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Foreword

The Linguistics Journal is a peer-reviewed journal that publishes articles in all areas of the language sciences. Each paper is evaluated in a double-blind fashion, which secures the high quality of articles that are shortlisted and, eventually, recommended for publication. The reviewing procedure is carried out with the invaluable help of seven Associate Editors that supervise the process, as well as more than a hundred reviewers who provide feedback to the authors of submissions. The Editorial Board is constantly expanding, ensuring that the turnaround of articles is faster and that it meets the temporal expectations of the authors. Furthermore, new reviewers are added on a weekly basis in order for the journal to offer constructive feedback to the authors. On this occasion, we would like to welcome two new Associate Editors who have joined the team recently: Dr. Sara Liviero and Dr. Phan Thi Thanh Thao. Special thanks, as always, to the Production Team headed by Dr. Erin Carrie. The Production Team also added two new members as part of the preparations for this issue: Dr. Meaghan Connell and Victoria Clare.

This issue brings ten papers: six Research Articles and four Research Notes. Warm congratulations to all authors whose papers have been accepted. We are delighted to announce that interest in the journal has been on a steady increase during 2014/2015, which looks promising for the forthcoming issues.

The first paper, written by Tien Ngoc Dung Dang, looks into the negative transfer of a Vietnamese syllable type on English closed syllables that affects Vietnamese adult EFL learner’s intelligibility. Data analysis shows that the Vietnamese closed syllable of the CVk type (consonant-vowel-consonant /k/) has a strong impact on the acquisition of numerous English CVC and CVCC syllables, which was one of the starting hypotheses of this article. The phonological interference from Vietnamese as an L1 greatly reduces Vietnamese EFL speakers’ intelligibility and limits the number of final consonants and consonant clusters in English syllables when these are produced by native Vietnamese speakers.

The author of the second research article, Berrin Uçkun, attempts to examine the grammaticality judgments of adult learners who come from a case-marked free word-order L1 background; Turkish, in this case. The aim of this paper is to study two traditions in investigating English dative alternation as it applies to Turkish learners of English as a second
language: to study learners’ awareness of the lexical-semantic distinctions between dative verb subclasses in their syntactic choices and to consider the impact of the dativizability features of dative constituents on learners’ grammaticality judgments. In his twofold approach, two separate studies are carried out so as to cover all dimensions of the dative case.

In their paper on the cultural identity, Alison Stewart and Brenda Wright look at the characteristics of computer-mediated exchanges between learners and how these create opportunities for intercultural learning to EFL students. Based on the theoretical concepts of positioning and epistemic stance, the authors examine the features of Facebook communication between Japanese and Malaysian university students, which is then analysed for evidence of shifts in identity and their effects on the interlocutor.

The fourth contribution, by William MacDonald, explores an interesting phenomenon of the relationship of sleep quantity and EFL test performance in Japanese university students. Sleep deprivation is an understudied area of research and the results of this paper imply that it should be studied even more extensively in relation to the task type set before an EFL student. The belief of a Japanese student that sleep deprivation may provide more time for learning and lead to better test performance is obviously erroneous.

Warren Hancock's study explores the linguistic resources reporters used for attitudinal positioning in the lead up to the second Iraq war. The study proposes that the linguistic and stylistic resources treated elsewhere under such headings as epistemic modality, eventuality, factive and non-factive, tense, direct and indirect speech, etc., can be grouped together on discourse semantic grounds. They equip reporters with the means of taking a stance towards the intended messages in hard news texts.

The concluding Research Article by Nazlınur Göktürk handles the acquisition of verbal inflectional morphology by adult Turkish learners of English, another understudied field of applied linguistics. Some errors tend to be more common than others in spontaneous oral production. The author's intention is to throw some new light on the acquisition of verbal functional categories of tense and agreement, as well as the formal features of [+finite, -past] with auxiliary be and thematic verbs (third person sg.) in non-past contexts.

The first contribution in the Research Note section comes from Skott Freedman, who examines the influence of neighborhood density on word learning in both children and adults. The tokens for the experiments were nonwords of English and separate experiments were carried out with the two groups of participants (children and adults), partly due to the differences in the lexicons used. The results of the analysis show that such novel words with more similar lexical neighbours are repeated more accurately than those that had fewer similar
words in the lexicon.

The aim of Todd Allen's article is to explore the responses given by native speakers of Japanese in a pilot study on “listener response” (a.k.a. aizuchi), a linguistic device that is used by the listener to send verbal and non-verbal cues to the speaker (e.g., un (“yeah”), hai (“yes”) and head nodding). The study is carried out within the interactional sociolinguistics theoretical framework. Participant responses reveal that there are both sociocultural and conversation management strategies involved in the form, frequency, function and intention of aizuchi behaviour.

Ying Cui and Yanli Zhao investigate one of the important facets of translation, as seen from the perspective of translation teaching in a Chinese context. The authors’ initial claim is that students’ memory is a key factor for the success of translation teaching. Their investigation integrates the psychological research on human needs and memory, linguistics, and translation studies to find the major principles for strengthening students’ memory. The study comes to the conclusion that four principles contribute to enhancing students’ memory: being focused, specific, personal and creative in the process of translation teaching.

The concluding paper, written by Biljana Čubrović, looks into the nature of vowel systems across languages, paying special attention to the comparison of two virtually different vocalic systems: those of American English and Serbian. The author addresses three main questions: how common five-vowel systems are cross-linguistically, how and to what extent phonetic duration is utilized in vowel inventories, and how crowded phonological inventories can be easily contrasted across languages.

We hope you enjoy reading these articles in the 2015 edition of The Linguistics Journal and we look forward to your own contributions in future issues.

Biljana Čubrović, Ph.D.
Chief Editor
The Linguistics Journal
The Influence of Vietnamese Syllable Structure CVk (consonant-vowel - consonant /k/) on Vietnamese Adult EFL Learners’ Intelligibility

Tien Ngoc Dung Dang

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Abstract
This paper reports on findings from an investigation into the impact of Vietnamese CVk (consonant-vowel - consonant /k/) syllable structure on 50 Vietnamese adult EFL learners’ intelligibility. The data of this quantitative research study provide evidence that Vietnamese CVk syllable structure was applied by the participants for pronouncing CVC syllable structure (in which vowels are single vowels or front diphthong /eɪ/ and final consonants are s, t, d, st and th) in English words, affecting the learners’ intelligibility.

Keywords
intelligibility, Vietnamese CVk syllable structure

Introduction
Intelligibility is defined as the ability of interlocutors to recognize words, and it has become a key norm and learning goal for second language learners in different countries. In the context of English as a global language, English is being spoken among more and more non-native speakers of English. Attaining native-like pronunciation does not seem to be easy, then, for adult ESL/EFL learners. This is also reflected by the Critical Period Hypothesis (Lenneberg, 1967), suggesting that adults are not able to achieve native-like pronunciation. Subsequent L2 studies related to this idea found the same result that negative correlation between age and second language learning acquisition can be ascribed to a biologically based critical period that prevents older L2 learners (after puberty) from achieving native-like competence in the phonology of a non-native language. Therefore, the aim of phonological instruction in second language (L2) classrooms should be the achievement of reasonable intelligibility (L2 learner’s speech is intelligible enough), rather than native-like pronunciation intelligibility, shown by the studies carried out by Kenworthy (1997), Van Pattern (1998) and Nakashima (2006), for example.

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In assisting ESL/EFL learners to attain reasonable intelligibility, we need to know what factors affect the speech production of ESL speakers. It is argued that there is a mixture of factors, such as strength of concern for pronunciation accuracy and an aptitude for oral mimicry (Purcell & Suter, 1980), which influence the speech production of L2 speakers but Odlin (1989), Ioup and Weimberger (1987) and Van Pattern (1998) suggested that the native language and negative transfer are the major sources of difficulties in inter-language phonology. The significance of the L1 as a factor is also pointed out by Avery and Ehrlich (1992), who claimed that the sound pattern of the learners’ first language was transferred to the second language and is likely to cause foreign accents; thereby, potentially reducing L2 speaker intelligibility. This view was suggested by previous studies (Gallardo del Puerto, Gómez Lacabex & García Lecumberri, 2007; Munro & Derwing, 1995) that a higher degree of foreign accent was associated with lower intelligibility for both native and non-native speakers. Despite this, the relationship between the first language and speaker intelligibility, in various respects, has become an important focus of L2 pronunciation research in recent years and this is much discussed in the literature, with empirical studies suggesting that researchers should investigate the relationship of the first language to speaker intelligibility in terms of syllable structure. There are few such studies, indicating further studies on this issue are needed. This paper intends to explore such a relationship.

**Mother Tongue, Syllable Structure and ESL Speakers’ Intelligibility**

There have been studies on the impact of the mother tongue on ESL speaker intelligibility at the suprasegmental level, including intonation, rhythm, stress, pause, but most lack reference to syllable structure, which is another aspect of suprasegmental features. Zielinski (2006), Nakashima (2006) and Dang (2013) are three of the few existing studies on this issue. Zielinski (2006) pointed out, in her study of an adult Vietnamese ESL speaker’s intelligibility with three native (Australian) listeners, that syllable stress errors are a potential factor in reducing speaker intelligibility. This study suggested that the syllable stress pattern was sufficiently different from standard use that it misled the listeners, who had to concentrate heavily on it in their efforts to achieve understanding.

Additionally, Nakashima’s findings (2006), in his research report from reanalyzing the data of Japanese adult EFL learners’ errors presented by Jenkins (2000), indicated 75 percent of the errors (which Jenkins treated as segmental) may involve suprasegmental problems. He categorised the individual sound errors as suprasegmental, brought about by nasals that occur only at the end of a syllable, non-reduction of weak syllables (e.g. [səkə:] as in “soccer club”), and Japanese syllable structure. He further stated that these errors were mainly caused by the Japanese open syllables (CV#V) applied to pronunciation of English closed syllables (CVC#V), making words unlinked in the subjects’ speech, since Japanese has a very limited number of final syllable consonants.
(Nakashima, 2006). This view raised a hypothesis for further studies, specifically Dang’s study (2013), which shows that open syllable structure was used to articulate English closed syllables of polysyllabic words by Vietnamese learners, due to the very limited occurrence of final consonants in Vietnamese, significantly reducing their English intelligibility. Considering these points, there is a need for more studies to provide further insights into this issue. Thus, this paper explores the impact of Vietnamese close syllable CVk structure on Vietnamese adult EFL speakers’ intelligibility.

**Syllable Structure in English and Vietnamese**

The major difference in syllable structure between English and Vietnamese is likely to be a major factor affecting Vietnamese adult ESL/EFL learners’ syllable pronunciation. In the English language, there are various types of syllable structures, such as consonant vowel (CV) but, also, CVC, CCVC, CCCVC and CCCVCC (Erickson, 2001). As in Thai and Chinese, it is widely accepted that, in Vietnamese, a syllable consists of two compulsory elements: a tone and a nuclear vowel. Besides the four tones shared with Thai and Chinese – namely, mid, low, falling and rising (Mok, 2007; Zhang, 1996) – Vietnamese has a low-falling-rising tone and a low-falling broken tone. This explanation of syllable structure is supported by Ngo (2006), who suggested:

> Each syllable consists of two mandatory components: a tone and a nuclear vowel; in addition, three optional components may be present: an initial consonant, a sound indicating the labialization (rounding of the lips) of the syllable, and a final consonant or semivowel. (p. 7)

The syllable structure of the Vietnamese language is displayed in Table 1, as presented by the authors Dang (2006), Doan (1999), Ngo (2006) and Tang (2007). Figure 1, taken from Ngo (2006: 14), illustrates the six Vietnamese tones: mid-level tone (ma=ghost); low-falling tone (mà=but); high-rising tone (má=mother); low-falling-rising tone (mà=grave); high-rising broken tone (mả=horse); low(est)-falling broken tone (mạ=plate).

<table>
<thead>
<tr>
<th>Tone</th>
<th>Syllable-initial sound</th>
<th>Medial /u/</th>
<th>Nuclear vowel</th>
<th>Final sound or semi vowel</th>
</tr>
</thead>
</table>

---

Each syllable consists of two mandatory components: a tone and a nuclear vowel; in addition, three optional components may be present: an initial consonant, a sound indicating the labialization (rounding of the lips) of the syllable, and a final consonant or semivowel. (p. 7)
Vietnamese is an Asian tonal language with a simpler syllable structure than English. It is widely accepted that CV or CVC plus a tone are the two basic syllable structures in the Vietnamese language. CV is considered an open syllable and defined by Cox and Mannell (2009) as a syllable that ends with a vowel. They further state ‘[n]o syllable has more than one vowel. Vowel-like sequences in a single syllable are interpreted as diphthongs or semi-vowel plus vowel sequences’ (ibid.: 3). Therefore, vowels in open syllable CVs include diphthongs or a vowel plus semi-vowel. Meanwhile, CVC is regarded as a closed syllable, since closed syllables have at least one final consonant, as defined by Cox and Mannell (2009) and Roach (2002). These syllable structures can be illustrated with CV ba (father) and CVC bang (state). However, the frequency of the closed syllable CVC structure is much lower than that of the open syllable structure CV, since, as in Thai, there are only six syllable-final consonants (/p/, /t/, /k/, /n/, /ng/ and /m/) in Vietnamese (Mok, 2007; Ngo, 2006), of which the first five consonants are shared with Chinese (Zhang, 1996), compared to 54 syllable-final consonants in English (Tang, 2007).

In contrast, the Vietnamese language has 14 vowels and 27 diphthongs and triphthongs, whereas English has 20 vowels and only 5 diphthongs (Roach, 2002). Tang (2007) stated ‘[t]he English and Vietnamese languages share seven mono-vowels’ (p. 7), while the vowel /æ/, listed as unshared by Tang, is considered to be a shared vowel by Ngo (2006) and Dang (1998). The latter also added to the shared list four diphthongs in English, called principal vowels, in combination with final semi-vowels /i/ and /u/ in Vietnamese (Figure 2 and Figure 3, below).
Dang (2013) suggested that such dissimilarities of syllable structure between English and Vietnamese leads to Vietnamese adult EFL/ESL learners’ English mispronunciation. However, this study focuses on close syllable CVk and its potential impacts on Vietnamese ESL speaker intelligibility.

**CVk in the Vietnamese Language and Its Potential Impact on Vietnamese ESL Speakers’ Intelligibility**

Nguyen’s (2007) study found that Vietnamese adult ESL learners replaced the final /t/, as in “thought”, and /d/, as in “could”, with the velar /k/. This replacement is listed as a segmental error and has not been provided with any explanation. Actually, replacing or adding the velar /k/ could be verified by the nature of the syllable structure CVk.

CVk is understood as consonant-vowel-consonant /k/, while C could also be considered as a zero consonant. It is a rule in the Vietnamese language that the final velar consonant /k/ agrees with
a preceding single vowel and unshared preceding diphthongs or triphthongs, as displayed in Figure 3. In other words, the shared vowels in Figure 3, such as /au/, /au/, /au/, etc., are never followed by the voiceless velar /k/ in the Vietnamese language (Dang, 2006; Hoang, 2008). This could account for the omission of this final sound undertaken by Vietnamese adult EFL learners, as Dang (2013) and Nguyen (2007) found that “hike” and “like” were wrongly pronounced as “high” and “lie”. Exceptionally, the preceding front diphthong /e/ sounds like the front vowel /e/ in Vietnamese. This is supported by Doan (1999), who stated that the velar /k/ very often agrees with the preceding front vowels, such as /i/, /e/ and /e/.

