clause' in Korean (67%) than the morphological causative (57%), indicating that successful causation is less expected with the former causative than with the latter. I should point out, though, that the proportion of native speakers who accepted the syntactic causative followed by a 'but-clause' in Korean is
somewhat lower than expected, given that successful causation is not entailed in this pattern. This seems to indicate that successful causation is often inferred even though it is not entailed.

In conclusion, the clear difference in the proportion of KSL learners and native speakers who accepted the morphological and syntactic causatives followed by a 'but-clause' in Korean shows that the learner group accepted these two causatives in Korean at a considerably lower rate than the native speaker group. Results of a 2-way ANOVA also show that there is a significant difference in performance between these two groups of subjects ($F(1, 58) = 92.28, p < 0.0001$).

The KSL learners' low acceptance of these two causative forms in Korean can be interpreted as evidence that they have transferred the entailment relations associated with the lexical and syntactic causatives from their L1, in assessing the morphological and syntactic causatives followed by a 'but-clause' in Korean. This supports the predictions made in this study, namely that the English-speaking learners of Korean would reject both morphological and syntactic causatives followed by a 'but-clause' in Korean.

7.7. Conclusion

The research questions for this section focussed on whether L2 learners would transfer the entailment relations associated with the lexical/morphological and syntactic causatives in English and Korean in assessing these causatives in the target language. English causatives differ from Korean causatives in that they obey a structural constraint, requiring that the caused event occur. That is why negating the caused event in these causatives yields a contradiction.
On the other hand, Korean causatives, both morphological and syntactic, lack a structural constraint in order for the causation in Korean morphological and syntactic causatives to be successful. Thus, for native speakers of Korean, it is possible to negate the caused event in these causatives.

Based on the fact that English and Korean causatives differ in terms of having a structural constraint (i.e., English causatives have it, whereas Korean causatives lack it), different analyses were carried out to examine L2 learners' performance on the lexical/morphological and syntactic causatives followed by a 'but-clause' in English and Korean. ESL learners' acceptance of the lexical and syntactic causatives for at least 3 and 4 items respectively was interpreted as evidence of their lack of the structural constraint that underlies these two causatives in English.

Based on the difference in the proportion of the learner and native speaker groups who accepted these causatives in English, I conclude that the learner group rejected them considerably less readily than the native speaker group. This difference was significant ($F(2, 125) = 32.84, p < 0.0001$). In contrast, KSL learners accepted the morphological and syntactic causatives followed by a 'but-clause' in Korean at a markedly lower rate than the native speaker group. This difference too was significant ($F(1, 58) = 92.28, p < 0.0001$).

In conclusion, the predictions based on the entailment relations seem to be borne out for both ESL and KSL learners. Thus, I claim that both learner groups have transferred the entailment relations associated with the lexical/morphological and syntactic causatives from their L1 in assessing these causatives in the target language.
Chapter 8
Conclusion

This dissertation has two parts. The first part focused on the L2 acquisition of the causative/inchoative alternation by Korean learners of English and English-speaking learners of Korean. The L2 acquisition of the entailment relations associated with lexical/morphological and syntactic causatives was examined in the second part. In this chapter, I will provide a brief summary of these studies, and address research questions related to them. In addition, I will present problems regarding the experiments conducted for these studies. Finally, I will discuss the implications of the studies for future research.

Experiment I, dealing with the L2 acquisition of the causative/inchoative alternation, is summarized first followed by Experiment II, with a focus on the L2 acquisition of the entailment relations for causative constructions. In presenting each experiment, ESL learners are discussed first, and KSL learners next.

8.1. Summary

The objective of the first experiment is to investigate the L2 acquisition of the causative/inchoative alternation in English and Korean. The object of the investigation involves unaccusative and unergative verbs that (dis)allow this alternation. As far as unaccusative verbs are concerned, English and Korean are similar in that the same kinds of verbs (i.e., externally caused change-of-state verbs) participate in the causative/inchoative alternation; the difference between these two languages lies in the fact that verbs occurring in both transitive and intransitive constructions have the same
form in English (e.g., *John opened the door/The door opened), while in Korean they are marked differently according to the pattern to which they belong. Verbs that belong to the anticausative pattern in Korean appear in a non-derived verb form in the transitive construction (e.g., *yel-ta 'open') and in a derived verb form in the intransitive construction (e.g., *yel-li-ta 'open'). In contrast, in the causative pattern verbs occur in a derived form in the transitive construction (e.g., *nok-i-ta 'melt') and in a non-derived form in the intransitive construction (e.g., *nok-ta 'melt').

The unergative verbs investigated in this study, such as wulta 'cry', wusta 'laugh', ketta 'walk', cata 'sleep', etc. can alternate in transitivity in Korean. Thus, they can occur as either morphological causative transitives or as intransitives, as shown in the following examples:

    Sangho-nom baby-acc laugh-[caus]-past-dec
    'Sangho made the baby laugh.'

     b. aki-ka wus-ess-ta.
        baby-nom laugh-past-dec
        'The baby laughed.'

In English, unergative verbs generally disallow alternation in transitivity (e.g., *Mary cried the baby/The baby cried).

One of the research questions in this study focussed on whether L2 learners know that unaccusative and unergative verbs allow or disallow alternations in transitivity in the target language. Another question centered around the idea of transfer of morphology proposed by Montrul (1999; 2001a; 2001b).

Based on the results of her crosslinguistic studies, Montrul argues that morphology can be transferred from the native language to the interlanguage grammar.
One piece of evidence for this claim comes from Spanish-speaking learners of English who preferred the unnatural inchoative form in English (e.g., *The butter got melted*) over the natural inchoative form (e.g., *The butter melted*). Montrul maintains that the Spanish learners' responses are expected because a reflexive clitic *se* is used in the inchoative forms in their L1.

Another piece of evidence comes from a study showing that English- and Spanish-speaking learners of Turkish performed differently with alternating unaccusative verbs in Turkish. For example, the English-speaking learners were less accurate at identifying both grammatical and ungrammatical inchoative forms with the anticausative pattern than were the Spanish-speaking learners, since English has a zero-morphology in these forms, whereas a reflexive clitic *se* is used in the inchoative forms in Spanish. In the anticausative pattern in Turkish, a non-derived verb occurs in the transitive construction, and a derived verb consisting of a bare verb and an inchoative morpheme appears in the intransitive construction.

