TITLE OF PROJECT: **Salience, Frequency, and Aptitude in the Learning of Unaccusativity in a Second Language: An Input Enhancement Study**

TYPE OF GRANT APPLICATION: **Doctoral Dissertation Grant**

TOPIC OF TIRF PRIORITY: **Effective Grammar Instruction for Secondary School Students**

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II. Detailed Proposal

Statement of research issue

Unaccusativity has appealed to an extensive second language acquisition (SLA) research community because it poses interesting and varied learning challenges to second language (L2) learners with diverse first language (L1) backgrounds (e.g., Han, 2006; Hirakawa, 2003; Ju, 2000; Montrul, 2005; Zyzik, 2006). The proposed dissertation project found particular interest in the following overpassivized structures associated with English unaccusativity. These examples were taken from an essay of an intermediate-level Korean speaker:

> "She and he often had a quarrel with this problem. While they were quarreling, they *were* completely *changed* that they have loved each other mind."
>
> "That terrible thought *was vanished* completely after coming to Hawaii."

In these examples, the use of intransitive predicates (specifically, unaccusative predicates) in each sentence is of note, as they are inappropriately used as passivized forms. The use of *change* and *vanish* reflects a tendency to mark unaccusative meanings with passive morphology in this intermediate-level learner's interlanguage system.

This dissertation research was designed to teach structures associated with unaccusativity as described above by employing the teaching technique of visual input enhancement (e.g., Alanen, 1995; Doughty, 1991; Izumi, 2002; White, 1998). The theoretical expectation here is that input that is made visually salient would be able to garner more attention from learners. This added attention will lead learners to notice more of the targets and to process them for subsequent acquisition (e.g., Robinson, 2001; Schmidt, 2001). Findings from study to study have been largely inconclusive, calling for more rigorous, methodologically sound studies to be added to the input enhancement literature (Lee, 2007a; Lee & Huang, 2008).

This study will add new insights and perspectives to the existing input enhancement literature by addressing the theoretical issues of input frequency distribution (e.g., Goldberg & Casenhiser, 2008) and individual difference factors (e.g., Dörnyei & Skehan, 2003; Robinson, 2007). Specifically, the present study investigates how skewed and balanced input distributions would lead to differential learning outcomes, while investigating the roles of language-analytic ability and working memory capacity as two important aptitudinal components.

Theoretical background

Beliefs on the necessity of grammar instruction have undergone many changes. Although not universally true to all classrooms, in the early years of language teaching, grammar was regarded as an indispensable element and L2 instructions generally focused on the grammatical features. In later times, grammar was regarded as a barrier to overcome for the achievement of communicative competence, and hence, instructions focusing on grammatical features were thought as useless, and even detrimental.

Since Long's (1983) now-classic work questioning the effectiveness of L2 instruction and Doughty's (1991) first empirical testing of such a notion, studies have accumulated in favor of the beneficial effects of instruction. One example of this evidence is Norris and Ortega's (2000) meta-analytic synthesis of 49 unique study samples published between 1980 and 1998.

Their study reveals clearly that types of instruction have varied, but that large and durable benefits for L2 learners do exist. Simply put, approaches to teaching grammar varied between those with explicit grammatical explanations and rule presentations, and those forms of instruction that are meaning-focused without overt discussions on grammatical points. Predictably, instructed SLA researchers came to be particularly interested in which types of instruction would benefit learners more. The present study investigates the effects of visual input enhancement as an implicit type of instruction on the learning of targetlike uses of unaccusative predicates in English by Korean native speakers.

The last two decades have witnessed the increase of empirical studies on the efficacy of visual input enhancement on grammar learning. Lee (2007a) reviews 13 existing studies, demonstrating that the previous literature has produced largely inconclusive results across studies. Lee and Huang (2008) report that the existing visual input enhancement studies, when combined, have a small-sized effect (d = 0.22) and students who read enhancement-embedded texts showed slight improvements before and after the treatments (d = 0.55). These reported d-values can be considered low, when compared with findings from Norris and Ortega (2000). However, due to the wide discrepancies in methodological features, reliable comparison across studies proved an extremely difficult task. In addition, Lee and Huang identified several theoretical and empirical issues that have not been appropriately addressed to date.