Most Vietnamese speakers tend to replace the final stop /t/ with the final consonant /k/ when pronouncing Vietnamese words ending with /t/ (Dang, 2008). This is also supported by Le (2008), who claimed that many university students had problems with spelling final letter “e” and “t”, which was mainly brought about by their pronunciation. For instance, the minimal pairs m Alec and mât, câc and cát are often produced as /mak/ and /kak/.

Therefore, it is justified to hypothesize that Vietnamese adult ESL learners might apply CVk (in which the “k” represents the consonant /k/) to produce the CVC or CVCC in English, in which the final C represents consonants such as /t/, /d/, /s/ and the consonant cluster /st/ because they are alveolar consonants which share the same place of articulation. In addition, based on Doan’s view (1999), Vs in this structure are assumed to be single vowels and the close front diphthong /eu/. For instance, “at” and “practice” might be produced as /aek/ and /ˈpraektɪks/, and the words “test” and “text” might be similarly produced as /teskt/. This might also occur in words with the CVth structure, since the letters “th” might be mistakenly considered as /t'/, also alveolar-palatal in Vietnamese (Tran, 2010). For example, the word “with” might be articulated as /wikt'/.

**Table 2 Vietnamese CVk structure and its reflection on Vietnamese speakers’ pronunciation of English**

<table>
<thead>
<tr>
<th>Vietnamese CVk</th>
<th>English CVC (V are single vowels and diphthong /eu/)</th>
<th>Vietnamese adult EFL learners’ English pronunciation</th>
</tr>
</thead>
<tbody>
<tr>
<td>CVk (as in câc (various), /ka:k/)</td>
<td>CVt (as in cat, /kaet/)</td>
<td>/kaek/ or /kaekt/</td>
</tr>
<tr>
<td></td>
<td>CVst (as in test, /test/)</td>
<td>/teskt/</td>
</tr>
<tr>
<td></td>
<td>CVd (as in need, /ni:d/)</td>
<td>/ni:k/</td>
</tr>
<tr>
<td></td>
<td>CVs (as in practice, /ˈpraektɪs/)</td>
<td>/ˈpraektɪks/</td>
</tr>
<tr>
<td></td>
<td>CVth (as in breath, /breθ/)</td>
<td>/brekt'/</td>
</tr>
</tbody>
</table>

Dang (2006: 22)
Measurement of Intelligibility

Munro, Derwing and Morton (2006) pointed out that a range of diverse techniques and methods have been employed by scholars to explore non-native speakers’ intelligibility, including listening comprehension tests (Anderson-Hsieh & Koehler, 1988), cloze tests (Smith & Rafiqzad, 1979) and grammatical paraphrase tasks (Ingram & Nguyen 2007). The choice of which of these methods to employ depends on the features that are targeted for measurement of intelligibility in the speech of the non-native speakers. Some researchers (Water, 2002) employed speech stimuli for participants to identify words or utterances, based on the assumption that non-native speakers’ intelligibility is significantly influenced by their confusion between voiced and voiceless sounds or short and long vowel sounds. For instance, in focusing on the pronunciation of CVC words, only four minimal pairs (cap/cab, pick/pig, pot/pod, beet/bead) were used by Water (2002, as cited in James, 2006: 8) to test word-recognition intelligibility. Since his findings reveal that American English listeners frequently could not distinguish between the final voiceless and voiced consonants of the test words produced by ESL/EFL speakers (Japanese and Taiwanese), a conclusion was drawn by Water that, to improve speech intelligibility, English speaking instruction should have exercises in pronouncing and distinguishing words with voiced and voiceless final consonants.

It is important to investigate the approaches that are commonly used to measure ESL or EFL learners’ intelligibility. Dictation tasks have been accepted as one of the common approaches to evaluating L2 speakers’ verbal intelligibility. In these dictation tasks, listeners are requested to write out speech utterances that they hear. The number of words which are correctly written down is recognized as an index of speech intelligibility (see Burda, Scherz, Hagerman & Edwards, 2003; Derwing & Munro, 1997; and Munro et al., 2006).

In this study, dictation tasks were applied to identify utterances at the syllable structure level. This is because potential errors would appear in closed CVC words with final syllabic consonant /s/, /d/, /t/, /st/ and /th/ and their preceding single vowels and front diphthong /eɪ/, which were likely to be transcribed wrongly or omitted due to the application of open syllable CVk in the pronunciation test.

Method

Theoretical Framework

For the purposes of this paper, a theoretical framework was developed which was prompted by previous studies.
Research Question

This article responds to the following research question:

How does the CVk syllable structure transfer impact Vietnamese speakers’ intelligibility?

Participants

Speakers

This quantitative study involved collecting data from university students in Vietnam via a pronunciation test. There were 50 first-year students between 19 and 20 years old from the English Department of a university in Vietnam. They had seven years of previous English instruction and had been learning English at the university for more than one semester. The total number of first-year students who majored in English for teachers is 250 or more; the students were divided into five classes. The students in this programme usually have a higher level of English, particularly in speaking, than those in other faculties, both from this university and from other universities. The curriculum for year 1 covers English subjects associated with instruction in the four skills, grammar and phonetics. Importantly, the sample is decided on the basis of sample size and the confidence interval with the idea that ‘larger samples yield narrower confidence intervals’ (Cooksey, 2007: 356). In this study, the confidence interval is 1/5 (50/250) from the target population. In other words, a random sample gives each student a 1 in 5 chance in the study or a probability of selection of 0.2. Such a probability sample meets precision requirements (Berends, 2004). Therefore, it can be said that this sample will be useful for gathering information on the research question to test the hypothesis.

Listeners as Raters

After considering the two listener factors – listeners’ linguistic proficiency and familiarity – as Kenworthy (1997) suggested, ‘[t]here are two factors in determining speaker intelligibility; first the listener’s familiarity with the respective foreign accent and, second, the listener’s ability to use contextual clues when listening’ (p. 14). A group of ten listeners (5 native, three Australian and two British, and 5 non-native) were chosen to rate the 50 participating Vietnamese EFL speakers’
intelligibility. That is, they were raters who had no, or very little, contact with Vietnamese speakers and they had a very high level of English proficiency. According to the basic criteria, the five non-native speakers were selected from a list of the researcher’s colleagues, with qualifications at Master’s level in Applied Linguistics or TESOL, they came from various countries and had some years’ experience in teaching English. Three of them were Iranian, Chinese and Indian-Singaporean. The other two non-native listeners were an Iraqi-English interpreter and a Dutch IT programmer. All of the non-native English assessors were fluent in English speaking and listening skills. As for the five native speakers, the selection was also made through the Vietnamese-accented English researcher’s communications with assessors because such communications told the researcher whether or not they were friendly and how frequently they had contact with Vietnamese-accented English speakers. The reason for this requirement is that the recruitment process between the researcher and the assessors was made in a good and friendly manner in order to minimize the bias which might be caused by the factor, ‘listeners’ attitude to foreign accents’, because native (L1) listeners frequently have a negative attitude towards foreign-accented speakers and are known to be highly sensitive to foreignness in speech (Munro et al., 2006).

Pronunciation Test

In this study, a pronunciation test was designed by selecting a reading text in the IELTS listening textbook (Scovell, 2006), in which the vocabulary was not unfamiliar to the participants. The reading text consisted of 312 words in which 30 were related to the aim of the current paper (see Appendix). This was then tape-recorded by the researcher. Fifty handouts of the text were given to the participants at the first meeting in the classroom. The researcher presented the aims of the research, gave instructions about the pronunciation test and the method of measurement of their performance. To make sure all of the informants understood and were able to read the text aloud meaningfully, they were asked to read it with the help of a dictionary at home before making an appointment with the researcher to record their pronunciation performance in a quiet room at the university.

To measure the participants’ speech intelligibility, the ten raters were requested to listen to the recordings and write down the words they heard. They were also asked to write down non-English words, if that was what they heard, because this would provide further evidence relevant to the study. The students’ pronunciation performance was measured based on the number of words the raters found intelligible and could transcribe after listening to the recording three times. This was considered a dictation task for the ten raters. The 50 subjects’ pronunciation performance was measured at the syllable structure level.
30 Words in the Pronunciation Test

Based on the hypothesis raised in the literature review, errors attributed to the application of the Vietnamese CVk syllable structure occur in 30 out of 312 words (see Appendix). The CVk is hypothesized to be applied to produce English CVC or CVCC in which V are single vowels or only close front diphthong /et/ while final C and CC stands for /s/, /t/, /d/, /st/ and /th/, making strange prosody to the listeners. This is clarified in Table 2, below. As this paper is concerned with the errors from these 30 words, all other errors were not analysed.

<table>
<thead>
<tr>
<th>Frequency</th>
<th>Test words in a pronunciation test</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Had</td>
</tr>
<tr>
<td>1</td>
<td>Good</td>
</tr>
<tr>
<td>5</td>
<td>Stress</td>
</tr>
<tr>
<td>1</td>
<td>Test</td>
</tr>
<tr>
<td>1</td>
<td>Need</td>
</tr>
<tr>
<td>1</td>
<td>Assess</td>
</tr>
<tr>
<td>1</td>
<td>Shortness</td>
</tr>
<tr>
<td>1</td>
<td>Stressful</td>
</tr>
<tr>
<td>1</td>
<td>Breath</td>
</tr>
<tr>
<td>1</td>
<td>Should</td>
</tr>
<tr>
<td>1</td>
<td>Passed</td>
</tr>
<tr>
<td>1</td>
<td>With</td>
</tr>
<tr>
<td>1</td>
<td>Practise</td>
</tr>
<tr>
<td>1</td>
<td>Read</td>
</tr>
<tr>
<td>1</td>
<td>Hard</td>
</tr>
<tr>
<td>1</td>
<td>Sleeplessness</td>
</tr>
<tr>
<td>2</td>
<td>Allocate</td>
</tr>
<tr>
<td>1</td>
<td>Dissect</td>
</tr>
<tr>
<td>1</td>
<td>Grades</td>
</tr>
<tr>
<td>1</td>
<td>Put</td>
</tr>
<tr>
<td>1</td>
<td>Underestimate</td>
</tr>
<tr>
<td>1</td>
<td>Overestimated</td>
</tr>
<tr>
<td>1</td>
<td>Sweaty</td>
</tr>
<tr>
<td>1</td>
<td>Reports</td>
</tr>
</tbody>
</table>

Data Analysis and Discussion

Influence of the CVk on the Participants’ Intelligibility

The raters’ transcriptions of the 30 test words were examined to determine errors affecting speaker intelligibility. As a reminder, the number of errors were measured on the basis of words which were incorrectly interpreted by the raters or omitted in each transcript. The analyses are based on descriptive statistics shown in Table 4. Such analyses are also supported by Figure 6, the diagram of standard deviation from the pronunciation mean errors and Figure 5, the graph of the distribution of the 50 participants’ pronunciation errors.
Table 4 Descriptive statistics for pronunciation errors

<table>
<thead>
<tr>
<th>Values</th>
<th>Pronunciation Errors</th>
</tr>
</thead>
<tbody>
<tr>
<td>N</td>
<td>50</td>
</tr>
<tr>
<td>Mean</td>
<td>25.4800</td>
</tr>
<tr>
<td>Median</td>
<td>26</td>
</tr>
<tr>
<td>Mode</td>
<td>27 and 29</td>
</tr>
<tr>
<td>Std. Deviation</td>
<td>3.45372</td>
</tr>
<tr>
<td>Std. Error Mean</td>
<td>.4884</td>
</tr>
<tr>
<td>Range</td>
<td>12</td>
</tr>
<tr>
<td>Minimum</td>
<td>18</td>
</tr>
<tr>
<td>Maximum</td>
<td>30</td>
</tr>
</tbody>
</table>

From the descriptive statistics in Table 4, the mean pronunciation score shows that, on average, the participants made 25.48 errors out of the 30 test words. This is an 84.9 percent error rate. Only 15.1 percent of the total words were transcribed correctly by the raters. In Figure 5, the graph of frequency distribution demonstrates that 29 out of the 50 participants made pronunciation errors above the mean 25.48. Moreover, the graph displays that 28 percent of the participants had 27 and 29 errors, identified as mode values in Table 4 that are defined as the most frequently occurring scores in a distribution. This table also shows that the statistic minimum is 18, indicating that 54.28 percent of the test words were omitted or mis-transcribed, although there is a great range (12) between the minimum (18) and the maximum (30). Such a range is supported by a large standard deviation of 3.45, showing that the data points are very far from the mean. This is illustrated in Figure 6, 68% of the errors are within 22.03 and 28.93 with one standard deviation from the mean.
Another statistical value which was estimated was the confidence interval of the mean, since such statistics are used to determine the range of the interval within which 95% of all samples have the population mean. These values in Table 5 show that we can be 95% certain that the sample mean errors are somewhere between 24.4985 and 26.4615, ranging from 81.63 percent to 88.2 percent out of 30 words. In addition, the standard error mean in Table 4 reflects that 95 of the times (95 percent confidence interval) the sample mean will have 1/5 chance of differentiating among the students 99.52 percent of the time (an error of .4884).

All of these values provide evidence that the participants’ pronunciation errors strongly affected their intelligibility. Such errors can be explained by the application of the Vietnamese CVk structure to produce the English closed syllable CVC, in which vowels are single vowels or only preceding close front diphthong /ɛɪ/, while final consonants are /s/, /t/, /d/, /st/ and /th/, as hypothesized in the literature review and methodology.

<table>
<thead>
<tr>
<th>95% Confidence Interval of the Difference</th>
<th>Lower</th>
<th>Upper</th>
</tr>
</thead>
<tbody>
<tr>
<td>24.4985</td>
<td>26.4615</td>
<td></td>
</tr>
</tbody>
</table>

**How Does the CVk Syllable Affect Participants’ Intelligibility?**

Errors caused by the application of the Vietnamese CVk in the pronunciation test are shown below (Table 6). The first column shows raters and their transcripts, the second column contains the original words in the pronunciation tests (formatted in a reading text) and the third column shows the variants of the phonemic representation of the original words in the second column. These
variants are regarded as evidence of the participants’ pronunciation errors due to the application of the Vietnamese syllable CVk to English. The abbreviations of the first column are clarified as follows: L1 and T1 stand for listener 1 (rater 1) and transcript 1. Then, for example, the variant of the original word “stress” (in column 2) is “texts” (in column 3), which is found in L4.T16 of column 1, which is an abbreviation of listener 4 and transcript 16. In other words, this variant, “texts”, from the original word “stress” was found in transcript 16 by rater 4.