This study examines whether Korean learners of English and English-speaking learners of Korean transfer morphological properties from their L1 in assessing alternating unaccusative verbs in the target language. Korean is similar to Turkish in terms of having two different patterns with alternating unaccusative verbs—anticausative and causative. Hence, the findings in this study could support or undermine Montrul's idea of morphology transfer. The acquisition of the causative/inchoative alternation by Korean speakers of English is discussed below:
Experiment I

ESL learners

The answer to the first research question of whether ESL learners know that externally caused change-of-state verbs in English (e.g., open, close, melt, freeze, etc.) alternate in transitivity seems affirmative. The learners correctly accepted both grammatical transitive and intransitive constructions with these verbs, showing their knowledge that they alternate in transitivity. The fact that the learners also accepted ungrammatical constructions, both transitive and intransitive, is somewhat troublesome, however. Nevertheless, their performance on ungrammatical constructions might be explained by assuming that the learners have been influenced by pattern-based transfer. In addition, not only beginner-level learners, but also advanced ESL learners performed poorly with these constructions. Hence, based on the reasons given above, I suggest that ESL learners know that change-of-state verbs in English alternate in transitivity.

Korean learners of English also appear to know that unergative verbs in English generally disallow alternation in transitivity. These learners performed correctly on grammatical and ungrammatical transitive as well as grammatical and ungrammatical intransitive constructions with unergative verbs in English, thus showing their knowledge that these verbs do not alternate in transitivity.

The next research question regarding the transfer of morphological characteristics centered around whether ESL learners would behave differently on alternating unaccusative verbs in English, depending on the pattern to which these verbs belong in their L1. For example, with the anticausative pattern the learners would accept the lexical causative (e.g., John opened the door) and reject the make-causative (e.g., John
made the door open), while accepting the get-intransitive construction (e.g., *The door got opened*) and rejecting the inchoative form (e.g., *The door opened*). With the causative pattern, on the other hand, they would accept the make-causative (e.g., *Ben made the butter melt*) and reject the lexical causative (e.g., *Ben melted the butter*), while accepting the inchoative form (e.g., *The butter melted*) and rejecting the get-intransitive construction (e.g., *The butter got melted*). The idea that Korean learners of English would treat alternating unaccusative verbs in English differently based on the different patterns of their L1 was referred to as class-based transfer. This contrasts with pattern-based transfer, which holds that L2 learners transfer structural patterns without regard for verb class.

Results on alternating unaccusative verbs in English show that ESL learners did not seem to have been influenced by class-based transfer in identifying these verbs. In other words, they did not treat alternating unaccusative verbs in English differently, depending on the pattern to which they belong in their L1—anticausative and causative. Except for the unnatural transitive construction with the anticausative pattern (e.g., *John made the door open*), with which they showed uncertainty, ESL learners accepted all the construction types with both anticausative and causative patterns, i.e., both natural transitive and intransitive as well as unnatural transitive and intransitive constructions.

ESL learners seem to have transferred a general pattern in assessing alternating unaccusative verbs in English. For example, a syntactic causative pattern appears to have been transferred over from Korean when the learners assessed the acceptability of the unnatural transitive constructions with both causative (e.g., *Ben made the butter melt*) and anticausative patterns (e.g., *John made the door open*).
Moreover, the learners' performance on the natural causative forms for both anticausative (e.g., *John opened the door*) and causative patterns (e.g., *Ben melted the butter*) can be explained by assuming that they had transferred a general transitive pattern from their L1 (as in *Inho-ka mwun-ul yel-ess-ta* 'Inho opened the door').

ESL learners accepted both natural and unnatural inchoative forms with both anticausative and causative patterns. Their performance on the natural inchoative forms for both anticausative (e.g., *The door opened*) and causative patterns (e.g., *The butter melted*) might also be based on pattern-based transfer. In particular, they have transferred a general intransitive pattern from their L1 (as in *Pethe-ka nok-ass-ta* 'The butter melted').

The learners' performance on the unnatural intransitive constructions with both anticausative (e.g., *The door got opened*) and causative patterns (e.g., *The butter got melted*) can be interpreted as transfer of a verb pattern from the L1—i.e., *V-(e/a) issta* 'be in a state of V.'

Pattern-based transfer can also explain the ESL learners' performance on unergative verbs in English. For example, the learners appear to have transferred a syntactic causative pattern from their L1 in assessing the grammatical causative construction (e.g., *Tom made the girl cry*). In addition, in determining the acceptability of the ungrammatical causative constructions (e.g., *Tom cried the girl*), the learners seem to have relied on the comparable constructions in Korean, thus correctly rejecting them.

Both beginner-level and advanced ESL learners correctly identified the grammatical intransitive form (e.g., *The girl cried*), which could be interpreted as transfer of a general intransitive pattern from their L1. With respect to the ungrammatical intransitive constructions (e.g., *The girl got cried*), the advanced learners appear to have
transferred the intransitive pattern from their L1 (as in *Yeccaai-ka wul-e-iss-ta 'The girl is in a state of crying'). On the other hand, the beginner-level learners' poor performance on the ungrammatical intransitive construction might result from their treating unergative verbs as unaccusative-like verbs, thus assuming that these verbs can occur with the verb get.

As described above, a pattern-based transfer account can explain the ESL learners' performance with both unaccusative and unergative verbs in English. The findings shown in Montrul's studies, namely that L2 learners transferred morphological characteristics from their L1 in assessing alternating unaccusative verbs in the target language are not readily observed here.

The different findings obtained from this study might result from the fact that the beginner-level learners who participated in the current experiment were not "true" beginners, since most of them had already learned English for several years. Thus, it could have been possible to find a class-based transfer effect if the learners had been true beginner-level learners. This merits consideration in future research.

The last research question involves overgeneralization. More specifically, it focussed on whether Korean learners of English would overgeneralize by extending the possibility of a transitivity alternation to verbs which disallow the alternation. Results on the unergative verbs show that the learners did not accept sentences like Tom cried the girl. Thus, overgeneralization occurrences shown in L1 acquisition (e.g., children are shown to produce sentences like I fell the cup, I sang the horse, etc.) or in L2 acquisition (e.g., L2 learners find sentences like The magician disappeared the rabbit, Peter laughed the man, etc., acceptable (Montrul 2001b)) are not readily found here.
KSL learners

The first research question focused on whether English-speaking learners of Korean know that externally caused change-of-state verbs in Korean alternate in transitivity. Overall, these learners performed well on all the construction types involving these verbs, thus showing their knowledge that these verbs alternate in transitivity. For example, KSL learners were accurate at identifying grammatical and ungrammatical transitive as well as grammatical and ungrammatical intransitive constructions with the anticausative pattern in Korean. They were also accurate with the intransitive constructions with the causative pattern. However, they had difficulty with the transitive constructions with this pattern.

The KSL learners' problem with the transitive constructions in the causative pattern seems to result from the fact that the verbs used in these constructions (e.g., nok-ita 'melt', el-li-ta 'freeze', etc.) are not prototypical for describing a transitive event. In particular, these verbs in general denote natural processes that take place without human intervention. In contrast, verbs used in the transitive constructions with the anticausative pattern (e.g., yelta 'open', tatta 'close', kkayta 'break', etc.) are prototypical transitive verbs, depicting an event where an animate agent deliberately acts on an inanimate theme. Their expression via an underived verb form is therefore expected. Thus, KSL learners seem to show a bias towards prototypical transitive verbs in terms of verb learning, replicating the findings in L1 acquisition, namely that these verbs are acquired earlier than others by children.