First, the previous literature has largely ignored the need to address the comprehension issue by design, namely, whether adding visual salience to the input may detract from learners' comprehending well the reading materials where the enhanced input appears. Of the 16 studies meta-analyzed by Lee and Huang (2008), only seven employed reading comprehension measures. Yet, in most instructional contexts, the learning of grammar must be balanced with the learning of content, and a grammar teaching technique that results in lower levels of reading comprehension would be unsatisfactory. Furthermore, the scant evidence from these seven studies suggests a potentially debilitating effect on comprehension of reading textually enhanced passages, with a small-sized but negative effect size (d = -0.26). It might be that textually enhanced reading passages create a trade-off with meaning processing of learners (e.g., Lee, 2007a). The present study will include a measure of L2 reading comprehension in an attempt to obtain a more complete understanding of the roles that visual input enhancement would play not only in form processing, but also in the processing of meaning from L2 reading passages.

Second, it is important to note that previous studies tended to compare the learning outcomes via typographically enhanced texts with those via texts flooded with many input instances of target form, without featuring a true control group in their designs. This bears an important consequence in interpreting previous findings in the literature, because the results might have been somehow contaminated by the independent facilitative effects of using texts enriched with many exemplars (e.g., Trahey, 1996; Trahey & White, 1993; Williams & Evans, 1998). This study will include a true control group, which is to have the effect of a flood partialled out by design and to gauge the benefits of input enhancement more appropriately.

Third, it is obvious that not every L2 learner will equally benefit from experiencing textually enhanced reading materials. Effects of any teaching interventions, including visual input enhancement, will be constrained by wide-ranging individual difference factors. Individual differences in language learning have indeed attracted considerable attention from scholars interested in improving their understanding of the diversity of achievement among L2 learners (e.g., Dörnyei , 2005; Dörnyei & Skehan, 2003; Robinson, 2001, 2002, 2005b, 2007; Sawyer & Ranta, 2001; Segalowitz, 1997; Skehan, 1989, 1991, 1998, 2002, to name just a few). L2 learners

(particularly adults) greatly differ from each other in terms of the speed, route, and eventual level of learning, even when such learner profiles as the amount of exposure to input, starting age of learning, period of formal study, and length of residence in the target culture are held constant. A myriad of cognitive, socio-psychological, and sociocultural factors have been suggested in the SLA literature in an attempt to account for the wide variation among L2 learners in light of how they learn language. One of the most vigorously researched individual difference factors is language learning aptitude. This study particularly addresses the roles of language-analytic ability and working memory capacity as two important and distinct aptitudinal components.

The last but not least important consideration to point out is about the number of input instances that would create an optimal learning condition (cf. Gass, 1997; Wong, 2005). Previous input enhancement studies used reading texts with a wide range of length, as long as 6,640 words in Ha (2005) and as short as 185 words in Alanen (1995). This in turn directly influenced the number of input instances that L2 learners experienced. Notably, despite its potential impact on learning, in none of the previous studies was there an effort to investigate the effects of the frequency of input. As have been claimed by input-based and usage-oriented accounts of language learning, however, it could be expected that different amounts of input exposure would bring different learning outcomes. The current study set out to address the frequency effects on the productivity of learning, specifically investigating whether variations in input distribution would lead to differential constructional generalizability (Goldberg & Casenhiser, 2008). In line with Robinson and Ellis's (2008, p. 510) argument, this study presumes that skewing input by initially presenting higher token frequency of a particular type representing the productive construction is more beneficial for learning than a balanced presentation of tokens.

Research methodology

The study will be conducted at a Korean high school in the Chungnam province, located in the middle-west part of South Korea, under the supervision of the school principal and teachers. Six intact classes with 30-33 students in each class (approximately 195 students) will be randomly assigned to one of four experimental groups and two control groups.