Table 6 Errors brought about by the application of CVk

<table>
<thead>
<tr>
<th>Raters’ Transcripts No.</th>
<th>English CVC (s, st, t, d, th)</th>
<th>Vietnamese CVk</th>
</tr>
</thead>
<tbody>
<tr>
<td>L1.T4</td>
<td>Stress</td>
<td>Risk</td>
</tr>
<tr>
<td>L4.T16, L7.T34</td>
<td></td>
<td>Texts</td>
</tr>
<tr>
<td>L7.T31</td>
<td></td>
<td>Speak</td>
</tr>
<tr>
<td>L10.T50</td>
<td></td>
<td>Streks</td>
</tr>
<tr>
<td>L4.T16</td>
<td>Assess</td>
<td>Except</td>
</tr>
<tr>
<td>L7.T33, L10.48</td>
<td></td>
<td>Accept</td>
</tr>
<tr>
<td>L10.T50</td>
<td></td>
<td>Access</td>
</tr>
<tr>
<td>L4.T20</td>
<td>Test</td>
<td>Takes</td>
</tr>
<tr>
<td>L8.T38, L7.T31&amp;T32</td>
<td></td>
<td>Take</td>
</tr>
<tr>
<td>L10.T47,48&amp;49</td>
<td></td>
<td>Affect</td>
</tr>
<tr>
<td>L4.T16</td>
<td>Shortness</td>
<td>Shock is</td>
</tr>
<tr>
<td>L8.T31</td>
<td></td>
<td>Shock its</td>
</tr>
<tr>
<td>L10.T46</td>
<td></td>
<td>Arsenic</td>
</tr>
<tr>
<td>L1.T3</td>
<td>Need(s)</td>
<td>Neeks</td>
</tr>
<tr>
<td>L8.T37</td>
<td></td>
<td>Leak</td>
</tr>
<tr>
<td>L8.T31</td>
<td></td>
<td>Steak</td>
</tr>
<tr>
<td>L4.T16</td>
<td>Read</td>
<td>Rest</td>
</tr>
<tr>
<td>L7.T33</td>
<td></td>
<td>Risk</td>
</tr>
<tr>
<td>L8.T38</td>
<td>Breath</td>
<td>Break</td>
</tr>
<tr>
<td>L10.T50</td>
<td>Sweaty</td>
<td>Squickly</td>
</tr>
<tr>
<td>L7.T33</td>
<td>Good</td>
<td>Look</td>
</tr>
<tr>
<td>L7.T33</td>
<td>Reports</td>
<td>The box</td>
</tr>
<tr>
<td>L10.T50</td>
<td></td>
<td>Repok</td>
</tr>
<tr>
<td>L7.T34</td>
<td>Put</td>
<td>Booked</td>
</tr>
<tr>
<td>L10.T46</td>
<td>Sleeplessness</td>
<td>Slapenic</td>
</tr>
<tr>
<td>L2.T10</td>
<td>Grades</td>
<td>Cakes</td>
</tr>
<tr>
<td>L10.T50</td>
<td></td>
<td>Grake</td>
</tr>
<tr>
<td>L10.T46…</td>
<td>Overestimated</td>
<td>Optimistic</td>
</tr>
<tr>
<td>L10.T47, L7.T36,38…</td>
<td></td>
<td>Over…timatic</td>
</tr>
</tbody>
</table>
As noted in the literature review, Dang (2008) suggested that Vietnamese adult learners have a tendency to use CVk to articulate the English CVC in their speech, in which the vowels are single vowels or preceding close front diphthong /eɪ/, and final syllabic consonants that are substituted in this structure include /s/, /t/, /d/, /st/ and /th/. The findings from Table 6 provide support for such a pronunciation habit, affecting the participants’ speech intelligibility. There is evidence that the final syllabic consonants of CVC — for example, /s/, as in “stress”, “assess”, “shortness”; /t/, as in “put”, “reports”, “shortness”; /d/, as in “need”, “read”, “grades”, “overestimated”, “underestimated”, “good”; /st/, as in “test”; and /th/, as in “breath” — show the CVk structure. Specifically, the CVk was also found in quite a few nonsense words such as “neeks”, “slepanic”, “repok”, “over...timatic”, “under...timatic” and “streks”, indicating that the CVk was generally noticed in the raters’ transcriptions, as it appears in a great number of the transcripts by all ten raters. All of this suggests that Vietnamese CVk structure has an effect on the participants’ pronunciation of CVC structures in English.

**CVk for CVs**

The first evidence of the influence of CVk on the pronunciation of English CVC structure comes from different variants of “assess”, which was interpreted as “except” in transcript 16; “accept” in transcript 22 and transcript 48 by rater 7 and rater 10; and “access” in transcript 50. The CVk are found in the first syllables of these ‘new’ words — except, accept and access — due to the final syllabic consonant /s/ and its preceding single vowel /ə/ of the first syllable of the original word “assess”. This argument is strongly supported by different variants from the original word, “stress”. It is converted into “risk”, “text”, “speak” and “streks” in transcript 4, transcripts 16 and 34, transcript 31 and transcript 50, respectively. All of these ‘strange’ words contain the CVk, indicating that the insertion of the voiceless velar [k] in the production of the words that end with “s” follows a regular analogy pattern. This could have influenced the raters’ recognition of “stress” as the original word. It is particularly obvious that the variant “streks”, despite its meaninglessness, could have been deliberately transcribed in this way by rater 10, who has been a teacher of English in Australia for years, implying that the CVk in the articulation of the word “stress” was deliberately performed by the participants. This could be an answer to why the original word, “stress”, was omitted in many transcripts. This interpretation is strengthened by the observation that none of the transcripts captured all five of the occurrences of the word “stress” that appeared in the pronunciation tests. Further evidence is found in the variant “arsenic” in transcript 46 from “the shortness” and in the variant “slapernic” from “sleeplessness” in transcript 46. Both variants show the appearance of the final syllable CVk under the influence of the CVs structure of the original words, “shortness” and “sleeplessness”, although there could be other causes for these variants. The presence of the CVk in
their speech probably affected the interpretation of these new words. To summarise, the findings suggest that the application of CVk in the participants’ pronunciation in the test affected their speech intelligibility.

**CVk for CVst**
The presence of the CVk in the syllable structure CVst is shown in Table 6 in the use of such four variants as “takes”, “take”, “text” and “affect” from the original word “test”, supporting the suggestion discussed in the literature review that the syllable structure CVk might be employed to pronounce the English CVst, giving rise to nonsense words which sound very different from the target word. In fact, all four variants are different from the original word, “test”, because of the CVk. Additionally, in many other transcripts, the word “test” was omitted. This indicates that the participants also have a pronunciation problem with English words of the syllable structure CVst.

**CVk for CVt**
Table 6 reveals that the CVk is also applied to produce the English CVt structure. This problem is illustrated through different variants, such as “shock is” and “shock its” from the target word “shortness”; “the box” and “repok” from the original word “reports”; “squickly” from “sweaty”; and “booked” from “put”. It is clear from the first target word, “shortness”, that its first syllable, carrying the structure CVt, “short” has been converted into CVk in its variants: “shock is” in transcript 16 and “shock its” in transcript 31. Such application of CVk is also found in the other words, as mentioned above. Thus, it can be inferred that the variants reflect the impact of the syllable structure CVk on the informants’ English CVt articulation in the pronunciation tests.

**CVk for CVd**
The final syllabic consonant /d/ in the syllable structure CVd shares such phonetic values as alveolar and stop with the consonant /t/, the same place and manner of articulation (see earlier section). Thus, it is not unusual that the CVk is still seen in the variants from the original words shown in Table 6. For instance, the word, “need(s)” has been changed to “neeks”, “leak” and “steak” by rater 1, rater 8 and rater 7 in transcript 3, transcript 37 and transcript 31, respectively. Likewise, the CVk exists in all the variants from the other target words, “read”, “good”, “grades”, “overestimated” and “underestimated”, despite the appearance of other phonetic variations. Therefore, it is reasonable to say that the presence of the velar [k] of the variants suggests the influence of the CVk on the English CVd pronunciation performed by the participants.
CVk for CVth

It is justified to claim that CVk has an effect on the participants’ pronunciation of the English CVth structure. This is evidenced in Table 6, where the variant “break” is a result of the transfer of syllable ending applied to the original word, “breath”, in transcript 38. That is, CVk in the Vietnamese output “break” reflects the perceived articulation CVth of the English word “breath”.

Conclusion

The findings of this study give rise to the conclusion that Vietnamese CVk was applied by the participants in the pronunciation test to produce the English close syllable CVC structure, affecting their intelligibility. The findings verify the hypothesis raised in the literature review above. In spite of reducing the subjective factors in measuring the participants’ intelligibility to the minimum, as was discussed in the methodology, this problem is also inevitable because bias might occur from exhaustion of each rater caused by spending three or so hours on end in transcribing the five recordings he or she was asked to measure. Another limitation of the pronunciation data is that the researcher does not use multiple raters for intelligibility to enhance reliability for the study.

Acknowledgements

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References


Appendix: Pronunciation Test

We’ve all known students who’ve had a good understanding of the subject material, yet failed exams or performed well below expectations. Likewise, we’ve known students that have, for all intents and purposes, done very little work and passed with flying colours. Often, these results can be put down to one thing – stress or a lack of it.

Don’t underestimate the importance that stress plays in exam performance. With any exam, you should front up feeling confident, comfortable and organized. Rightly or wrongly, exams, in effect, not only test your academic ability, they assess your frame of mind and your skill to perform under pressure.

We all recognise that stress affects us physically – I’m sure you’ve all experienced an increased pulse or sweaty hands or underarms or shortness of breath when placed in a stressful situation. Sleeplessness can also be a problem around exam time. The most effective way to manage these physiological reactions is through controlled breathing, which we’ll practise later.

Psychologically, stress affects the way you think. For an exam, you need to think rationally, particularly after you read an exam paper which you know nothing about is very hard to do. Otherwise, stress can make you panic. Look at the question calmly and rationally and dissect the question. And, let’s face it, even if you haven’t prepared well enough, you’ll still need to think rationally in order to do your best under those very trying circumstances!

Don’t rely on what other students tell you about the time they allocate to study. The reports we have had over the years have been ridiculously overestimated and underestimated. We’re all different, so it stands to reason that the time we need to allocate to study will be different! Generally speaking, for every hour of lectures you attend, you will need another hour of follow-up or research work, if you want to achieve good grades.

End of the pronunciation test.
Dative alternation in English as an L2 has been investigated either as a function of the semantic subclass of the dative verb or the information structure of the dative arguments. The present study adopts both approaches in examining the grammaticality judgments of adult learners who come from a case-marked free word-order L1 background. The findings of the two studies complement each other in giving a more complete account of the learners’ interlanguage. In the absence of predictors that govern dative constituents, participants showed a greater preference for prepositional datives, as well as sensitivity to the semantic conflation class of the dative verb. When structured with discourse information, dative arguments led participants to make native-like decisions of dative word order. The results are indicative of L1 influence, as well as the acquisition of L1 parameters of English dative alternation. The length of exposure to the target language did not prove to be significant.

Keywords

dative alternation, acquisition of narrow-range rules, harmonic alignment rules, second language learning, L1 influence, length of study

Introduction

Early studies on the L2 acquisition of the English dative alternation were based on the notion of markedness theory, examined from the various perspectives of core/periphery distinction (Gropen et al., 1989; Mazurkewich, 1984), learnability (White, 1987), and learning complexity (Hawkins, 1987). These studies mostly adopted transformational and semantic approaches and, until recently, the multiple factors governing the argument structure of dative statements have been overlooked. The present study, therefore, aims to examine dativizability from both the lexical-semantic perspective of the earlier studies and the information status approach of the more recent ones.

The theory of Universal Grammar (UG) defines the degree of markedness on the basis of whether a feature is part of the “core” or the “periphery”. The core features are those that are governed by UG and, hence, are unmarked, while the periphery are marked and require substantial evidence to acquire (Rutherford, 1982). In typological studies, on the other hand, unmarked
structures are those that are most widespread in the world’s languages and marked structures are those that are found more rarely (see Keenan’s Accessibility Hierarchy, 1972). These studies make predictions about what learners will acquire first and what they will transfer from their L1 based on these two hypotheses: a) learners will transfer unmarked forms when the corresponding L2 form is marked; and b) learners will resist transferring marked forms especially when the corresponding L2 is unmarked. Typological markedness theory also claims that input frequency can override the assumed difficulty in learning a marked feature (Ellis, 1997). UG-derived theories, however, see markedness as internal to the learner, and reject the view that typological universals can affect acquisition directly. Bley-Vroman’s (1989, 1990) Fundamental Difference Hypothesis (FDH), on the other hand, proposes that adult L2 learners lose their ability to access UG and that, when learning an L2 as adults, they only have available to them the properties of UG that are instantiated in their L1.

Within the Principles and Parameters framework, Hawkins (2001) defines human language as a set of principles, and variation between languages can be ‘accounted for by a number of parameters of variation allowed within the overall design defined by the principles’ (p. 13). Parametric differences occur when languages make different selections among optional syntactic features. Lardiere (2008) questions the conditioning factors behind these selections: are they phonological, morphosyntactic, semantic, or discourse-linked? Are certain forms optional or obligatory, and what constitutes an obligatory context? The next section will discuss research that relate to these questions within the context of dative alternation.

Dative Alternation in English

The Broad- and Narrow-Range Rules

Argument-structure alternation has been identified as a major potential source of learning difficulty for both L1 and L2 learners of English. Dative verbs are those which take theme and goal arguments, one being realized as a prepositional dative (PP dative) and the other as a double-object (NP dative) construction. Common dative verbs can typically alternate. The learnability problem arises out of the fact that not all dative verbs alternate, which leads to the problem of overgeneralization. In order to bring a solution to the acquisition problem of dative alternation in L1, Pinker (1989) and colleagues (Gropen et al., 1989) suggested that there are semantic constraints which limit the ways in which arguments are realized. They formulated dative alternation as an operation of the “linking rules” (i.e., mapping conceptual structures to syntax) on the underlying semantic structures, and argued that it is the property of the UG and every language in the world uses it. The semantic structure for the PP dative would be “X causes Y to go to Z” (1a) and, for the NP dative, it is interpreted as “X causes Z to have Y” (1b). If a verb does not express a directional
transfer of possession focused on the goal, it will not participate in the NP dative (1c):

(1)  
a. John gave the car to Mary.  
b. John gave Mary the car.  
c. *John washed Mary the car.

Similarly, with transitive verbs of creation, the NP alternates with the benefactive for NP because, here, the dative is understood as the recipient of the direct object, as in (2):

(2)  
a. Mary baked a cake for Peter.  
b. Mary baked Peter a cake.

While possession constraint is a necessary condition for NP datives, it is not sufficient. Gropen et al. (1989) and Pinker (1989) specified narrow-range semantic constraints which restrict alternation to semantically defined subclasses. These verb subclasses are essentially compatible with the possession constraint and can be found in the ditransitive construction:

a) Verbs that signify acts of giving: give, pass, hand, lend, etc.  
b) Verbs of sending: send, mail, ship, etc.  
c) Verbs of instantaneous causation of ballistic motion: throw, toss, kick, etc.  
d) Verbs of continuous causation of accompanied motion in a deictically specified direction: bring, take, etc.  
e) Verbs of future having: offer, promise, allow, etc.  
f) Verbs of type of communicated message: read, tell, teach, show, etc.  
g) Verbs of instrument of communication: radio, e-mail, fax, etc.  