KSL learners also showed knowledge that unergative verbs like wulta 'cry', wusta 'laugh', cata 'sleep', etc. in Korean alternate in transitivity. These learners correctly
accepted grammatical forms and rejected ungrammatical ones for both transitive and intransitive constructions.

The next research question regarding the transfer of morphological properties centered around whether KSL learners would transfer a general pattern from their L1 in evaluating alternating unaccusative verbs in Korean, the general pattern being a non-derived verb used in both transitive and intransitive constructions in English. Results on alternating unaccusative verbs show that KSL learners do not appear to have been influenced by pattern-based transfer in identifying these verbs in Korean. If KSL learners had transferred a general pattern from their L1, they would have preferred a non-derived verb to a derived verb across all the construction types tested (i.e., transitive and intransitive) for both anticausative and causative patterns.

More specifically, KSL learners did not transfer a general pattern from their L1 in determining the acceptability of the intransitive constructions with the anticausative pattern. For example, they correctly accepted the grammatical intransitive construction with this pattern, where a derived verb consisting of a bare verb and an inchoative morpheme occurs (e.g., ye-li-ta 'opened'), while correctly rejecting the ungrammatical intransitive form with a non-derived verb (e.g., ye-ta 'open'). Their marginal performance on both grammatical and ungrammatical transitive constructions with the causative pattern also indicates that they did not necessarily prefer a non-derived verb to a derived one.

The fact that KSL learners performed well on the intransitive constructions with the anticausative pattern needs an explanation because these verbs are derived, consisting of a root and an inchoative morpheme. Since these verbs are not used to denote
prototypically transitive events in these cases (i.e., they depict a resultant state in the pictures used in the experiment), there is no reason to expect a preference for an underived form.

It is also possible that frequency might play a role in the learners' performance with derived verbs in Korean. Derived verbs like *yel-li-ta* 'opened', *tat-hi-ta* 'closed', etc., with which the learners had little difficulty, might have been encountered more frequently by the learners than those like *nok-i-ta* 'melt (tr.)', *el-li-ta* 'freeze (tr.)', etc., which caused problems for them. A preliminary investigation based on on-line corpus research seems to support this.

Another puzzle involves the fact that KSL learners performed well on the transitive constructions with alternating unergative verbs, consisting of a root and a causative morpheme (e.g., *wul-li-ta* 'make cry', *wus-ki-ta* 'make laugh', etc.). As mentioned above, these learners had problems with derived verbs occurring in the transitive construction with the causative pattern (e.g., *nok-i-ta* 'melt', *el-li-ta* 'freeze', etc.), the same kind of derived verbs consisting of a root and a causative morpheme. The only difference between these two different kinds of derived verbs lies in the category of the intransitive verb to which the causative morpheme is attached. The derived verb which causes little difficulty for KSL learners is comprised of an unergative verb and a causative morpheme. The derived verb with which the learners had difficulty, on the other hand, consists of an unaccusative verb and a causative morpheme. It remains unclear whether the different makeup of a derived verb has anything to do with the ease or difficulty of learning this verb.
Frequency does not seem to have played a role in the difference in the learners' performance. For example, on-line corpus research revealed no difference in frequency between the two different kinds of derived verbs—both morphological causatives are used at a similarly low rate.

The reason that a pattern-based transfer effect is not readily found in KSL learners in this study could lie in the fact that the learners who participated in this study might not be true low-level learners from whom one could expect to find more transfer. In fact, these learners might well be beyond the stage at which a transfer effect can be found more readily, i.e., the initial stage focused on by Schwartz & Sprouse (1996). Their optimal performance on the various constructions tested in this study readily supports this notion.

**Experiment II**

The objective of the second set of experiments in this dissertation was to determine the extent to which L2 learners transfer the entailment relations associated with lexical/morphological and syntactic causatives from their L1 in assessing these causatives in L2. English and Korean causatives differ in that English causatives obey a structural constraint, whereas there is no such constraint in Korean causatives. In particular, English causatives require that the causation be successful, thus making it impossible to negate the caused event. Hence, native speakers of English find the sentences *John melted the ice, but it didn't melt* or *John made the ice melt, but it didn't melt* unacceptable, where the caused event is negated.
In contrast, Korean causatives do not require that the causation be successful, thus making it possible to negate the resultant state. However, not all Korean speakers allow the caused event to be negated. Hence, for some Korean speakers, the following sentences are acceptable, whereas they are unacceptable for others.

(2) a. Swuni-ka pethe-lul yelsimhi nok-[ess~una,]-nom butter-acc with effort melt-[past~but]
    pethe-ka nok-ci anh-ass-ta.
    butter-nom melt-comp not-past-dec.
    'With great effort, Sooni melted the butter, but it didn't melt.'

b. Swuni-ka pethe-lul nok- [key ha-yess-una,]-nom butter-acc melt- [comp do-past~but]
    pethe-ka nok-ci anh-ass-ta.
    butter-nom melt-comp not-past-dec.
    'Sooni made the butter melt, but it didn't melt.'

The research question focused on whether Korean learners of English (ESL) would transfer the entailment relations associated with morphological and syntactic causatives from their L1 in assessing lexical and syntactic causatives in English.

Results on lexical and syntactic causatives followed by a 'but-clause' show that more than half of the ESL learners, both beginner-level and advanced, accepted the lexical causative for at least 3 items out of 12 and the syntactic causative for at least 4 items out of 16. In contrast, only 5% (one person) of native English speakers accepted the lexical causative followed by a 'but-clause', and none of them accepted the syntactic causative.

As a whole, beginner-level learners rejected lexical and syntactic causatives followed by a 'but-clause' at a significantly lower rate than native speakers of English. Advanced learners rejected these causatives less readily than the native speaker group but
more readily than the beginner-level learners. The difference in performance among the various subject groups was significant \((F(2, 125) = 32.84, p < 0.0001)\), leading to the conclusion that ESL learners had transferred the entailment relations associated with the morphological and syntactic causatives from their L1 in assessing the lexical and syntactic causatives followed with a 'but-clause' in English.

Unlike English causatives, Korean causatives do not require that the causation be successful. However, not all Korean native speakers allow the caused event to be negated. Thus, it is important to determine the native speakers' performance in this study in order to analyze the KSL learners' performance.

Results on morphological and syntactic causatives followed by a 'but-clause' show that 57% of native speakers of Korean accepted the morphological causative for at least 12 items out of 16, while 67% of them accepted the syntactic causative. This confirms that not all Korean native speakers allow the caused event to be negated in these two causatives in Korean. This, in turn, suggests that the morphological and syntactic causatives in Korean do not require that the caused event occur—i.e., there is no structural constraint.