The input enhancement treatments will be embedded in short reading passages (which are about Wikipedia and various uses of leeches in modern medicine) that have been chosen based on likely interest of the topics for 17-year old Korean students and have been modified to contain the unnaccusative exemplars. Twelve target verbs were selected based on the frequency analysis from two widely-used balanced corpora: the Brown Corpus (Kucera & Francis, 1967) and the American National Corpus (ANC) Second Release (Reppen, Ide, & Suderman, 2005). Six of the 12 verbs were chosen as exposure verbs, which will be presented in both the treatment materials and the testing materials (to see the learning extent), and the rest of the verbs, as non-exposure verbs, will be presented in testing materials only (to assess the extent of generalizability).

In order to test the knowledge of the participants about the targetlike construction with unaccusative verbs, three versions of a scaled grammaticality judgment task (GJT) were developed (k = 64 for each version) (see R. Ellis & Barkhuizen, 2005; Gass & Mackey, 2007; Juff, 2001; Lee, Miyata, & Ortega, in preparation; Sorace, 1996, for rationales for the use of this type of GJT). Each target verb generated 12 sentence pairs, where the first sentences, as priming sentences, provide a context for judgment of acceptability of the following target sentences. Students will be required to read the priming sentence first in each pair and then judge the acceptability of the second sentence by marking one of six circles ranging from 1('least

acceptable') to 6 ('most acceptable'). The following is an example of a (grammatical) test item with *appear*, one of the six exposure verbs:

	LEAST ACCEPTABLE					MOST ACCEPTABLE
The water soon drained away.						
Garbage appeared immediately from the river.	1	2	3	4	5	6

In this example, the target sentence is grammatically acceptable, and therefore, students should mark on '6' in order to get a full score for this particular test item. In each version, a half of the items have grammatically acceptable target sentences, whereas the other half items have unacceptable target sentences.[1]

In addition to the scaled GJTs, several instruments have been developed and others adopted from previous research for the study. First, a vocabulary translation task will be administered to check the degree to which L2 participants in this study know the verbs targeted in the current research project. Knowing general meanings of the verbs is expected to be a necessary part for the participants to know the appropriate use of those verbs (see Montrul, 2000, p. 249). Second, L2 reading comprehension tests will be administered to address the effects on reading comprehension of reading enhancement-embedded texts (cf. Lee, 2007a). The current study also adopted a language analysis test that was developed by Schmitt, Dörnyei, Adolphs, and Durow (2004) and was also used by Sheen (2007). The measure was verified to have a satisfactory reliability in both studies (Cronbach's alpha = 0.78 for Schmitt et al. and 0.92 for Sheen). Last, individual differences in working memory span of the participants will be assessed by a "Letter-Number Sequencing Task" adapted from Trofimovich, Ammar, and Gatbonton (2007). Students will hear a series of numbers, from one to 10, in Korean, and Hankul words, from *ka* to *ca*, in various combinations and patterns (the stimuli were digitally recorded). Based on what they hear, students are required to write numbers first with ascending numerical order and then write Hankul words in the order of the consonants.[2] This memory measure was chosen because the task is expected to tax both storage and processing functions of working memory adequately, which has been claimed as an important requirement for any valid working memory span measure (cf. Leeser, 2007; Waters & Caplan, 1996).

There will be three test sessions in total. In the first session, students will complete a consent form and a background survey. A series of pretests will then be administered in the following order: vocabulary translation task, L2 reading comprehension test, language analysis test, working memory test, and the scaled GJT. Approximately one week later, students will be exposed to various versions of a short reading passage for 20 minutes: (1) input enhancement + skewed distribution, (2) input flood + skewed distribution, (3) input enhancement + balanced distribution, (4) input flood + balanced distribution, and (5) a control. After reading the passage, they will be asked to answer 10 multiple-choice comprehension questions within five minutes. This will be followed by another version of the scaled GJT as the posttest. The remaining version of the scaled GJT will be administered three weeks later as the delayed posttest.