(Gropen et al., 1989)

On the other hand, verbs which are incompatible with causation of change of possession cannot be transferred to the double-object form. These verb subclasses are as follows:

a) Verbs of fulfilling: present, supply, trust, etc.  
b) Verbs of continuous causation of accompanied motion in some manner: carry, pull, push, lift, etc.  
c) Verbs of manner of speaking: shout, scream, yell, etc.  
d) Verbs of communication of propositions and propositional attitudes: say, claim, assert, etc.  

(Gropen et al., 1989)

Furthermore, the morphophonological constraint (Grimshaw & Prince, 1986, cited in Pinker, 1989) restricts the application of the dative lexical rule to verbs with one metrical foot (i.e., one syllable, or more than one syllable with stress on the first). Thus, while monosyllabic verbs which
are often non-Latinate English can participate in the NP dative, verbs which are polysyllabic and of Latinate origin (i.e., with a combination of prefixes and stems) cannot do so (Mazurkewich & White, 1984), as in (3):

(3)  
   a. Mary fixed Peter a sandwich.  
   b. *Mary prepared Peter a sandwich.  
(examples from Cuervo, 2007:586)

Sometimes alternation is not allowed due to some semantic constraint, which would otherwise allow it, as in “I owe five bucks to Joe” can alternate with “I owe Joe five bucks”, but “I owe this example to Joe” cannot alternate with “*I owe Joe this example” (Goldsmith, 1980).

The properties of dative alternation have been explained in a great number of different ways. Krifka (2003) adopts the view that when the truth condition between the two constructions is virtually identical, it is the information structure that determines the preference for one or the other. For example, alternation allows for a shift of focused or heavy constituents to the right (2003: 3). Hence, although (4b) is unacceptable,

(4)  
   a. His behavior gave Beth an idea.  
   b. *His behavior gave an idea to Beth.

information structure can change this, as in (5):

(5)  
    Nixon’s behavior gave an idea for a book to every journalist living in New York City in the 70s.

Hawkins (1987) also observed that markedness falls short of explaining the acquisition of the English dative alternation. Therefore, research in L2 dative acquisition needs to go beyond semantic restrictions of verb classes to investigate various properties of object argument structures that might have an overriding influence on dative syntax.

**Differential Object Marking and Receiver/Entity Differentiation**

Markedness attained a different dimension with the Differential Object Marking (DOM) theory which emerged from the functional/typological literature. DOM was developed with the purpose of defining parametric constraints in languages with overt case-marking of direct objects depending on semantic and pragmatic features of the object. In order to disambiguate subject from object, direct objects which most resemble typical subjects on properties of animacy and definiteness get to be overtly case-marked. Aissen (2003) sets up a set of Harmonic Alignment hierarchies whereby direct
objects are the most overtly case-marked when they are human and pronoun:

- `Obj/Inanimate > Obj/Animate > Obj/Human` (>= more unmarked than)
- `Obj/Nonspecific > Obj/Specific > Obj/Definite > Obj/Personal Noun > Obj/Pronoun` (p. 8)

On the other hand, Næss (2004) argued that *affectedness* is a basic property which is universally ascribed to direct objects. Where there is more than one object argument in a clause, it is apparently always the one which is considered to be the most affected by the verbal action which gets to be encoded in direct object position (Dixon, 1994; Fillmore, 1977).

Even among the languages that have DOM, there are differences depending on the dimension of relevance. For example, Turkish and Hebrew both have DOM determined by the definiteness hierarchy (Aissen, 2003). However, while Hebrew distinguishes definite from indefinites, Turkish goes further to distinguish specific from non-specifics (see Enç, 1991). The complexity increases since objects at a particular rank may be obligatorily case-marked, optionally case-marked, or never case-marked.

With regard to dative alternation, corpus studies of English have observed that dativizability can be associated with various semantic properties of the argument types of recipient and theme (Collins, 1995; Gries, 2003; Thompson, 1990). In a corpus study of Australian English, Collins (1995) noted that dative constructions are polarized on scales of discourse accessibility, definiteness, pronominality, and length of words, with the recipient having the more prominent (agenthood and topicality) properties on these scales than the theme. Collins referred to the agreement of these properties with specific syntactic positions as ‘Receiver/Entity Differentiation’ (1995: 47). According to this formulation, the dative structures tend to be chosen so that given referents precede nongiven referents, pronouns precede nonpronouns, definites precede indefinites and shorter precede longer. According to Aissen, these are cases of ‘Harmonic Alignment’ of various scales with syntactic position (1999, 2003).

Arnold et al. (2000) similarly proposed that grammatical complexity (*heaviness*) and information status (*newness*) are two crucial factors in determining the ordering of constituents. They investigated the question both through a corpus analysis and an elicitation experiment. Heaviness was measured as the difference in length in terms of the number of words, and newness was measured in terms of the average accessibility of their referents (p. 30). The authors concluded that heaviness accounts for more of the variation than newness. Newness, however, appears to have a greater impact on dative alternation when heaviness does not make strong predictions either way. Despite the multiple plausible definitions of heaviness (named *end weight* by Quirk et al., 1972) and givenness, this phenomenon appears to be sufficiently robust using almost any definition (Arnold,
Bresnan et al. (2007) argue that pervasive correlations in research data tempt researchers to explain effects on dative constructions in terms of just one or two variables (e.g., Hawkins, 1987; Snyder, 2003). Using a large sample of corpus data, Bresnan et al.’s model, for the first time, made use of fourteen explanatory variables that could possibly influence dative alternation. These were discourse accessibility, relative length of recipient and theme, animacy of recipient and theme, definiteness of recipient and theme, pronominality of recipient and theme, semantic class of verbs, person of recipient, number of recipient and theme, concreteness of theme, structural parallelism, and length difference. All of the model predictors (except number of recipient) were found to be significant. The properties shown in bold in (6) are each aligned with the immediately postverbal position in both the double-object and the prepositional dative structures. Their findings validated the Harmonic Alignment effects noted by previous researchers.

(6) Harmonic alignment with syntactic position
   (a) discourse given _ nongiven
   (b) pronoun _ nonpronoun
   (c) animate _ inanimate
   (d) definite _ indefinite
   (e) recipient shorter than theme _ recipient longer than theme

\[
\begin{align*}
V & NP & NP \\
V & NP & PP
\end{align*}
\]

(Bresnan et al., 2007: 16)

Gries (2003) and Rosenbach (2005) noted that the frequency with which a dative verb appears in the double-object or the prepositional form in the written corpora also determines the acceptability rating of the same construction. In L1 corpus studies, NP dative is the more common form observed in both spoken and written data (Collins, 1995; Herriman, 1995; Bresnan et. al., 2007; Ferreira, 1996). However, L2 studies employing grammaticality judgments have mostly claimed that the NP dative, assumedly the peripheral and more marked aspect of grammar, receives lower ratings of grammaticality than the PP dative. Further research into L2 dative acquisition needs to clarify the source(s) of these diverse results. In sum, based on the principles of DOM, Receiver/Entity Differentiation and Harmonic Alignment, L1 research has illustrated that predicting different dative structures cannot be based on verb semantics alone.

**Dative Alternation Studies in L2**

Research on dative alternation in English as a second language is quite rare. While a majority of the
studies focused on the acquisition of the verbal categories (alternating vs. nonalternating), few explored the factors that are known to influence such patterns.

One major line of study examined interlanguage within the framework of UG principles (White, 1982; Schmidt, 1990). In agreement with the markedness theory, studies by Chang (2004) with her intermediate Chinese subjects, Führer (2009) with advanced German subjects, Mazurkewich (1984) and Le Compagnon (1984) with their French subjects, and Tanaka (1987) with Japanese subjects all similarly evidenced that PP datives are acquired prior to NP datives. More recently, Wolk et al. (2011) tested French learners of English of different proficiency levels. Their eye tracking experiments showed that advanced learners are sensitive to verb biases in both directions, while intermediate learners showed sensitivity only to PP datives. In an L2 corpus-based study, Callies and Szczesniak (2008) also concluded that German and Polish learners could acquire the difference between alternating and non-alternating verbs.

In response to the question of whether interlanguage grammars are UG-constrained independently of the L1 grammar, White (2003) argued that, for many UG principles, L1 can never be completely ruled out as a source of the L2 learners’ subconscious knowledge. White (1987, 1991) found L1 transfer in a study of English L1 children and adults learning French, who accepted NP in situations which did not allow them in the target language. Bley-Vroman and Yoshinaga (1992) studied Japanese learners of English and concluded that, although L2 learners were sensitive to the broad-range rule and the narrow-range rule for real verbs, they failed to distinguish between nonce verbs that can participate in the NP dative and those that cannot, rejecting them all. According to Bley-Vroman’s (1989, 1990) Fundamental Difference Hypothesis (FDH), adult learners lose their ability to access Universal Grammar and have available to them only the properties of UG that are instantiated in their L1. Juff (1996) also illustrates through experimental data that semantic structures across verb classes are transferred from the L1 to the L2.

In an early study, Mazurkewich (1984) found that learners at three proficiency levels acquired the PP before the NP construction and that they made overgeneralizations allowing the NP with Latinate verbs. Inagaki (1997) conducted a very similar study on dative acquisition comparing native speakers, Japanese and Chinese learners of English. FDH could explain the success of Chinese learners as L1 transfer because the same dativizability constraints existed in their native language but the same theory could not explain Japanese learners’ success with certain dative constructions when the same distinction did not exist in their L1. Inagaki tried to explain these outcomes with the theory of ‘selective access to UG’ (p. 659); however, he could not explain what determines the degree of accessibility of UG to adult L2 learners. He also proposed that the frequency with which a certain dative verb construction appears in the learners’ input determines its acquisition. Considering the fact that Inagaki had controlled for the “frequency effect” by using
made-up verbs, this argument does not hold very strongly. In a study comparing the acquisition of English *to*- and *for*- dative alternation by L1 English, L1 Korean and L1 Japanese children, Whong-Barr and Schwartz (2002) illustrated that the initial state of L2 acquisition is the grammar of L1 and that the development of L2 occurs through UG.

SLA studies that examine dative alternation with respect to the information status of dative constituents are relatively few. Marefet (2004) tested the given-new distinction on Persian learners of English. While intermediate learners did not respond to the difference between definite and indefinite NPs in making their dative preferences, advanced learners showed native-like performances. The effect of syntactic complexity was examined by Tanaka (1987) and Callies and Szczeniak (2008), and the results of both studies evidence a native-like tendency to place the short constituent before the long ones. As for pronominality, Le Compagnon (1984) and Hawkins (1987) noted that L2 learners of English at intermediate levels tend to prefer NP datives when the recipient is pronominal. The following section will examine the differences and similarities between Turkish and English dative argument properties and consider the potential of L1 influence on L2 learners of English.

**Case Markings and Alternation in Turkish**

Unlike English, which lacks overt differentiation of the direct and indirect objects, case-marking is the major instrument in the construction of dative structures in Turkish (Faltz, 1978; Gencan, 1992). The two canonical dative case markers “-*e*” and “-*i*” must be used to indicate indirect (Dative) and direct (Accusative) objects, respectively (as in 7a and 7b) (Çetinoğlu & Butt, 2008). Unlike the English *broad-range* rule, Turkish does not have a different morphosyntactic frame for the caused-motion event type and a second frame for the caused-possession event type. The order of the objects can be alternated without a constriction (*Kız hediyeyi babasına gönderdi* ‘The girl sent the gift to her father’ versus *Kız babasına hediyeyi gönderdi* ‘The girl to her father sent the gift’). Double accusatives are ungrammatical; hence, the English double-object construction which drops the preposition *to* introducing the goal cannot be realized in Turkish. The Turkish dative marker can indicate a destination or target of an action; hence, it is possible to say ‘Tom sent London the letter’, which would be ungrammatical in English.

Unlike the English *narrow-range* rules, Turkish does not distinguish among subclasses of dative verbs. However, similar to English, Turkish obligatorily requires the provision of the preposition “towards” (equivalent of *to*) with verbs like “pull, lift, push, lower” to indicate direction of accompanied movement. Some idiomatic verbal phrases in English do not have their exact Turkish counterparts, such as “charge someone money”, disallowing exact translation.

Turkish has a case alternation system on objects that correlates with the semantics of
specificity (Enç, 1991) in relation to theme. Hence, a nonspecific theme generally bears the nominative case while a specific theme is marked with the accusative. While a nonspecific theme must remain adjacent to the verb (7a) allowing only [NP+PP], a specific theme can alternate with the recipient, allowing both [NP+PP] and [NP+NP] (8a and 8b).

(7) a. Ayşe Ali-e (bir) kitap verdi.
Ayşe gave a book to Ali. [NP+PP]
Ayşe-Nom Ali-Dat book-Nom give Past.3sg
b. Ayşe (bir) kitap Ali-e verdi.*
Ayşe gave to Ali a book. [NP+NP]
Ayşe-Nom Ali-Dat book-Nom give Past.3sg

Ayşe gave the book to Ali. [NP+PP]
Ayşe-Nom Ali-Dat book.Acc give Past.3sg
b. Ayşe Ali-e kitab-i verdi.
Ayşe gave to Ali the book. [NP+NP]
Ayşe-Nom Ali-Dat book.Acc give Past.3sg

Recipient specificity, on the other hand, does not restrict the word order alternation (9a, 9b). However, in the case that both recipient and theme are nonspecific (i.e., specificity is no longer a determining factor), the affectedness rule obligatorily places the theme/direct object adjacent to the verb (10a), the alternative being ungrammatical (10b).

(9) a. Ayşe kitab-i birisi-ne verdi.
Ayşe gave the book to someone. [NP+PP]
Ayşe-Nom someone-Dat book-Acc give Past.3sg
b. Ayşe birisi-ne kitab-i verdi.*
Ayşe gave someone the book
Ayşe-Nom someone-Dat book-Acc give Past.3sg

(10) a. Ayşe birisi-ne (bir) kitap verdi.
Ayşe gave a book to someone. [NP+PP]
Ayşe-Nom book-Nom someone-Dat give Past.3sg
b. Ayşe (bir) kitap birisi-ne verdi.*
Ayşe gave to someone a book.
Ayşe-Nom book-Nom someone-Dat give Past.3sg

Pragmatic constraints are known to determine the word order in Turkish (Elyildirim, 1996), whereas pronominality is not known to do so. Morphophonological and etymological constraints that characterize English do not exist in Turkish. In sum, predictors of dativizability validated for English have to be internalized by Turkish learners in terms of a) broad- and narrow-range rules, b) morphophonological rules, and c) dative properties of theme and recipient (i.e., length, definiteness, and pronominality).

Research Questions
The study aims to examine L2 learners’ knowledge or intuitions of grammaticality regarding dative alternation under the constraints of a) the broad- and narrow-range rules based on verb semantics, and b) the semantic properties of the dative arguments. The investigation was carried out under two
separate studies as Study 1 and Study 2. The research questions were, therefore, distributed as follows:

**Study 1:**
- Do L2 learners’ grammaticality judgments of English dative statements make a distinction of broad- and narrow-range verb subclasses?

**Study 2:**
- Is there a relationship between learners’ grammaticality judgments of dative statements and the dativizability features of pronominality, definiteness, and relative length pertaining to the recipient and theme?
- Does learners’ judgment of the grammaticality of dative structures improve with longer exposure to the target language in a formal language learning medium?