Crucially, however, only 7% of the KSL learners accepted the morphological causative followed by a 'but-clause' in Korean, while only 10% of them accepted the syntactic causative.

It is clear that KSL learners performed differently from the native speaker group on the morphological and syntactic causatives followed by a 'but-clause' in Korean. The overall results on these causatives also showed a significant difference in performance between these two groups \((F(1, 58) = 92.28, p < 0.0001)\). This indicates that the KSL
learners did not accept the morphological and syntactic causatives followed by a 'but-clause' in Korean as readily as the native speakers. The KSL learners' low acceptance of these two causative forms in Korean can be interpreted as evidence that they have transferred the entailment relations associated with the lexical and syntactic causatives in their L1, in assessing the morphological and syntactic causatives followed by a 'but-clause' in Korean.

To summarize, both ESL and KSL learners behaved as predicted, i.e., ESL learners did not reject the lexical and syntactic causatives followed by a 'but-clause' in English as readily as native speakers of English. On the other hand, KSL learners did not accept the morphological and syntactic causatives followed by a 'but-clause' in Korean as readily as native speakers of Korean. In conclusion, I suggest that both ESL and KSL learners transferred the entailment relations associated with the lexical/morphological and syntactic causatives from their L1 in assessing these causatives in the L2.

8.2. Problems

There are several problems with experimental design in this study. One involves an imbalance in terms of the number of tokens used for the different patterns tested in this study. Only three tokens were used for the anticausative pattern, while seven tokens were used for the causative pattern. The reason for using a smaller number of tokens for the anticausative pattern lies in the fact that not many verbs figure in this pattern in Korean, compared to the causative pattern to which more verbs belong.

The task employed in the experiment (i.e., a picture-identification task) also played a role in having a small sample for the anticausative pattern. For example,
drawing or finding an appropriate picture for an event described by a certain verb turned out to be difficult, e.g., drawing a picture for an event of opening a door (the corresponding Korean verb is *yel-ta* 'open') was much easier than drawing a picture for an event of changing an object into something else (the corresponding Korean verb is *pakkwu-ta* 'change'). As the result, the choice of the verbs used in the current experiment was to a great extent based on the ease of drawing/finding a suitable picture.

Although more tokens were used for the causative than for the anticausative pattern, the choice of the tokens for the causative pattern was also influenced by the ease of finding a suitable picture, e.g., drawing a picture for an event of melting butter (the corresponding Korean verb is *nok-i-ta* 'melt') was easier than drawing a readily identifiable picture for an event of sinking a ship (the corresponding Korean verb is *kalaanc-hi-ta* 'sink').

Choosing verbs based on the ease of drawing a picture might have indirectly affected the L2 learners' performance because some verbs (e.g., *open, close*, etc.) could have been encountered more frequently than others (e.g., *melt, freeze*, etc.) by the learners.

The picture-identification task employed in this study turned out to be problematic too. Pictures provided for lexical/morphological causative constructions were supposed to depict a causative event in which an animate agent brings about a change of state or location directly (e.g., *somebody opening a door directly*). In addition, pictures accompanying the inchoative forms were intended to depict a resultant state (e.g., *a state of a door being opened*). Some pictures might have better depicted an event of a
direct causation or inchoation than others, affecting the learners' responses on some sentences involving these pictures.

Another problem has to do with the ease/difficulty of the tasks involved in the experiments. KSL learners in particular found the tasks in both Experiments I and II very challenging. Experiment II caused more difficulty for these learners, shown by their choosing "don't know" to a great extent. As a result, most of these learners needed over an hour to complete the whole task, not an optimal situation. Employing a task more appropriate for learners' levels should be considered in future research.

I should also mention that the KSL learners in this study are not a homogeneous group in terms of their proficiency in Korean. There is a considerable gap among these learners with respect to the length of stay in Korea, the length of learning Korean, the score on the cloze test administered to determine the learners' proficiency, etc. Examining these learners as a group might have tainted the results obtained in this study, and interpretations provided based on these results should thus be considered carefully.

Finally, in examining the L2 acquisition of transitivity alternation with unaccusative and unergative verbs, frequency was not controlled for. This too might have affected the learners' performance in this study.
8.3. Conclusion

Two different studies were carried out in this dissertation. The first study examined the L2 acquisition of a transitivity alternation. The L2 acquisition of the entailment relations for the causatives was investigated in the second study. A class-based transfer effect involving morphological properties proposed by Montrul (2001b) was not readily observed in the ESL learners' performance. Hence, a pattern-based transfer account was put forward to explain these learners' performance in the first study.

The reason that the findings in this study were different from Montrul's might lie in the fact that the learners who participated in this study might not be "true" beginner-level learners. Hence, future research should involve "true" beginner-level learners in order to determine whether class-based transfer occurs more at an early stage of learning rather than at a late stage.

It is argued in this study that KSL learners did not seem to have transferred a general pattern from their L1 in identifying alternating unaccusative verbs in Korean, the general pattern being an underived verb used in both transitive and intransitive constructions in English. Here again, the reason that pattern-based transfer was not readily observed in the KSL learners' performance could lie in the fact that these learners might not be "true" beginner-level learners. The KSL learners' optimal performance on almost all the construction types tested in the study seems to support their high proficiency in Korean.

Concerning Experiment II, I have suggested that both ESL and KSL learners seem to have transferred the entailment relations associated with lexical/morphological and syntactic causatives in their L1 in assessing these causatives in L2. Although there
was a significant difference between beginner-level and advanced ESL learners in the rejection rate of the lexical and syntactic causatives followed by a 'but-clause' in English (beginner-level learners rejected them less readily than advanced learners), it appears that transfer prevails even for the proficient learners.

Montrul (2001b) discusses the modular nature of transfer—i.e., a certain linguistic domain is more likely to transfer than another. Albeit premature, the domain of semantics (which includes entailment relations) seems to be one of the linguistic areas which is more vulnerable to transfer from the L1 to the interlanguage grammar. Further research involving various linguistic phenomena could shed light on the modularity of transfer. Findings from this research, in turn, could assist in developing effective teaching materials. For example, if L2 learners are found to strongly transfer in a certain linguistic domain, remedial pedagogical strategies could be considered.