In the skewed distribution conditions, *happen* was chosen as the verb type that is predominantly presented. This is to say, *happen*, as specific token constituting positive evidence

[1] The present study targets non-alternating verbs only. Non-alternating verbs do not have transitive counterparts, and thus always appear in an active construction in the input.

[2] In order, the nine numbers in Korean are *il*, *i*, *sam*, *sa*, *o*, *juk*, *chil*, *phal*, and *ku*, and the nine Hankul words are *ka*, *na*, *ta*, *la*, *ma*, *pa*, *sa*, *a*, and *ca*.

that demonstrates the correct usage of unaccusative verbs, appears seven times in the reading passage, whereas each of the remaining five exposure verbs appear just once. The choice of *happen* as the skewed item was based on two reasons. First, *happen* was found to be the most frequent verb member from the analysis of the Brown Corpus and the ANC, and therefore, was expected to function as a potentially good choice for a "verb island" that helps L2 learners "get a fix" on the unaccusative construction (Goldberg & Casenhiser, 2008, p. 210; Tomasello, 1992). Second, the lexical meaning of *happen* was judged to represent the general semantic category of the 12 exposure and non-exposure verbs. Ellis (in press) and Robinson and Ellis (2008) argue that in choosing a skewed item, the prototypicality of the item should be considered. In this study, based on a body of evidence gained from the corpus-based frequency as well as from the analysis of its semantic meaning, *happen* was chosen as the prototypical member representing the overall category of the 12 exposure and non-exposure verbs. By contrast, each of the six exposure verbs appears twice in the passage in the balanced distribution conditions.

Results of the study will be mainly analyzed as to: (1) how input salience and input frequency distributions affect the scaled judgments on the use of unaccusative verbs and reading comprehension by the students, (2) whether varied salience and frequency distribution conditions would lead students to prefer the well-formed unaccusative constructions (based on the responses on the items with correct target sentences) and to disprefer the ill-formed unaccusative constructions (based on the responses on the items with incorrect target sentences), (3) whether the effects of visual input enhancement and frequency distributions on the students' scaled judgments on the use of unaccusative verbs last over three weeks, and (4) the extent to which individual differences in language-analytic ability, working memory capacity, or both, are related with the students' knowledge on the use of unaccusative verbs and L2 reading comprehension.

Statement of likely implications for theory and practice

Findings gleaned from this research will contribute an improved understanding of the effects of input salience and input frequency distributions on the interlanguage development of L2 learners. An improved understanding in this area, in turn, has theoretical and educational implications. From a theoretical perspective, input-based and usage-oriented accounts of language learning are gaining momentum in SLA (e.g., Ellis, 2008; Ellis & Schmidt, 1997; Lee et al., in preparation; Robinson & Ellis, 2008). Distributional input properties and frequency are the main explanatory factors in such approaches. Whereas the majority of previous L2 English studies have investigated the overpassivization structures from purely syntactic approaches (e.g., Lee, 2007b; Levin & Rappaport Hovav, 1995; Oshita, 2001; Perlmutter, 1978; Van Valin, 1990), the proposed research, by taking an usage-based approach to learning, is expected to offer additional and meaningful insights into our understanding of the overpassivization phenomenon and the learning of unaccusativity in L2 English. From an educational perspective, an improved understanding of input enhancement is particularly beneficial in EFL settings, where rich input substantial enough for acquisition is usually not feasible and where a large part of instructional activities are organized around the reading of texts. Given the current climate in Korea with the heightened need for English instruction at all levels of K-12 education and the efforts by the Ministry of Education to implement communicative language teaching across the nation in the face of a serious teacher shortage, the reading-based grammar teaching materials developed by the present study will generate important and useful implications; namely, the findings of the study can engage with wider world issues and national policies for EFL that are Korea-specific but in fact are likely to be relevant for many other EFL contexts.