For Study 1 and Study 2:
- Can the outcomes of Study 1 and Study 2 be interpreted with insights drawn from the participants’ L1?

**Study 1**

*Sample*

The sample of Study 1 consisted of 49 first-year, 29 second-year, 50 third-year and 28 fourth-year students (total of 156) who study in the Department of English Language and Literature at a Turkish university. These students were placed into their department by scoring at a certain English proficiency level band of the National University Entrance Examination. After a one-year study in (or exemption from) the university’s intensive English program, they enrolled in their departmental studies. This system of double screening narrows down the proficiency level range of Ps that are placed into the same year of study. All Ps were of Turkish L1 background.

The curriculum consists of literature-related courses. They did not take syntax as a department course. All the course materials and lectures are delivered in English. Students graduate after successful completion of 130 credit hours of courses. The age range of the Ps is 17-21 on average.

*Materials and Procedures*

In concert with the first research question, data were collected to assess Ps' knowledge structures relating to dativizability of verbs under specific semantic and morphosyntactic constraints. The measurement tool consisted of four dative verb categories which match various semantic conflation classes constrained by the narrow-range rules (Gropen et al., 1989):
Category I consisted of 18 dative verbs of native origin which indicate transfer of possession (give, lend, pass, hand, rent, send, kick, read, show, bring, throw, teach, build, tell) and future transfer (or prevention of transfer) of possession (offer, owe, promise, deny). Both double NP and dative constructions are acceptable; hence, Ps are expected to choose [BOTH]. Three sentences within this category were constructed purposefully to violate the “projected possessor” rule to test Ps’ ability to make the distinction. The verbs “throw, send, bring” were followed by direct objects which were either a locative or not the projected possessor of the direct object. Ps were expected to choose the [NP+PP] argument type.

Category II consists of 8 Latinate verbs which are constrained by the morphosyntactic rule (donate, dedicate, demonstrate, suggest, describe, explain, transport, and design). Although they are compatible with the transfer of possession event type, these verbs do not participate in dative argument alternation (unlike their native counterparts - give, show, offer, send, tell, etc.). This category obligatorily subcategorizes for [NP+PP].

Category III consists of 3 verbs that violate the possession rule. With “cost” and “charge”, there is the threat or intention of someone’s losing possession of a thing but that thing does not “go to” the possessor. Similarly, “guarantee” is a Latinate form of the narrow conflation class of future having but it is a negative exception to the rule. These verbs participate in the [NP+NP].

Category IV consists of 8 verbs which are not compatible with the transfer of possession event, and obligatorily participate in the [NP+PP]. Narrow conflation classes for this set of words are benefactive (hold, choose), manner of accompanied motion (pull, carry, push, lift), and manner of speaking (whisper, mention).

The total of 37 verbs was assessed in 39 statement sentences interspersed with 12 distractor items which did not contain dative structures. The Ps were given the task in their regular class hours with the accompaniment of the class teacher and the researcher herself. They were reminded that the task was not a test and they were asked not to put down their names on it. The Ps were instructed to read the sentence pairs and decide which sounded more grammatically acceptable:

A) Susan explained the problem to her friends. Only A Only B Both A and B
B) Susan explained her friends the problem.

In order to examine the impact of verb semantics on Ps’ judgments to the exclusion of the theme/recipient properties of the NPs (the focus of inquiry in Study 2), the dative statements employed full and definite NPs of similar length by syllabus count. No time limit was given. The items on the grammaticality judgment task were counterbalanced between versions A and B to avoid task weariness.

In the light of the discussions above, the researcher expects the participants to a) underrate the [NP+NP] construction when it is obligatory or optionally acceptable; and b) overrate the [NP+PP] construction when both dative types are acceptable.
Results and Discussion

Participants’ responses to verb Categories I-IV were calculated separately for the three dative options. The frequency scores were converted to percentages to allow comparison between verb categories which contained unequal numbers of items. The data were analysed using Multivariate Analysis with the dependent continuous variables as [NP+NP], [NP+PP] and [BOTH], and the independent categorical variables as Categories I-IV and Year Level.

Table 1 Mean percentage and standard deviation values of grammaticality judgments: Type by dative verb category

<table>
<thead>
<tr>
<th>Dative Verb Categories</th>
<th>only NP+NP (s.d.)</th>
<th>only NP+PP (s.d.)</th>
<th>BOTH (s.d.)</th>
<th>F-VALUES</th>
</tr>
</thead>
<tbody>
<tr>
<td>Category I (alternating)</td>
<td>11.68 (8.57)</td>
<td>56.37 (13.96)</td>
<td>30.87 (10.89)</td>
<td>F(2,45)=62.31 p&lt;.001</td>
</tr>
<tr>
<td>Category II (*oblig. NP+PP)</td>
<td>6.62 (7.24)</td>
<td>71.00 (16.20)</td>
<td>21.00 (11.84)</td>
<td>F(2,21)=60.17 p&lt;.001</td>
</tr>
<tr>
<td>Category III (oblig. NP+NP)</td>
<td>20.66 (10.21)</td>
<td>41.66 (2.51)</td>
<td>36.00 (8.54)</td>
<td>F(2,6)=5.78 p&lt;.05</td>
</tr>
<tr>
<td>Category IV (oblig. NP+PP)</td>
<td>6.62 (2.44)</td>
<td>72.12 (10.20)</td>
<td>20.12 (10.56)</td>
<td>F(2,21)=129.50 p&lt;.001</td>
</tr>
<tr>
<td>F-VALUES (among categories)</td>
<td>F(3,31)=3.41</td>
<td>F(3,31)=6.04</td>
<td>F(3,31)=3.20</td>
<td>p&lt;.05 p&lt;.01 p&lt;.05</td>
</tr>
</tbody>
</table>

Year Level did not prove to be a significant factor (p>.40) *

Examination of column values in Table 1 shows that the mean percentage values for Ps’ ratings for [NP+NP] across the four dative verb categories are statistically significantly different, F(3,31)=3.41, p<.05. However, the post-hoc Scheffe test that followed failed to distinguish significantly among the categories. Although the highest [NP+NP] rating (20.66 %) is reported for the obligatorily [NP+NP] category as due, the differences with the other three categories is insignificant.

When we examine Ps’ preferences for [NP+PP] across the four verb categories, the data indicates a statistically significant difference among them, F(3,31)=6.04, p<.01. According to the post-hoc Scheffe test, the mean for [NP+PP] preferences for Category II (71.00%) and Category IV (72.12%) – both obligatorily [NP+PP] – are significantly higher (p<.05) than the mean for Category III (41.66%) but not significantly different from Category I (58.00%). In other words, [NP+PP] is judged ungrammatical in most [NP+NP] requiring contexts but it is overgeneralized to verbs that allow alternation.

Ps’ acceptance of [BOTH] dative options as grammatical point to a statistically significant difference among the verb categories, F(3,31)=3.20, p<.05, but the post-hoc Scheffe test does not indicate a significant difference. The highest rating for the [BOTH] option is expressed for Category
III (36.00%), rather than Category I (30.87%) where it is to be expected.

The rows in Table 1 illustrate the within-group distribution of ratings. Ps’ preferences for [NP+PP] were significantly high for Categories I, II and IV (each at p<.001) but not as high for Category III (p=.05). Ps failed to distinguish Category I as verbs equally accepting both dative types and Category III verbs as obligatorily accepting only [NP+NP]. For Category I, the acceptance of [NP+NP] or [NP+PP] does not produce illicit grammar but it disregards the alternation possibility allowed to these verbs.

Overgeneralization of [NP+PP] to the alternating verbs category can be interpreted in terms of UG and typological theories of markedness and learnability (i.e., less marked and more common structures acquired earlier), as well as an L1 influence because Turkish case-marking is similar to the English prepositional dative. Admittedly, narrow-range constraints in English are language specific and, therefore, a bigger challenge to the learner.

As a final point, Ps’ grammaticality judgments do not show significant differences according to Year Level, F(3,608)=0.80, p>.40, nor does the interaction of Year Level and Dative Type have any impact, F(3,608)=0.61, p>.70.

Among the Category I verbs, those which were manipulated to violate the possession transfer rule (send, throw, bring) reveal that Ps are implicitly aware that, when there is no animate recipient of the object/theme being transferred, the correct structure is the [NP+PP] (91.00%, 87.8%, and 64.7%, respectively).

Results for Category I need further examination at the word level. Dative verbs have been shown to have a specific lexical bias, which is the statistical tendency of each verb to occur in one or the other construction (c.f. Bresnan & Ford, 2010). In a corpus-based study of the British component of the International Corpus of English, Gries and Stefanowitsch (2004) classified ditransitive verbs with regard to their distinctiveness (i.e., preference) for the double-object or the prepositional argument. They found the most strongly [NP+NP] biased verbs to be “offer, show, teach, owe, promise, give and tell”, among others. These same verbs were similarly judged as more grammatical when followed by the [NP+PP] construction or in [BOTH] forms.

The overgeneralization of [NP+PP] with the verbs “lend, read, pass, hand, and build” also coincides with Gries and Stefanowitsch’s (2004) L1 findings. Overall, though, [NP+NP] is undergeneralized in the alternating verbs category. Since Turkish does not distinguish between semantic subclasses of verbs as English does and double-object NPs are not possible in the form of two accusatives, my subjects’ dative preferences can be said to be the result of acquiring the English dative alternation patterns rather than an L1 influence.

A noteworthy finding relates to the exceptionally high ratings for [NP+PP] ($M=78.63\%$) for the verbs of continuous causation of accompanied motion (pull, lift, and push). Talmy (1991)
studied cross-linguistic differences in conflation patterns and suggested that languages can be divided into two typological groups depending on whether the Path of motion is lexicalized ‘in the verb’ (e.g., The man *approached* the house) or ‘outside the verb’ (e.g., The man came *down* the hill), with the particle *down*. Turkish, similarly, realizes the Path in these verbs with the particle *towards*, which seems to suggest that the strong subcategorization for [NP+PP] might indicate an L1 transfer. In the next study, the author investigates the impact of L2 dative argument parameters in their capacity to account for Ps’ preferences for [NP+PP], [NP+NP], and [BOTH] for the same set of 16 dative verbs.

**Study 2**

**Sample**

Study 2 is carried out with the same sample as Study 1 but six months apart, with the intervention of the summer vacation. Only the newly registering first-year students were different, while the other students moved up one class. The total number of Ps was 130. Once again, the data were collected in the regular class hours in the presence of the researcher and the classroom teacher.

**Materials and Procedures**

Investigation of the second research question pertains to the impact of pronominality, definiteness, relative length of the recipient and theme and their inter-relationship on learners’ grammaticality judgments. The data consisted of the same 16 monosyllabic non-Latinate verbs (give, lend, pass, send, offer, throw, show, hand, rent, owe, promise, deny, tell, read, kick, teach) that were compiled for Category I of Study 1. However, while the noun phrases in Study 1 were constructed as full nouns that were definite and of similar syllable length, those in Study 2 were manipulated for these features. For example, the verb “show”, appearing in both studies, took the following forms:

- You must show the judge your papers. (Study 1)
- The guide showed us the historical ruins of the island. (Study 2)

A response model was based on four explanatory variables of a) pronominality of recipient: pronoun versus nonpronoun; b) definiteness of recipient: definite versus indefinite; c) definiteness of theme: definite versus indefinite; and d) length: recipient shorter than theme versus recipient longer than theme. These four variables applied to 16 dative verbs yielded 16 experimental statements (see Appendix). Each dative complement was mapped onto the Harmonic Alignment rules that biased it for [NP+PP], [NP+NP], or [BOTH] acceptable categories. As the measure of length, short NPs ranged between 1-4 syllables and long NPs ranged between 5-8 syllables. Number
of syllables was seen to correlate highly with other measures of syntactic complexity (Grafmiller & Shih, 2011). Complex NPs were avoided so that complexity would not contribute to weight independently of length (see Wasow & Arnold, 2003). [NP+NP] and [NP+PP] phrases are assumed to have overlapping meanings as alternative expressions.

If it is the case that L2 learners of English are influenced in the same way by the same factors that are hypothesized for L1 speakers, then we should expect the respondents’ choices of dative categories to fit the predictions of Harmonic Alignment patterns, as follows:

- With respect to recipient pronominality, pronoun recipients will favour [NP+NP] and nonpronoun recipients will favour [NP+PP];
- With respect to recipient definiteness, definite recipients will favour [NP+NP], while indefinite recipients will favour [NP+PP];
- With respect to theme definiteness, definite themes will favour [NP+NP], while indefinite themes will favour [NP+PP];
- With respect to length of recipient relevant to theme, recipients shorter than theme will favour [NP+NP], while recipients longer than theme will favour [NP+PP].

Year Level was included as an independent variable to investigate a possible relationship between length of exposure to L2 and dative preferences. If learners’ dative performance improves with longer exposure to the target language, then the expectation would be to see more target-like patterns in the grammaticality judgments of students in their advanced years.

The test items were piloted to two students from each group and to some teachers (three native and three non-native), and minor changes were made to achieve lexical and syntactic accessibility. A four-predictor logistic model was fitted to the data to test the research hypothesis regarding the relationship between the four dativizability features and Ps’ grammaticality judgments. The multinomial logistic regression analysis was carried out using SPSS version 18.

Results and Discussion
As seen from Table 2, the responses of 130 Ps to the 16 experimental dative statements yielded 2080 data points. Overall, 381 responses favoured [NP+NP], 1133 responses favoured [NP+PP], and 566 responses marked [BOTH] structures as acceptable. Multinomial logistic regression analysis specified category [BOTH] as the baseline (i.e., referent) comparison group using (base=3). The statistical significance of individual regression coefficients is tested using Wald chi-square statistics (Table 2). As seen in Table 2, the probability of the model chi-square (357.56) is .000, indicating that there is a statistically significant relationship between the dependent variable Dative Type and combination of independent variables. Individual contributions of the four predictors to
the model were Recipient Definiteness [RecDef] (p<.001), Recipient Pronominality [RecPron] (p<.001), Theme Definiteness [ThemDef] (p<.01), and Length [Length] (p<.001). The classification accuracy rate (59.60%) surpassed the proportional by chance accuracy criteria (48.75%), supporting the utility of the model.