Finally, I should mention that the issue of frequency was not examined rigorously in this study. It is possible that frequency might have played a role in the L2 learners' performance in this study. For example, verbs like open, close, break, etc. could have been encountered more frequently than verbs like melt, freeze, roll, etc. by the learners, affecting the subjects' responses on the constructions involving these verbs. Future research should investigate whether frequency has anything to do with the acceptance and/or rejection of a certain construction with unaccusative and unergative verbs.
## Appendix I

**Individual Profiles of Beginner-level ESL Learners**

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1 Cloze test
2 The score is based on a paper-based test.
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* The score on TOEFL is based on a computer-based test.
### Individual Profiles for KSL Learners

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## Appendix II

### ESL learners

| 설문과 지침서 | 하와이 주립대학 언어학과  | 김재현 |

우선 이 실험에 참여해주셔서 대단히 감사합니다. 이 테스트는 대부분으로 나눠져 있습니다. 첫 번째 테스트부터 시작하시고 그 다음에 두 번째 그리고 세 번째 마지막으로 네 번째 테스트를 해 주십시오. 이 테스트는 여러분의 영어문장에 대한 느낄을 보는 것이 아니라 느낌대로 대답을 선택해 주십시오. 본 테스트에 들어가기 전에 우선 본인의 전반적인 내력에 대한 정보를 주셨으면 감사하겠습니다. 저한테 주신 정보는 제가 나중에 실험결과를 분석하는데 얼마나 쓰일 것이며 외부에 노출되는 일이 전혀 없을 뿐이니 열려마시기 바랍니다.

1. 나이: 
2. 성별: 여 ___ 남 ___
3. 영어를 배운지 얼마나 되셨나요? __________년
4. 영어를 쓰는 나라에서 지내신 경우가 있나요? 있더라면 어느 나라이고 기간이 얼마나동안 이었는지 써 주십시오.
   나라/주 __________ 기간 __________
5. 영어를 제외하고 다른 제2외국어를 하시나요? 하신다면 어떤 언어인지 얼마동안 배우거나 말을 해 왔는지 써 주십시오.
   언어 __________ 배운 기간 __________년
6. 지금 본인이 하는 일은 무엇인지 해당하는 것에 표시해 주십시오.
   a. 대학교 학사과정
   b. 대학교 석/박사과정
   c. 그 외 __________
7. 본인의 영어실력을 스스로 어떻게 평가하는지 해당되는 부분에 표시해 주십시오.
   말하기: 저조 보통 우수 최상 영어가 모국어인 사람만큼 들기: 저조 보통 우수 최상 읽기: 저조 보통 우수 최상 쓰기: 저조 보통 우수 최상
8. TOEFL이나 TOEIC을 보셨다면 점수를 써 주십시오.
   a. TOEFL __________
   b. TOEIC __________

수고하셨습니다. 이제 첫 번째 과제부터 시작하십시오.
Task 1

아래의 영어동사를 한국어로 번역하여 주십시오. 만약 모르는 영어단어가 있다면 해석 불어주십시오.

1. to open
2. to close
3. to melt
4. to freeze
5. to burn
6. to dry
7. to roll
8. to bounce
9. to spin
10. to break
11. to laugh
12. to cry
13. to sleep
14. to walk
15. to wake up
16. to sit
17. to read
18. to put on (clothes)
19. to fly
20. to sweep
21. to eat

수고 많이 하셨습니다. 두 번째 과제로 넘어가십시오.
The discovery of the disease, malaria, began in 1880 when a French physician described a malarial parasite obtained from the blood of one of his patients. Italian investigators later demonstrated that the disease could be transmitted by infected blood, in the 1980’s British and Italian scientists suggested type of mosquito named anopheles as the transmitter of the disease. By 1900 had been established that theory was correct, by demonstrating that the disease was acquired only from the bite of infected anopheles mosquito, that persons protected from mosquito did not contract the disease even in regions where was rife. The biological cycle of parasite has now been described in sufficient detail to explain quinine was an effective remedy, why bite of an infected mosquito not transmit the disease until several days the mosquito had become infected, and why kinds of mosquitoes than the did not transmit the disease.

are four subtypes of the malarial parasite, is known as plasmodium, of which has its own characteristic pattern of biological changes as passes from its host, the mosquito, to its secondary host, man. The parasite undergoes sexual reproduction in the mosquito’s stomach. After a period of days, spores seeds produced in the walls of the mosquito’s stomach enter salivary glands and are injected, along with saliva, into the bodies of future victims.

is only when this occurs that becomes capable of spreading the.
Task 3

여러분은 일련의 그림들을 보게 될 것입니다. 각 그림에 두개의 문장들이 있는데 여러분이 할 일은 각각의 문장들이 그림을 자연스럽게 묘사하는지를 평가하는 것입니다. 문장이 그림을 잘 설명한다고 생각하는지 혹은 설명하지 못한다고 생각하는지 문장앞에 해당되는 곳에 동그라미를 쳐 주십시오.

1 - least natural (문장과 그림이 전혀 일치하지 않을때)
2 - sounds strange (문장이 훨씬 이상하게 들릴때)
3 - kind of ok (문장이 편할게 들릴때)
4 - sounds good (문장과 그림이 잘 일치할때)
5 - most natural (문장과 그림이 아주 잘 일치할때)
don’t know (문장과 그림이 잘 일치하는지 일치하지 않는지 확실하지 않을때)

주의하실 점은 두문장 다 그림과 잘 일치할 수도 있고, 두문장 다 그림과 일치하지 않을 수도 있고, 혹은 한 문장은 잘 일치하는 데 다른 한 문장은 잘 일치하지 않을 수도 있다는 것입니다. 아래는 몇가지 보기입니다.

두 문장 다 그림과 아주 잘 일치할 때.

Mother nagged father.  1 2 3 4 5 don’t know
Father didn’t listen to mother.  1 2 3 4 5 don’t know

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John's friends put under the table.  
John hid from his friends.

Tim and Jake fought each other.  
Tim and Jake were fought each other.
John opened the door. 1 2 3 4 5 don't know
John made the door open. 1 2 3 4 5 don't know

The cook burned the fish. 1 2 3 4 5 don't know
The cook made the fish burn. 1 2 3 4 5 don't know
The water got frozen. 1 2 3 4 5 don’t know
The water froze. 1 2 3 4 5 don’t know

The butter melted. 1 2 3 4 5 don’t know
The butter got melted. 1 2 3 4 5 don’t know
The fish got burned.

The fish burned.

don’t know

don’t know

Mary made her hair dry.

Mary dried her hair.

don’t know

don’t know
Tim rolled the ball.

Tim made the ball roll.

The glass got broken.

The glass broke.
Mary made the water freeze. 1 2 3 4 5 don't know
Mary froze the water. 1 2 3 4 5 don't know

The baby slept. 1 2 3 4 5 don't know
The baby got slept. 1 2 3 4 5 don't know
Ben melted the butter. 1 2 3 4 5 don’t know
Ben made the butter melt. 1 2 3 4 5 don’t know

Mary’s hair got dried. 1 2 3 4 5 don’t know
Mary’s hair dried. 1 2 3 4 5 don’t know
The child walked.  1  2  3  4  5  don't know
The child got walked.  1  2  3  4  5  don't know

The baby got laughed.  1  2  3  4  5  don't know
The baby laughed.  1  2  3  4  5  don't know
Tom closed the door.  1  2  3  4  5  don’t know
Tom made the door close.  1  2  3  4  5  don’t know

The ball rolled.  1  2  3  4  5  don’t know
The ball got rolled.  1  2  3  4  5  don’t know
Mother walked the child. 1 2 3 4 5 don't know
Mother made the child walk. 1 2 3 4 5 don't know

Mother made the child sleep. 1 2 3 4 5 don't know
Mother slept the child. 1 2 3 4 5 don't know
The girl cried.
The girl got cried.