### Table 2 Description of the data for logistic regression

<table>
<thead>
<tr>
<th></th>
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<tbody>
<tr>
<td></td>
<td>Defin.</td>
<td>Indefin.</td>
<td>Pronoun</td>
<td>Nonpron.</td>
<td>Defin.</td>
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<tr>
<td>NP+NP</td>
<td>274</td>
<td>107</td>
<td>234</td>
<td>147</td>
<td>188</td>
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<tr>
<td>NP+PP</td>
<td>427</td>
<td>706</td>
<td>516</td>
<td>617</td>
<td>605</td>
</tr>
<tr>
<td>BOTH</td>
<td>339</td>
<td>227</td>
<td>290</td>
<td>276</td>
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<td>TOTAL</td>
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<td></td>
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</tbody>
</table>

### Table 3 Logistic regression analysis of participants’ grammaticality ratings as a function of five variables

<table>
<thead>
<tr>
<th>Predictor</th>
<th>β</th>
<th>SE of β</th>
<th>Wald's χ²</th>
<th>df</th>
<th>P</th>
<th>Exp(β)</th>
</tr>
</thead>
<tbody>
<tr>
<td>NP+NP</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Intercept</td>
<td>0.273</td>
<td>0.205</td>
<td>1,774</td>
<td>1</td>
<td>0.183</td>
<td>NA</td>
</tr>
<tr>
<td>Rec.Definit. (0=indefinite)</td>
<td>-0.512</td>
<td>0.144</td>
<td>12,555</td>
<td>1</td>
<td>0.000</td>
<td>0.599</td>
</tr>
<tr>
<td>Rec.Pronom. (0=nonpronoun)</td>
<td>-0.422</td>
<td>0.137</td>
<td>9,559</td>
<td>1</td>
<td>0.002</td>
<td>0.656</td>
</tr>
<tr>
<td>Theme Definit. (0=indefinite)</td>
<td>-0.176</td>
<td>0.135</td>
<td>1,712</td>
<td>1</td>
<td>0.191</td>
<td>0.838</td>
</tr>
<tr>
<td>Length (0=recep&lt;theme)</td>
<td>-0.749</td>
<td>0.139</td>
<td>29,193</td>
<td>1</td>
<td>0.000</td>
<td>0.473</td>
</tr>
<tr>
<td>Year=1 (Year 4)</td>
<td>0.431</td>
<td>0.202</td>
<td>4,525</td>
<td>1</td>
<td>0.033</td>
<td>1.538</td>
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</table>

<table>
<thead>
<tr>
<th>Predictor</th>
<th>β</th>
<th>SE of β</th>
<th>Wald's χ²</th>
<th>df</th>
<th>P</th>
<th>Exp(β)</th>
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<tr>
<td>NP+PP</td>
<td></td>
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<tr>
<td>Intercept</td>
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<td>1</td>
<td>0.000</td>
<td>NA</td>
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<tr>
<td>Rec.Definit. (0=indefinite)</td>
<td>0.997</td>
<td>0.111</td>
<td>80,781</td>
<td>1</td>
<td>0.000</td>
<td>2.180</td>
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<tr>
<td>Rec.Pronom. (0=nonpronoun)</td>
<td>0.282</td>
<td>0.110</td>
<td>6,619</td>
<td>1</td>
<td>0.010</td>
<td>1.069</td>
</tr>
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<td>Theme Definit. (0=indefinite)</td>
<td>-0.358</td>
<td>0.110</td>
<td>10,690</td>
<td>1</td>
<td>0.001</td>
<td>0.699</td>
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<tr>
<td>Length (0=recep&lt;theme)</td>
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<td>137,106</td>
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<td>0.000</td>
<td>0.265</td>
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<tr>
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Test

<table>
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<tr>
<th>χ²</th>
<th>df</th>
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<tr>
<td>Overall model evaluation</td>
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<tr>
<td>Likelihood ratio test</td>
<td>357,559</td>
<td>8</td>
</tr>
<tr>
<td>Goodness-of-fit test</td>
<td>438,206</td>
<td>22</td>
</tr>
</tbody>
</table>

Referent category: [BOTH] and [Year 4]

**Preferences for [NP+NP] relevant to [BOTH]:** As seen from Table 3, there is a statistically significant relationship between the dependent variable [NP+NP] and the independent variables [RecDef] (p<.001) and [RecPron] (p<.01). The multinomial logistic regression coefficient
comparing [NP+NP] relative to [BOTH] indicates that the multinomial logit for indefinite versus definite recipient is .51 unit lower for preferring [NP+NP] to [BOTH]; similarly, the multinomial logit for nonpronoun versus pronoun recipient is .42 unit lower for preferring [NP+NP] to [BOTH].

For indefinite versus definite recipient, the relative risk for preferring [NP+NP] relative to [BOTH] would be expected to decrease by a factor of 0.599. For nonpronoun versus pronoun recipient, the relative risk for preferring [NP+NP] is expected to decrease by a factor of 0.656.

[Length] has a significant relationship with [NP+NP] (p<.001). The multinomial logistic regression coefficient comparing [NP+NP] to [BOTH] indicates that the multinomial logit for recipient shorter than theme versus recipient longer than theme is .75 unit lower for preferring [NP+NP] to [BOTH] (p<.001). For recipient shorter than theme versus recipient longer than theme, the relative risk for preferring [NP+NP] to [BOTH] would be expected to decrease by a factor of 0.838. Shorter recipient favours [BOTH] relative to [NP+NP], counter to expectations.

Theme definiteness [ThemDef] (p>.10) does not have a distinguishing effect; Year of study [Year Level] (p>.05) only distinguishes between 1st and 4th year students: the multinomial logit for first year versus fourth year students is .43 unit higher for preferring [NP+NP] to [BOTH] (p<.03). For first year students, the relative risk for preferring [NP+NP] would be expected to increase by a factor of 1.538.

**Preferences for [NP+PP] relevant to [BOTH]:** Table 3 shows that there is a statistically significant relationship between the dependent variable [NP+PP] and the independent variables [RecDef] (p<.001) and [RecPron] (p<.05). The multinomial logistic regression coefficient comparing [NP+PP] relative to [BOTH] indicates that the multinomial logit for indefinite versus definite recipient is .997 unit higher for preferring [NP+PP] over [BOTH]. For indefinite recipient, the relative risk for preferring [NP+PP] relative to [BOTH] would be expected to increase by a factor of 2.180. Similarly, the multinomial logit for nonpronoun recipient versus pronoun recipient is .28 unit higher for preferring [NP+PP] to [BOTH]. For nonpronoun recipient, the relative risk for preferring [NP+PP] relative to [BOTH] would be expected to increase by a factor of 1.069.

The relationship between the dependent variable [NP+PP] and the independent variable [ThemDef] is also statistically significant (p<.01). The multinomial logistic regression coefficient indicates that the multinomial logit for indefinite theme versus definite theme is .36 unit lower for preferring [NP+PP] to [BOTH]. For indefinite themes, the relative risk for preferring [NP+PP] relative to [BOTH] would be expected to decrease by a factor of 0.699.

There is a statistically significant relationship between the dependent variable [NP+PP] and the independent variable [Length] (p<.001). The multinomial logistic regression coefficient comparing [NP+PP] relative to [BOTH] indicates that the multinomial logit for recipient shorter than theme versus recipient longer than theme is 1.329 unit lower for preferring [NP+PP] to
[BOTH]. For recipient shorter than theme, the relative risk for preferring [NP+PP] relative to [BOTH] would be expected to decrease by a factor of 0.265. Finally, there is no statistically significant relationship between the dependent variable [NP+PP] dative type and the independent variable [Year Level] (p>0.80).

In sum, definite and pronominal recipients favour [NP+NP] while indefinite and nonpronoun recipients favour [NP+PP] dative constructions. On the other hand, while [ThemDef] does not make a distinction in favour of [NP+NP] or [BOTH], themes which are definite or longer than the recipient distinctly favour [NP+PP]. While pronoun recipients were preferred in post-verbal positions as [NP+NP], shorter noun phrases for recipients were not (i.e., pronominality but not length was a determiner of NP variants). The results for [RecDef], [RecPron] and [Length] are in agreement with Bresnan et al.’s (2007) L1 findings regarding the same dative features. [ThemDef] is problematic, though, because Ps did not distinguish dative choices according to definiteness. Definite themes indiscriminately opt for both [NP+NP] and [NP+PP] because they are more readily transferable to Turkish as specific NPs case-marked with the accusative and indefinite themes are more restrictive of alternation. As mentioned earlier, Turkish does not make a syntactic distinction for pronominality but definiteness (i.e., specificity) is indicative of constituent ordering; and no study is known to assess the impact of recipient-theme length on Turkish word order. Therefore, the significant impact of these features on Ps’ grammaticality judgments suggests that new parameters have been set to the values of L2 independently of L1.

Lardiere (2008) draws attention to the importance of peripheral learning, defining it as ‘the inductive learning of language-idiosyncratic elements based on positive evidence from the environment’ (p. 109). However, dative alternation is a good example of the poverty of the stimulus problem (Baker, 1979; Pinker, 1989) because there is only a limited set of data in the L2 input and traditional grammars rarely bring it into focus. The learner has to, somehow, determine which verbs allow the alternating syntactic forms and which ones do not. Longer exposure to the target language in an academic context would be expected to result in more peripheral learning; however, results of this study do not meet this expectation because learners’ grammaticality judgments of the dative statements did not show a significant improvement during four years of departmental studies.

Conclusion

The aim of this paper was to follow the two traditions in investigating English dative alternation as it applied to Turkish learners of English as a second language: to study the learners’ awareness of the lexical-semantic distinctions between dative verb subclasses in their syntactic choices, and to study the impact of the dativizability features of dative constituents on learners’ grammaticality judgments. The findings of Study 1 mainly support the UG- and typology-based claims that L2
learners prefer PP datives over the NP datives. However, this appears to be the case only when NP features are controlled for their biases for one or the other dative construction by any other standard than the semantic constraint of the dative verb. When more information is provided that would bias the dative statements for an [NP+NP] or [NP+PP] construction, Ps were seen to illustrate a more native-like tendency in their preferences. In other words, Study 1 employed language samples that were indifferent to the predictor variables, which left learners free to make categorical choices based on verb semantics alone. Study 2, on the other hand, modified language samples to engage the Ps in probabilistic choices under the influence of predictor variables. Earlier studies did not adopt this two-fold approach, which leaves one or the other dimension of the dative phenomenon untouched.

The English dative system does not allow for a direct, consistent and unique mapping between lexical conceptual structure, argument structure and syntax (White, 2003); this poses a learning problem for learners of English as an L2. To the contrary, dative verbs in Turkish have only one way of realizing their arguments. Being a free word-order language, arguments in Turkish are allowed to alternate but without the broad- or narrow-range constraints that characterize English. This makes the L2 dative a more marked structure compared to the learners’ L1. According to the assertions of Accessibility Hierarchy (Keenan, 1972), Fundamental Difference Hypothesis (Bley-Vroman, 1989, 1990), and UG theories of markedness and learnability, adult Turkish learners of English are expected to learn the prepositional dative before its double-object alternative because the former is instantiated in their L1 and, also, because it is universally the more unmarked feature. In concert with these theories, Turkish learners of English overgeneralized the prepositional construction and undergeneralized the double-object construction, irrespective of the semantic context of the dative verb. However, these learners also seem to have developed some sensitivity to the conflation patterns of English, for cases where L1 transfer is irrelevant.

Investigation on a word-basis showed that learners could distinguish the post-verbal argument in its theme-function as opposed to its goal-function. Additionally, verbs that are more frequently found to subcategorize for prepositional or double-object arguments in corpus data yielded similar results in participants’ grammaticality judgments. This is in agreement with the SLA principle stated by Hawkins and Filipović (2012), which proposes that more frequent exposure of a property to the learner facilitates its learning; furthermore, the frequency factor is argued to have a greater impact than L1 transfer when the two are competing powers.

Alternatively, L1 influence is suspected in learners’ overgeneralizations of the prepositional argument with verbs that lexicalized the path of motion in both languages. Other studies of L2 dative acquisition by Turkish learners (Babanoğlu, 2007; Elyıldırım, 1996; Öz, 2002) also illustrate overgeneralization of L1 dative patterns in learner-corpus and language production studies.
Dative statements in Study 2 were controlled for the dativizability of the argument structures and examined in terms of their agreement with the Harmonic Alignment rules. While pronoun and definite recipients were clear predictors of NP datives, theme definiteness did not produce the same bias. Recipients longer than themes clearly biased Ps for PP datives. These findings are in agreement with those of earlier studies; that is, short constituents are placed before long ones (Callies & Szczesniak, 2008; Tanaka, 1987), definite constituents appear before indefinite ones (Marefat, 2004; Tanaka, 1987) and pronoun recipients precede nonpronoun ones.

The findings of the study can also be interpreted from the perspective of structural complexity and discourse status in determining dative argument word order. English is known to place long and complex constituents towards the end of a clause in order to facilitate the parsing and comprehension of syntactic structures (see Callies, 2009: 17). Arnold et al. (2000), Wasow (2002), and Wasow & Arnold (2003) argue that there is a high correlation between syntactic weight, sentence position and information status. According to this model, there is a greater likelihood of the heavy constituents containing new information rather than old, while the information already given in the discourse tends to be expressed with short deictic markers, such as anaphoric pronouns. Secondly, post-verbal preferences for pronominal arguments can indicate a more rapid recognition and processing of the dative constituent by the language user (Hawkins, 1994). In this context, harmonic alignment patterning can also be interpreted as having a facilitating effect on learners’ language learning processes (Hawkins, 1994). Of course, these results can find solid support if the study design were to be repeated with measurement tools that contained more items (or with data drawn from learner-corpus), and/or with participants from other case-marked and free word-order L1 backgrounds.

References


### Appendix

#### OPTINALLY ALTERNATING DATIVE VERBS

|-----------|-----------|------------|------|--------|

1. a. The librarian gave the student a new membership card.  
     b. The librarian gave a new membership card to the student.  
     c. Both

2. a. Bill lent his expensive video camera to a girl  
     b. Bill lent a girl his expensive new camera.  
     c. Both

3. a. The assistant passed the books on the table to Jane.  
     b. The assistant passed Jane the books on the table.  
     c. Both

4. a. Carol sent a colorful birthday card to a friend.  
     b. Carol sent a friend a colorful birthday card.  
     c. Both

5. a. The cook offered me a big piece of cake.  
     b. The cook offered a big piece of cake to me.  
     c. Both

6. a. The trainer threw the team's last ball to someone.  
     b. The trainer threw someone the team's last ball.  
     c. Both

7. a. The guide showed us the historical ruins of the island.  
     b. The guide showed the historical ruins of the island to us.  
     c. Both

8. a. The waitress handed a big plate of sausages to someone.  
     b. The waitress handed someone a big plate of sausages.  
     c. Both

9. a. My father rented some equipment to those in the school team.  
     b. My father rented those in the school team some equipment.  
     c. Both

10. a. Mr. Banks owed the money to someone close in the family.  
     b. Mr. Banks owed someone close in the family the money.  
     c. Both

11. a. My school promised the prize to the one with the highest grade.  
     b. My school promised the one with the highest grade the prize.  
     c. Both

12. a. The manager denied some people in the office a raise.  
     b. The manager denied a raise to some people in the office.  
     c. Both
13. a. The priest told an anecdote to the audience in the church.  
   b. The priest told the audience in the church an anecdote.  
   c. Both

14. a. The teacher read some of the blind children the book.  
   b. The teacher read the book to some of the blind children.  
   c. Both

15. a. The player kicked his fans in the audience the ball.  
   b. The player kicked the ball to his fans in the audience.  
   c. Both

   b. My parents taught a song to some children in the school club.  
   c. Both
Positioning and Stance in Intercultural Communication: Cultural Identity in a Japanese-Malaysian Student Facebook Exchange

Alison Stewart¹ and Brenda M. Wright²

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Abstract
This study draws on theories from social identity research to examine features of intercultural communication in a computer-mediated exchange project and to consider implications for the development of intercultural competence. Drawing on concepts of positioning (Harré & van Langenhove, 1999) and epistemic stance (Heritage, 2012; Kärkkäinen, 2003; Ochs, 1990) as theoretical underpinning, Facebook exchanges between Japanese and Malaysian university students are analysed for evidence of shifts in identity and their effects on the interlocutor. The transcripts are coded for quantitative analysis showing the type and frequency of position shifts and sources of authority to claims of knowledge about culture. Selected extracts are then analysed qualitatively to show the effect of a participant’s positioning and stance in the context of the exchange. The study concludes with two examples, one showing a failure to notice positioning and the other an example of a success in noticing positioning shifts leading to a transformation of propositional knowledge.

Keywords
positioning, epistemic stance, intercultural competence, computer-mediated communication

Introduction
The widespread use of Web 2.0 technologies promises a wealth of opportunity for English language learners to engage in more “naturalistic” language practice (Benson & Chik, 2011) and intercultural exchange. Both inside and outside the classroom, language learners have immediate access to people in other countries and, thus, more opportunities to learn about different cultures and to gain a more critical perspective on the culture in which they have grown up (Byram, 1997; Kramsch, 2009). Despite this, however, it has been observed that such exchanges do not necessarily lead to intercultural learning by themselves (Kern, 2000). Why does simply talking to someone from another culture not necessarily lead to understanding and awareness of that culture?

In this study, we address the question by investigating the talk between Japanese and Malaysian students participating in an online intercultural exchange using Facebook. Drawing on

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Positioning Theory (PT) (Harré & van Langenhove, 1999), we examine the ways students talk about culture and, in particular, the ways they position themselves and others as insiders or outsiders in relation to their own and each other’s cultures. An analysis of positioning, with regard to the students’ own culture and another culture, as well as to knowledge about the culture, can reveal how readily people shift between different cultural representations and how easily that can lead to misunderstandings. Our claim is that epistemic stance (Heritage, 2012; Kärkkäinen, 2003; Ochs, 1990), or a claim to authority on cultural information, constitutes a kind of positioning that may result in further positioning shifting. Whilst this may explain one cause of misunderstanding in such cultural exchanges, attention to epistemic stance also suggests possibilities for developing intercultural competence.

Intercultural Competence
As an international language, English serves as a tool of communication between people from different cultures. It is, thus, a language through which students in different parts of the world can learn about each other’s worlds, since, as cultural informants, they are in a position to communicate rich, insider knowledge about the societies and countries in which they live. Unlike talking to people from one’s own culture, however, it can be difficult for people living in one country to grasp the complexities of identity in communication (Antaki & Widdicombe, 1999) with people from another culture without a sufficient level of intercultural competence.

Intercultural competence is defined by Byram (1997) as a range of attitudes, knowledge and skills: openness to new information and beliefs, readiness to suspend existing beliefs about one’s own and another’s culture, knowledge about the other’s culture, skills of interpreting and relating new information in terms of what is already known, and skills of discovery or ability to interact with someone from another culture in a way that leads to new awareness. Intercultural competence also entails critical cultural awareness, or ‘an ability to evaluate critically, and on the basis of explicit criteria, perspectives, practices and products in one’s own and other cultures and countries’ (ibid., 53). The complexity of this definition may go some way to explaining the difficulties that people face in coming to grips with a new culture. However, the notion of culture itself may be more complicated than Byram’s definition implies.

The notion of culture, encapsulated in terms such as intercultural competence and critical cultural awareness, has come under fire from Baker (2011) for being ‘rooted in the national conception of culture and language’ (p. 63). Equating culture with national culture is widely viewed by applied linguists as essentialist or “top-down”; the national culture view misrepresents the hybrid and culturally complex lives that individuals in any country actually experience (Risager, 2011). As an alternative, Atkinson and Sohn (2013) make the case for culture from the bottom up, claiming
that this formulation acknowledges the reality that people live culturally but at the same time “avoids top-down cultural description and its dehumanizing effects” (p. 671).

Living culturally entails both an awareness of, and competence in, negotiating the myriad demarcations of difference that occur in any large society. Within societies, awareness of these demarcations is second nature, people generally identify themselves – and feel identified by others – as belonging to different groups in society. Awareness and competence regarding other countries’ cultures, however, is likely to be relatively limited. When first encountering those from other countries, people are likely to see them, first and foremost, as defined by their nationality. But, in any extended communication, a person is likely to qualify their own affiliation with a national identity and, instead, will identify themselves by other, more complex cultural affiliations. For a cultural outsider, it can be hard to spot when their interlocutor has shifted from one identity to another and what is meant by that shift. When people shift from one cultural identity to another, the shift is likely to be meaningful to others who are also familiar with the cultural context. The problem for intercultural communication is that the shift may not be meaningful to someone from another culture, if it is noticed at all.

In the following section, we introduce two theoretical concepts that focus on this dynamic, shifting nature of identity in interaction and explain how they can be applied to an analysis of cultural identity in computer-mediated communication.

**Positioning and Stance**

Central to an understanding of social and cultural identity is the idea that we define ourselves in terms of relationships to others as well as to social groups (Markus & Kitayama, 1991; Tajfel & Turner, 1979). Self-identification as a member of a social group is more than affiliation or alliance with that group. More fundamentally, it is the way we construe ourselves to others (Brewer & Gardner, 1996). In their review of research and theory of the social self, Brewer and Gardner (1996) propose that the personal, relational and collective levels of self-definition represent distinct forms of self-representation. Both interpersonal and collective levels of self-definition are extensions of the social self. However, interpersonal self-definition denotes personal bonds, whereas collective self-definition is affiliated with larger, impersonal social categories such as national identity. The identities people ascribe to themselves and others are crucial features of interpersonal communication. Identities in talk denote social categories that have associated characteristics or features; they are indexical and occasioned. In other words, they are called into being within, and by, specific contexts; they are purposeful, consequential and observable (Antaki & Widdicombe, 1999). People construe social identities for themselves and expect others to notice and understand the characteristics of these categories, while at the same time casting others in social identities that they
may wish to resist for various reasons.

In PT, this kind of flexibility is a feature of positioning which is crucial to understanding meanings in social interaction. According to Harré and van Langenhove (1999), a position is:

a complex cluster of generic personal attributes structured in various ways, which impinges on the possibilities of interpersonal, intergroup and even intrapersonal action through some assignment of such rights, duties and obligations to an individual as are sustained by the cluster. (p. 1)

In other words, in interactions with another (or others), we adopt positions, based on the qualities or skills that we bring to the conversation, that force our interlocutors to react in some way. As an analogy, in a tennis match, each ball that a player hits forces the opponent to shift position in order to hit the ball back.

An important implication of PT is that people position themselves in ways they assume to be understandable to others, for example, as powerful or powerless, confident or apologetic, definitive or tentative, and so on. We expect our interlocutor to respond in appropriate ways. As Harré and van Langenhove (1999) put it, ‘the social force of an action and the position of the actor and interactors mutually determine one another’ (p. 1). In intercultural communication, recognition and understanding are often lacking and, hence, our interlocutors do not respond in ways that are expected.

One of the advantages of PT for research is that the shift in position itself is signaled audibly or visibly in a way that allows for empirical investigation. As a precedent in applied linguistic research, for example, Pavlenko (2003) drew on PT to explore changes in teachers’ self-identity through a postgraduate course by examining changes in positioning as evidenced in shifts in verb tense and lexical choices in self-representation. In the present study, positioning is investigated through the students’ choice of pronouns; in particular, the use of I, we, and they when talking about their own culture. As Inokuchi and Nozaki (2005) claim in their study of American schoolchildren talking about Japan, pronoun use signals a degree of distance between the speaker and their subject. Thus, I denotes the closest association with the subject, while they positions the speaker outside and apart from the cultural group that is represented.

In addition to pronoun use, the effect of positioning can be further analysed by attending to epistemic stance, or claims to authority of the speaker (Heritage, 2012; Kärkkäinen, 2003; Ochs, 1990). In Ochs’ (1990) definition, epistemic stance is a ‘socially recognized way of knowing a proposition, such as direct (experiential) and indirect (e.g., second-hand) knowledge, degrees of certainty and specificity’ (p. 2). In conversation, speakers can signal their claims to knowledge in a variety of ways; for example, through lexical strategies such as hedging or hesitation, as well as
through recourse to validating support in the form of personal experience or of other reliable sources. In computer-mediated communication, interlocutors also have recourse to information published on the Internet, which can provide more authoritative support to the author’s claim to knowledge.

Both positioning and stance are contested terms and have been used interchangeably. Kiesling (2014) distinguishes between the two by defining positioning as a macro concept with a historical dimension – or ‘storyline’ (Davies & Harré, 1990) – that helps to determine meaning at any one moment, and stance as ‘local relationships between speakers and between speakers and talk’ (Kiesling, 2014: 2). In this paper, similarly, we view the relationship between positioning and stance as located on a macro-micro continuum; however, by narrowing our focus to epistemic stance, we look primarily at students’ claims to knowledge about one another’s culture and the effect this has on positioning, or the relationship between interlocutors in a dialogue generally.

**Research Aims**

In order to investigate positioning and stance by Japanese and Malaysian students in talking about aspects of culture, we focus on the following features in their Facebook exchanges with each other.

- How are pronouns used to signal cultural identity? In particular, in describing their own culture, how do learners shift between social group (they/we) self-identification and personal (I) identification?
- How do learners justify the claims that they make about culture to their exchange partners? The nature of the exchange means that learners are automatically positioned as “experts” of their own culture but what additional resources do they draw on to support the claims that they make about culture?
- What evidence is there in the exchange that the learners gained new knowledge and cultural awareness? To what extent does an awareness of the exchange partner’s positioning play a role in this development?

**Intercultural Facebook Exchange between Japanese and Malaysian Students**

In October 2013, the authors – English language teachers working in a private Japanese university in Tokyo and a national Malaysian university in Sabah, respectively – collaborated on a project to facilitate intercultural exchange amongst our students. As a limited trial project, our aim was also to provide a means for students to interact with each other in English (and/or Japanese) to enhance their critical cultural awareness.

The exchange was conducted using Facebook, which was chosen because almost all students already used it and because of the simplicity of setting up restricted groups for administering the project. The participants in the project included 20 Japanese second-year English major students, enrolled in a compulsory Academic Writing class, and 13 second-year Malaysian
students, most of whom were studying, but not majoring in, Japanese. For the Japanese students, the exchange formed part of an assignment to write an essay comparing some aspect of Japanese and Malaysian culture, although their grade was not contingent on participation in the project. The Malaysian students participated voluntarily after responding to an invitation, which was sent to students taking Japanese as an elective subject.

The language of communication was English, although some Japanese, Malaysian and Chinese words and phrases were used. The Japanese students were the highest stream in their year, with TOEIC (Test of English for International Communication) scores of between 550 and 990. The nine Malaysian students studying Japanese were high intermediate or advanced English learners, as reflected in their ranking (Band 3 and above) in the MUET (Malaysian University Entrance Test), while another four students were lower-intermediate (below Band 3).

The Japanese students were asked to form pairs with each other and to decide on a theme of interest to both. Culture was broadly defined in terms of social culture (Williams, 1981), in other words, ‘a whole way of life’ (p. 210), and students were asked to select themes that were likely to be relevant and close to the immediate experience of both Japanese and Malaysian students. The themes chosen by the Japanese pairs were listed in a Google document for the Malay students to select (Table 1).

<table>
<thead>
<tr>
<th>Table 1 Culture themes and student identification numbers</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Education</td>
</tr>
<tr>
<td>J1a</td>
</tr>
<tr>
<td>J1b</td>
</tr>
<tr>
<td>M1</td>
</tr>
<tr>
<td>2. Job Hunting</td>
</tr>
<tr>
<td>J2a</td>
</tr>
<tr>
<td>J2b</td>
</tr>
<tr>
<td>M1</td>
</tr>
<tr>
<td>3. Festivals</td>
</tr>
<tr>
<td>J3a</td>
</tr>
<tr>
<td>J3b</td>
</tr>
<tr>
<td>M3</td>
</tr>
<tr>
<td>4. Children</td>
</tr>
<tr>
<td>J4a</td>
</tr>
<tr>
<td>J4b</td>
</tr>
<tr>
<td>M4</td>
</tr>
<tr>
<td>5. University Life</td>
</tr>
<tr>
<td>J5</td>
</tr>
<tr>
<td>M5</td>
</tr>
<tr>
<td>6. Food</td>
</tr>
<tr>
<td>J6a</td>
</tr>
<tr>
<td>J6b</td>
</tr>
<tr>
<td>M6</td>
</tr>
<tr>
<td>7. University System</td>
</tr>
<tr>
<td>J7a</td>
</tr>
<tr>
<td>J7b</td>
</tr>
<tr>
<td>J7c</td>
</tr>
<tr>
<td>M7a</td>
</tr>
<tr>
<td>M7b</td>
</tr>
<tr>
<td>8. High School Life</td>
</tr>
<tr>
<td>J8a</td>
</tr>
<tr>
<td>J8b</td>
</tr>
<tr>
<td>M8</td>
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<td>9. Student Lifestyle</td>
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<td>J9a</td>
</tr>
<tr>
<td>J9b</td>
</tr>
<tr>
<td>M9</td>
</tr>
<tr>
<td>10. Marriage Customs</td>
</tr>
<tr>
<td>J10a</td>
</tr>
<tr>
<td>J10b</td>
</tr>
<tr>
<td>M10</td>
</tr>
</tbody>
</table>

Note: J=Japanese; M=Malaysian

As soon as a Malaysian student selected a theme, the researchers invited them to a closed Facebook group consisting of the Japanese pair, the Malaysian volunteer student, and the two researchers. The Japanese students were asked to initiate the exchange by introducing themselves in English to their
Malaysian partner and by asking initial questions about their chosen theme. During the class, they were asked to consider making questionnaires to gather data on their theme. All participants read a letter in which the aim of the project was explained and gave consent to the researchers’ use of all the text in the Facebook exchanges as data for a study on cultural learning. The exchange was set to last for three weeks, after which the students were free to continue contact with their partners if they wished.

During the three-week exchange period, the Japanese-Malaysian partners exchanged messages, with the number of messages ranging from two to 20. One group (Marriage Customs) did not get off the ground as the Japanese partners did not start their exchange until relatively late in the three-week period and the Malaysian partner who joined the Facebook group did not respond at all. By the third week, some of the Malaysian partners were unable to continue because of preparation for their mid-term exams.

Analysis of Positioning and Stance

At the end of the Facebook exchange, the text exchanges were copied to a Word document for analysis. The resulting transcript was read by both authors and the following coding scheme (Table 2) was developed based on categories that emerged from the social identity research literature and from the data.

<table>
<thead>
<tr>
<th>Table 2 Positioning and stance toward other/own culture</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Positioning of Other Culture (you, they)</strong></td>
</tr>
<tr>
<td>1. Supported by personal experience</td>
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<td><strong>Positioning of Own Culture (I, we, they)</strong></td>
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<td>A. Positioned as an individual (I)</td>
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<td>B. Positioned as member of a group (we)</td>
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<td>C. Positioned as an objective observer (they)</td>
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Although the learners’ representation of their own culture was of primary interest in this study, we felt it was also important to identify positions adopted in representing the other culture. We assumed, in accordance with PT, that such representations would exert a social or moral force on
the interlocutor (Harré & van Langenhove, 1999). We, therefore, separated the learners’ representations of the other and their own culture.