Bob spun the ball.
Bob made the ball spin.
Tim laughed the baby. 1 2 3 4 5 don't know
Tim made the baby laugh. 1 2 3 4 5 don't know

Mike made the ball bounce. 1 2 3 4 5 don't know
Mike bounced the ball. 1 2 3 4 5 don't know
The ball got spun.  1  2  3  4  5  don't know
The ball spun.  1  2  3  4  5  don't know

The door closed.  1  2  3  4  5  don't know
The door got closed.  1  2  3  4  5  don't know
Tom made the girl cry. 1 2 3 4 5 don’t know
Tom cried the girl. 1 2 3 4 5 don’t know

The door got opened. 1 2 3 4 5 don’t know
The door opened. 1 2 3 4 5 don’t know
The ball bounced.

The ball got bounced.

James made the glass break.

James broke the glass.
Task 4

여러분은 이제 일련의 문장들을 보게 될 것입니다. 여러분이 할 일은 각각의
문장이 자연스러운지 자연스럽지 않은지 해당되는 곳에 표시하는 것입니다.

1 - least natural (문장이 말이 안될때)
2 - sounds strange (문장이 이상하게 들릴때)
3 - kind of ok (문장이 편하게 들릴때)
4 - sounds good (문장이 자연스럽게 들릴때)
5 - most natural (문장이 아주 자연스럽게 들릴때)

don’t know (문장이 말이 되는지 안되는데지 확실하지 않을때)

다음은 몇가지 보기입니다.

a. Susan yelled at John, but she didn’t do it.
   
   1 2 3 4 5 don’t know

b. My friend had a car accident, but he didn’t get hurt.
   
   1 2 3 4 5 don’t know

자 이제 시작하십시오.

1. It rained, but it didn’t rain.
   
   1 2 3 4 5 don’t know

2. With great effort, Mother woke up the child, but he didn’t wake up.
   
   1 2 3 4 5 don’t know

3. Will went to school, but he didn’t go into the classroom.
   
   1 2 3 4 5 don’t know

4. Tom made Kate sit, but she didn’t sit.
   
   1 2 3 4 5 don’t know
5. With great effort, Mary froze the water, but it didn’t freeze.
   1 2 3 4 5 don’t know

6. Tom ate noodles, but he didn’t eat them.
   1 2 3 4 5 don’t know

7. With great effort, John melted the butter, but it didn’t melt.
   1 2 3 4 5 don’t know

8. Mother made the child sleep, but he didn’t sleep.
   1 2 3 4 5 don’t know

9. Kate went to the grocery store, but she didn’t buy anything.
   1 2 3 4 5 don’t know

10. Father made the child wake up, but she didn’t wake up.
    1 2 3 4 5 don’t know

11. With great effort, Bob bounced the ball, but it didn’t bounce.
    1 2 3 4 5 don’t know

12. With great effort, Tom sat Kate on the chair, but she didn’t sit on it.
    1 2 3 4 5 don’t know

13. With great effort, Mary dried her hair, but it didn’t dry.
    1 2 3 4 5 don’t know
14. Bob and Sam fought each other, but they didn’t fight. 

1 2 3 4 5 don’t know

15. Tom made the ball roll, but it didn’t roll. 

1 2 3 4 5 don’t know

16. Father made Dora eat, but she didn’t eat. 

1 2 3 4 5 don’t know

17. Bob made the ball bounce, but it didn’t bounce. 

1 2 3 4 5 don’t know

18. Jane went to get her hair cut, but she didn’t get it cut. 

1 2 3 4 5 don’t know

19. Mother made John read, but he didn’t read. 

1 2 3 4 5 don’t know

20. With great effort, Tom rolled the ball, but it didn’t roll. 

1 2 3 4 5 don’t know

21. Mother made the child walk, but he didn’t walk. 

1 2 3 4 5 don’t know

22. Tim slept, but he didn’t sleep. 

1 2 3 4 5 don’t know
23. Bill made the ice melt, but it didn't melt.
   1 2 3 4 5 don’t know

24. With great effort, John spun the ball, but it didn’t spin.
   1 2 3 4 5 don’t know

25. Max cried, but he didn’t cry.
   1 2 3 4 5 don’t know

26. Tom made the girl cry, but she didn’t cry.
   1 2 3 4 5 don’t know

27. The hot sun made the laundry dry, but it didn’t dry.
   1 2 3 4 5 don’t know

28. Tim slept a lot, but he is still tired.
   1 2 3 4 5 don’t know

29. With great effort, Mother dressed the child, but he didn’t get dressed.
   1 2 3 4 5 don’t know

30. With great effort, Sam flew the kite, but it didn’t fly.
   1 2 3 4 5 don’t know

31. The man swept the ground, but there are still leaves on it.
   1 2 3 4 5 don’t know

32. John made the ball spin, but it didn’t spin.
   1 2 3 4 5 don’t know
33. Tim made the baby laugh, but she didn’t laugh.
   1 2 3 4 5 don’t know

34. The cold weather made the water freeze, but it didn’t freeze.
   1 2 3 4 5 don’t know

35. Will went to school, but he didn’t go.
   1 2 3 4 5 don’t know

36. With great effort, Mother walked the child, but he didn’t walk.
   1 2 3 4 5 don’t know

37. Sam made the kite fly, but it didn’t fly.
   1 2 3 4 5 don’t know

38. Barbara ate a lot, but she is still hungry.
   1 2 3 4 5 don’t know

39. Mother made the child put on clothes, but he didn’t put them on.
   1 2 3 4 5 don’t know

40. With great effort, Father fed the child, but she didn’t eat.
   1 2 3 4 5 don’t know

수고 많이 하셨습니다. 본 실험에 참여해 주셔서 대단히 감사합니다.
First, I would like to thank you for participating in my research. This exercise is divided into four different sections. Please start with Task 1; then do Task 2, Task 3, and Task 4 in that order. There are no “right” or “wrong” answers for this test; rather, this activity is about your feeling as to the best choices. Before you begin, please give some information on your background. Be assured that all information you provide will be kept confidential.

1. Age: ____________
2. Sex: Female ____________ Male ____________
3. How long have you been studying Korean? ____________
   - Middle school ____________ years
   - High school ____________ years
   - University ____________ years
   - Other ____________ years
4. How much time have you spent in Korea? ____________
5. What other languages do you know and how long have you studied/spoken those languages?
   - Language ____________
   - Length of learning ____________ years
6. You are now (please indicate everything relevant by circling):
   a. Taking undergraduate courses in a Korean university
   b. Taking graduate courses in a Korean university
   c. Taking languages courses in a Korean university
   d. Working as an English instructor
   e. Other ____________
7. How would you rate your level of Korean? (please indicate by circling)
   - Speaking: poor ok good very good near native
   - Listening: poor ok good very good
   - Reading: poor ok good very good
   - Writing: poor ok good very good

Thank you very much. Please start Task 1 now.
Task 1

Translate the following Korean verbs into English. If you don’t know some of the verbs in Korean, please ask me.

1. 열다
2. 만다
3. 놓다
4. 열다
5. 타다 (발 타다)
6. 망다
7. 구르다
8. 튀다 (공 튀다)
9. 돌다 (평이 돌다)
10. 깔다 (병 깔다)
11. 웃다
12. 올다
13. 자다
14. 견다
15. 채다 (갑 채다)
16. 앉다
17. 잡다
18. 일다
19. 낳다
20. 줄다
21. 마다

Thank you very much. Please go on to Task 2.
Task 2

Fill in the blanks below with only one word. Items consisting of a noun and a case marker (조사) are counted as one word (ex: 엽마는, 오빠도, 나에게, 천수를, 순이가 등등).

Example: 순이는 엽마한테 거짓말을 하였다. 그래서 저녁을 굳이야 했다.

한국의 결혼 풍습을 보면 미국의 결혼 풍습과 다른 점이 많다. 한국에서는 혼히 결혼객이라는 게 ________, 여자는 보통 24살에서 29살 ________ 결혼하고 남자는 26.7에서 33.4 사이에 ________ 것이 좋다고 한다. 반면에 ________
결혼객이라는 결별로 생각하지 ________ 것 같다. 아무래나 ________ 사람과 결혼하고 싶을 때 ________ 그게 바로 적령기라는 생각을 ________ 것 같다.

남자와 여자가 ________ 방법도 한국과 미국이 다른 ________ 같다. 한국에서는 엽날에는 거의 ________ 결혼을 했지만 요즘은 연예 ________ 하는 사람이 많다고 한다. ________ 중개 결혼을 하는 경우가 ________ 없고 거의 다 연애 ________ 한다. 한국이나 미국이나 연예 ________ 하는 사람들은 모두, 결혼에서 ________ 중요한 것이 사랑이라고 생각한다. ________ 없으면 서로 만나 사별 ________ 없고 사람이 없는 결혼은 ________ 수도 없다.

반면에 한국에서 ________ 결혼을 하는 사람은 사랑보다 ________ 조건들을 더 중요하게 생각하는 ________ 같다. 집안이나 학벌, 외모, ________ 경제력 같은 조건에 따라 ________ 맞는 사람을 소개해 주는 ________. 다시 말하면, 돈 많이 ________ 집안 좋고 얼굴 잘 ________ 최고의 신랑 신부가 될 ________ 있는 조건을 갖춘 셋이 ________, 사랑은 그 다음으로 중요한 ________ 같다.

Thank you very much. Now move on to Task 3.
Task 3

In this task you will see a series of pictures. Each picture has two sentences beneath it. Your task is to indicate whether the sentences correctly describe the picture by circling the appropriate choice.

1 - least natural (the sentence is least natural for the picture)
2 - sounds strange
3 - kind of ok
4 - sounds good
5 - most natural (the sentence is most natural for the picture)
don’t know (if you are not sure whether the sentence correctly describes the picture or not)

It is possible that both sentences are natural, that both are unnatural, or that one sentence is natural, but the other one is unnatural. Below are some examples:

Both sentences are natural for the picture:

![Cartoon of a mother and father speaking]

엄마가 아빠한테 잔소리를 했다. 1 2 3 4 5 don’t know
아빠가 엄마 잔소리를 들지 않았다. 1 2 3 4 5 don’t know
Both sentences are unnatural for the picture:

천수가 친구들을 숨어있었다. 1 2 3 4 5 don’t know
천수가 친구들을 숨어있었다. 1 2 3 4 5 don’t know

One sentence is natural, but the other sentence is unnatural:

인수와 제식이가 싸웠다. 1 2 3 4 5 don’t know
인수와 제식이가 싸우었다. 1 2 3 4 5 don’t know
Now, start with the following:

1

철수 가 문을 열었다.  
철수 가 문을 열렸다.

요리사가 생선을 탔다.  
요리사가 생선을 탔다.
물이 열어졌다. 1 2 3 4 5  don't know
물이 열었다. 1 2 3 4 5  don't know

버터가 녹았다. 1 2 3 4 5  don't know
버터가 녹아졌다. 1 2 3 4 5  don't know
생선이 탔다. 1 2 3 4 5 don't know
생선이 떨어졌다. 1 2 3 4 5 don't know

정아가 머리를 말렸다. 1 2 3 4 5 don't know
정아가 머리를 말랐다. 1 2 3 4 5 don't know
인호가 공을 굴렸다.

1 2 3 4 5 don't know

유리잔이 깨져다.

1 2 3 4 5 don't know
자영이가 물을 얻었다. 1 2 3 4 5 don't know
자영이가 물을 얻었다. 1 2 3 4 5 don't know

아이가 자겼다. 1 2 3 4 5 don't know
아이가 갔다. 1 2 3 4 5 don't know
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성호가 버터를 녹았다. 1 2 3 4 5 don’t know
성호가 버터를 녹였다. 1 2 3 4 5 don’t know

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정아의 머리가 말랐다. 1 2 3 4 5 don’t know
정아의 머리가 말라졌다. 1 2 3 4 5 don’t know
아기가 걸어졌다. 1 2 3 4 5 don’t know
아기가 갔었다. 1 2 3 4 5 don’t know

아기가 옮겼다. 1 2 3 4 5 don’t know
아기가 웃어졌다. 1 2 3 4 5 don’t know
민석이가 문을 닫았다.  1  2  3  4  5  don’t know
민석이가 문을 닫았다.  1  2  3  4  5  don’t know

공이 굴러갔다.  1  2  3  4  5  don’t know
공이 굴렀다.  1  2  3  4  5  don’t know
엄마가 아이를 길렀다.  1  2  3  4  5  don't know
엄마가 아이를 했다.  1  2  3  4  5  don't know

엄마가 아이를 잡았다.  1  2  3  4  5  don't know
엄마가 아이를 쫓았다.  1  2  3  4  5  don't know
여자아이가 울었다. 1 2 3 4 5 don't know
여자아이가 울어졌다. 1 2 3 4 5 don't know

민수가 공을 둘었다. 1 2 3 4 5 don't know
민수가 공을 둘렸다. 1 2 3 4 5 don't know
상호가 어기를 옮겼다.  1  2  3  4  5  don’t know
상호가 어기를 옮겼다.  1  2  3  4  5  don’t know

만수가 공을 띄웠다.  1  2  3  4  5  don’t know
만수가 공을 띄웠다.  1  2  3  4  5  don’t know
공이 들었다.  1  2  3  4  5  don't know
공이 들어갔다.  1  2  3  4  5  don't know

문이 닫혔다.  1  2  3  4  5  don't know
문이 닫혔다.  1  2  3  4  5  don't know
공이 뛰었다. 1 2 3 4 5 don't know
공이 뛰어졌다. 1 2 3 4 5 don't know

만수가 유리잔을 깨었다. 1 2 3 4 5 don't know
만수가 유리잔을 깨였다. 1 2 3 4 5 don't know
Thank you very much. Please move on to Task 4 now.
Task 4

In this task you will find a series of sentences. You have to decide whether each sentence sounds ‘natural’ (if the sentence is non-contradicting, e.g. it makes sense) or ‘unnatural’ (if the sentence is contradicting, e.g. it doesn’t make sense) by circling the appropriate choice.

1 - least natural  
2 - sounds strange  
3 - kind of ok  
4 - sounds good  
5 - most natural  
don’t know (if you are not sure whether the sentence makes sense or not)

Below are some examples:

a. 순이가 철수를 때렸으나, 때리지 않았다.

1  2  3  4  5  don’t know

b. 내 친구가 차사고가 났으나, 빗이 다치지는 않았다.

1  2  3  4  5  don’t know

Now, start with the following:

1. 비가 왔으나, 오지 않았다.

1  2  3  4  5  don’t know

2. 경수가 아기를 옷게 했으나, 아기가 웃지 않았다.

1  2  3  4  5  don’t know

3. 엄마가 영이를 애를 써서 캐웠으나, 영이가 캐지 않았다.

1  2  3  4  5  don’t know
4. 재미있게 학교에 갔으나, 교실에는 들이가지 않았다.
   1 2 3 4 5 don’t know

5. 선생님이 철수를 예를 써서 압했으나, 철수가 압지 않았다.
   1 2 3 4 5 don’t know

6. 영미가 물을 예를 써서 열렸으나, 물이 열지 않았다.
   1 2 3 4 5 don’t know

7. 철수가 국수를 먹었으나, 먹지 않았다.
   1 2 3 4 5 don’t know

8. 현주가 버터를 예를 써서 녹였으나, 버터가 녹지 않았다.
   1 2 3 4 5 don’t know

9. 엄마가 아이를 자게 했으나, 아이가 자지 않았다.
   1 2 3 4 5 don’t know

10. 순자가 수비에 갔으나, 아무것도 사지 않았다.
    1 2 3 4 5 don’t know

11. 엄마가 영이를 켜게 했으나, 영이가 켜지 않았다.
    1 2 3 4 5 don’t know

12. 민호가 공을 예를 써서 튀겼으나, 공이 튀지 않았다.
    1 2 3 4 5 don’t know
13. 선생님이 철수를 안게 했으나, 철수가 앓지 않았다.
   1 2 3 4 5 don't know

14. 순이가 빨래를 마르게 했으나, 빨래가 마르지 않았다.
   1 2 3 4 5 don't know

15. 민수가 갑호와 싸웠으나, 싸우지 않았다.
   1 2 3 4 5 don't know

16. 경섭이가 공을 구르게 했으나, 공이 구르지 않았다.
   1 2 3 4 5 don't know

17. 아빠가 순이한테 밥을 먹게 했으나, 순이가 밥을 먹지 않았다.
   1 2 3 4 5 don't know

18. 철플이가 공을 둔게 했으나, 공이 둔지 않았다.
   1 2 3 4 5 don't know

19. 현숙이가 머리를 자르러 미장원에 갔으나, 머리를 자르지 않았다.
   1 2 3 4 5 don't know

20. 선생님이 순이한테 책을 써서 읽혔으나, 순이가 책을 읽지 않았다.
   1 2 3 4 5 don't know

21. 영수가 공을 써들 세서 굴렸으나, 공이 구르지 않았다.
   1 2 3 4 5 don't know
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<td>3</td>
<td>4</td>
<td>5</td>
<td>don't know</td>
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**22. 엄마가 아이를 견계 했으나, 아이가 견지 않았다.**

**23. 미수가 잠을 깔으나, 자지 않았다.**

**24. 철수가 얼음을 녹게 했으나, 얼음이 녹지 않았다.**

**25. 선생님이 순이한테 책을 읽게 했으나, 순이가 책을 읽지 않았다.**

**26. 인수가 공을 예를 써서 돌렸으나, 공이 돌지 않았다.**

**27. 아기가 웃었으나, 웃지 않았다.**

**28. 철수가 순이를 읽게 했으나, 순이가 읽지 않았다.**

**29. 경숙이가 머리를 예를 써서 말했으나, 머리가 마르지 않았다.**

**30. 아빠가 아이한테 밤을 예를 써서 먹었으나, 아이가 밤을 먹지 않았다.**
31. 기호가 많이 쌓으면, 아직도 피곤하다.
   1  2  3  4  5  don’t know

32. 염마가 아이한테 음을 애를 써서 입혔으나, 아이가 음을 입지 않았다.
   1  2  3  4  5  don’t know

33. 염수가 음을 넣게 했으나, 아이가 넣지 않았다.
   1  2  3  4  5  don’t know

34. 수희가 맛당을 냄새, 아직도 맛당이 더럽다.
   1  2  3  4  5  don’t know

35. 인호가 음을 들게 했으나, 음이 들지 않았다.
   1  2  3  4  5  don’t know

36. 순자가 염마를 애를 써서 음겼으나, 염마가 음지 않았다.
   1  2  3  4  5  don’t know

37. 경숙이가 음을 열게 했으나, 음이 열지 않았다.
   1  2  3  4  5  don’t know

38. 선아가 학교에 갔으나, 가지 않았다.
   1  2  3  4  5  don’t know

39. 염마가 아이한테 애를 써서 냄새, 아이가 냄새 없었다.
   1  2  3  4  5  don’t know
40. 할머니가 영수를 예를 씌서 제웠으나, 영수가 자지 않았다.
1 2 3 4 5 don’t know

41. 계식이가 연을 예를 씌서 날렸으나, 연이 날지 않았다.
1 2 3 4 5 don’t know

42. 혜란이가 많이 먹었으나, 아직도 배가 고프다.
1 2 3 4 5 don’t know

43. 민수가 영이를 예를 씌서 울렸으나, 영이가 울지 않았다.
1 2 3 4 5 don’t know

44. 엄마가 아이한테 옷을 입게 했으나, 아이가 옷을 입지 않았다.
1 2 3 4 5 don’t know

Thank you so much for your cooperation for my research.
REFERENCES