Positioning of the other culture was examined through usage of pronouns you and they. Positioning of own cultural identity was identified through three discrete self-positions that were defined by the use of personal pronouns: as an individual (I), as a member of the social or cultural group (we), and as an objective observer (they). In addition, within the they category for both other and own culture, we traced a range of possible positions denoting the learners’ epistemic stance: (1) where the representation was supported by personal experience; (2) where the representation was supported by collective experience or personal experience by significant others (Brewer & Gardner, 1996), (3) where the representation was supported by published authorities, in particular links to Internet sites, and (4) where the representation was unsupported.

The coding framework and subsequent analysis was developed and refined in a recursive process through reading and discussion of the Facebook transcripts. One of the characteristics of positioning in talk is its fluidity. People shift position from minute to minute for a variety of reasons (Antaki & Widdicombe, 1999; Harré & van Langenhove, 1999) and this made it difficult at times to detect and categorize an author’s positioning at any instance with certainty. In addition, students sometimes reiterated their position more than once or even multiple times in a single turn. However, as we were primarily interested in shifts of position, we did not count those additional reiterations. Similarly, we counted only statements that could be construed as claims about culture; questions or simple responses were not included as self or other positioning statements.

The analysis comprises both quantitative and qualitative approaches. Coding the transcripts enabled us to count the frequency of different kinds of positioning and epistemic stance adopted by the students, and to note their prevalence in the exchanges overall. The reiterative coding process also enabled us to identify places in the exchanges that were of particular relevance to our question concerning intercultural learning. Selective extracts from the Facebook transcripts are presented for more detailed commentary on a student’s self and other positioning and the effect of these on the partner in the following sections.

**Results**

The following sections include a quantitative overview and qualitative examination of selected extracts that feature key instances of the students’ positioning and epistemic stance during the Facebook exchange.

**Overview**

The following two figures (Figure 1 and Figure 2) give an overview of the relative prevalence of the
students’ positioning and stance.

Unsurprisingly, the number of knowledge claims about the other’s culture was relatively small (only 21 in all). These were quite evenly distributed, although the majority of claims about the other’s culture were backed up by Internet sources.

Proportionally, the number of instances when students represented their own culture was much higher at 119. In the transcripts overall, the numbers of instances of I positioning and we
positioning were roughly equivalent at 32% and 33%, respectively. The more distant positioning of *they* was slightly higher at 36% and this position was supported in a variety of ways, with Internet links accounting for slightly more, at 12%, than claims supported by personal (9%) or collective (7%) experience or unsupported claims (7%). A notable difference between positioning of own culture and positioning of the other culture was the decreased tendency to make unsupported claims about one’s own culture.

A key feature of both overviews is the relatively even spread of students’ positions and stances. This supports the general claim that position shifting is very frequent in students’ speech, both in speaking about their own culture and about the other’s, with no one stance represented significantly more than the others.

In the following section, we present examples for each category and discuss the nature and the effect of the epistemic stance students adopt in claims to knowledge about the other or their own culture in the context of the dialogue. We focus, in particular, on claims that are supported in some way; namely, by personal experience, the experience of a significant other, or an authoritative source published on the Internet or broadcast in the media.

**Knowledge Claims about the Other Culture**

**Supported by Personal Experience**

As an exchange between students in two countries, positioning in relation to culture was structured by the project itself. Most students had never been to the other’s country and, so, their claims to knowledge about the other culture were limited, based on what they had heard or read about it. One of the Japanese students, however, had visited Malaysia as a tourist, and used this experience in his opening gambit with his Malaysian partner:

> **J1b:** During this summer vacation, I went to Malaysia by myself! Of course, I also stayed at KL.

> **M1:** Wow! That’s amazing traveling alone! So where have you been to in KL? And how do you find that place?

> **J1b:** Yes!! I visited Twin Towers, Bukit Bintang and Masjid Jamek. I found them in my Japanese guide book about Southeast Asia. I loved Bakkutteh and Laksa! Cool! So I wanna ask you something. I realized that many people live in Malaysia can communicate with each other in English.

The Japanese student’s claim to familiarity with Malaysia and Malaysian culture serves two purposes here: on the one hand, it helps to establish a connection with his Malaysian partner, through the shared experience of Kuala Lumpur and, on the other, it lends authority to his observation about Malaysian people’s ability to communicate in English. His positioning as an
independent traveler elicits an expression of admiration from his partner but, interestingly, he appears to misunderstand her use of “find”, replying to her question, “How did you find that place?” with “I found them in my Japanese guide book about southeastern Asia”. With this misinterpretation of the word “find”, the student, perhaps unintentionally, emphasizes his position as an outsider, someone who would not know how to find these sights without the help of a Japanese guidebook, undermining the effect of his mention of personal experience.

Supported by Anecdote/Hearsay
Although none of the other Japanese students had any direct experience of the country, some students expressed a personal interest in Malaysia, often motivated by what they had heard about it, as in the following exchange:

J2a: I am personally very interested in Malaysia and have always wanted to go there (although I haven’t got a chance to yet) so I am glad I am given an opportunity like this.

M2: ... It’s really nice to know that you have great interest towards Malaysia! I am really curious what makes you like Malaysia so much? What is the one word you would describe of Malaysia?

J2a: As for the reason for my interest in your country, well, it’s probably because I have this friend of mine who went and studied in Malaysia and she’s been telling me a lot of good things of the nation. She says it’s an amazing country to both visit and live. I would love to go and explore there myself one day! I still don’t really know much about Malaysia but I hear it’s an ethnically and culturally diverse country so one word that comes up to my mind when I think of Malaysia would be “diversity”. And I think that’s a great thing.

Like J1b, the Japanese student in this exchange first expresses a keen personal interest in Malaysia, perhaps as a way of establishing rapport with her Malaysian partner. Her claim of knowledge about and interest in Malaysia is attributed to a friend (“she says it’s an amazing country to both visit and live”). A more tentative claim to knowledge is given in her one-word description of Malaysia: “diversity”. In terms of epistemic stance, the Japanese student first hedges her claim to knowledge (“I still don’t really know much about Malaysia but I hear it’s an ethnically and culturally diverse country”) and then comments on this description (“I think that’s a great thing”). In terms of positioning, the Japanese student appears to be doing a lot of positioning work to ensure that this word is not viewed as face threatening in any way. That she feels it is necessary to do so may be because she realizes that this view is stereotypical, and she wants to reassure her partner that it is a positive stereotype. She may also want to convey to her partner that, whilst “diversity” contrasts with a stereotyped view of Japan as a “homogenous” country, this does not adversely affect her view of the other.
Supported by Authorities (Internet/Print)

A more common strategy (38%) for supporting claims to knowledge is reference to Internet sources. An example of this can be seen in the following extract in which J3a, a Japanese student, asks M3 about festivals:

J3a: It will be great if you tell me some festival’s especially which you familiar with

M3: Recently dint hv any special event o... maybe u can tell me what event u prefer to know?

J3a: How about the Thaipusam? I’ve heard that it is one of the famous festival in Malasia. Or if you dont know it, maybe the Havest festival?

M3: thaipusam is a Indian festival... so I also not really know about that... huhu
Hv u ever heard about Dongzhi Festival or Winter Solstice Festival?

J3a: Oh! Thaipusam was Indian festival! I didn’t know that. Actually I had no idea of festival in Malaysia. I just googled and found the festival.

Although, in most other cases, Japanese students referred to Internet sources to bolster their claim to knowledge, in this extract the reference to an outside source is more complex. When her question about Thaipusam fails to elicit the response she hopes for, the student explains that she “just googled” in mitigation of her own lack of knowledge and to apologize for this awkward turn in the conversation.

What is less apparent, however, is whether or not J3a understands that her partner’s reluctance to engage in the subject may be because of his cultural identity. As a Chinese Malaysian, M3 may be deliberately resisting his partner’s positioning of him as a cultural informant with regard to a Hindu festival. Due to his response, she may have assumed the festival is only celebrated in India. Her response (“Oh! Thaipusam was Indian festival!”) implies that the latter is, in fact, the case, and her explanation (“I just googled and found the festival”) can be read as an apology for what she may believe to be a more substantial error of judgment about the Malaysian culture.

Thus, as a strategy for staking claims to knowledge, reference to Internet sources can be used for a variety of different purposes. Although students use the Internet mainly to strengthen their knowledge claims, they may also, as in the extract above, point to the Internet as a source of erroneous information. This awareness of the limitations of the Internet may be an important moment in the development of cultural awareness.
Knowledge Claims about Own Culture

On reading the transcripts, it was apparent that, when talking about their own culture, the students resorted to a wider variety of positions (I, we, and they) than when talking about the other’s culture. We first examine the nature and effect of these self-positions before going on to explore epistemic stance.

Self-Positioning as Individual (I)

Quite quickly in most exchanges, the students, both Malaysian and Japanese, sought to individualize their identity by positioning themselves as part of a smaller, or even different, cultural group from the more general national group, as in the following exchange:

J4a: Actually, I’m from Hokkaido, which is the northern part of Japan, so I recommend you to visit there if you go to Japan. As it’s located in the north, Hokkaido is terribly cold in winter, but you’ll enjoy it.

By identifying himself as coming from Hokkaido, J4a starts out by challenging the assumed premise of the exchange, that Japan and Malaysia have national cultures about which each participant might claim to be qualified informants. J4a’s self-positioning (“I’m from Hokkaido”) pre-empts his partner’s assumption that he will speak as a representative of the Japanese culture and offers instead a more nuanced depiction of what Japanese culture may consist of, a disclosure which may serve to facilitate a more personal connection with his interlocutor.

Self-Positioning as a Member of a Group (We)

In the coding of self-pronouns, we observed two types of collective or we positioning: one more abstract and the other more experiential. As mentioned above, the nature of the assignment for the Japanese students influenced the positions adopted by both sides in the exchange. Students frequently supported claims about their own culture using the pronoun we, such as “In Malaysia, we have Malay, Chinese, Indian which the 3 main races (M5)” or, “We often eat bread, spaghetti, hamburger and other kind Western food in our home (J6b)”. Sometimes, we refers to a more limited group, usually students, as in the following example, “Talking bout job hunting in Malaysia, young people over here heavily rely on the Internet (M2)” or “In Japan we university students generally study English to get good TOEIC scores (J5)”.

In some instances in this data, however, narrowing of group identity may not be immediately clear to the partner. For example, in response to her partner’s surprise at her claim to speak three languages, Malay, Mandarin and Cantonese, M5 explains:
M5: Many Malaysians speak more than 2 languages [...] Yup!! Especially Chinese. Since we are compulsory learning Malay and English from primary school till secondary school. However, Mandarin is not compulsory to study at school. And, we usually use mother tongue to talk with our friends and family. So we will mix up malay, english, mandarin, or mother tongue when we are talking and we called this as “BahasaRojak” Rojak [mixed] language

Although the Malaysian partner here is talking about the experience of Chinese Malaysians like herself, it is not clear whether the we in this extract refers to all Malaysians or just to Chinese Malaysians (for instance, Bahasarojak, is spoken by all Malaysians, regardless of ethnicity). For the Malaysian student, the we in this extract is explicitly narrowed to the group consisting of Chinese Malaysians, in opposition to a group consisting of Malay Malaysians. Such a shift in determining the identity of we, however, is quite subtle and not easily discernable to someone not familiar with the Malay culture, as we shall explore in more detail later.

Positioning Own Culture Objectively (They)

In the previous two categories, we assumed that claims to knowledge were based on personal or collective experiences. Where students adopted more objective or distancing positions with the use of the pronoun they, we specified the source of authority the students used to validate their representations.

Supported by personal experience

In certain instances, the source of their knowledge was clearly their personal experience, although this was not stated explicitly. Take, for example, the following extract:

J4a: In Japan, children are the centre of the family; for example, the father calls himself “パパ” or “お父さん” (both of them means “father”) after they got a baby, even though he doesn’t calls himself “パパ”. Furthermore, when they got grandchildren, they start to call themselves “おじいちゃん” (which means “grandfather”) even though they call themselves “パパ”. It shows us that children are the centre of the family; on the other words, family members always take care of their children.

The Japanese student adopts an objective position to describe Japanese family culture, although this is clearly based on his own experience growing up in a Japanese family. Describing the naming of fathers and grandfathers to reflect their position vis-à-vis the young children in a family first, the description then broadens to a generalization. Although the generalization would allow the student to personalize the experience by choosing the pronoun we, he continues in the role of cultural informant with the use of they.
Supported by the experiences of others

As well as personal experiences, the experiences of other people from the same social group are drawn on to extend the range of personal experiences, as in this Malaysian student’s comment about job hunting and age limitations:

M2: A few friends of mine who have earned their professional cert (ACCA, CAP etc.) started their career as early as 21. And I have a friend who graduated as a Chemical Engineer at the age of 22. He said he is the youngest among his colleagues, ranges from 24-29.

In terms of stance, referring to “friends” as the source of information is similar to referring to self in conferring a sense of validity to the contents of the information. Contrast the above comment, for example, with the information that was expressed in an exchange by her partner, J2a:

J2a: As for the age limitation thing in Japan, well, it’s not that firms/companies publicly say they don’t want people older than those who entered universities or whatever academic institutions directly from high school, for which we have a specific term in Japanese, ‘gen-eki’. However, it’s generally thought that if you are more than +2 in the gen-eki age, it would be a bit hard to hunt for a job, even if you are a new graduate, which I think is ridiculous!

In terms of positioning, this student constructs three distinct territories in her response. From a general we position, she shifts to a narrower definition of who we comprises and, then, to a rather surprising personal judgment on this situation at the end. As an insider of Japanese culture, J2a constructs two relevant categories here: firms/companies that hire graduates and that do not state publicly that age is a factor in their hiring decisions, and Japanese people generally, including graduate job seekers, who think otherwise. The positioning shifts from a very broad we referring to all Japanese (“the age limitation thing in Japan” and “we have a specific term in Japanese, ‘gen-eki’”), then narrows down to graduates whom she refers to as “you”. This “you” is ambivalent: she could be using it to index students like herself but it could also draw her interlocutor in closer to the scenario that she is depicting. With her final shift in position (“which I think is ridiculous!”), she constructs a new position in which she establishes a critical distance from the Japanese practice of imposing age limitations on new graduate employees and the resulting fear that affects students’ job seeking behavior.

Referring to authorities (print/Internet)

In this data, there were two examples in which students, both Malaysian, referred to Internet sources as a way of positioning themselves to validate their claim to knowledge. In the first, the student
responds to a question from her Japanese partner on how to enter university in Malaysia. After giving a detailed explanation of the admission system, M7a, a Chinese-Malay student, adds a further elaboration:

M7a: Malaysia is a multi-racial country. In order to stay peace, our country came out with a policy, giving quota intakes according to races. Due to sensitive issue which I cannot further discuss, I can only give you a link that will explain what actually happen in our country. http://www.bbc.co.uk/news/world-asia-23841888

Writing about a “sensitive issue”, the student positions herself behind an authoritative news source in the BBC. This particular source, however, paints a politically charged picture of Malaysia, a view that the student may in fact share but may not be willing to voice herself on a sensitive issue. It is unfortunate that the Japanese student in this exchange did not respond to the Malaysian student’s bold assertion.

Intercultural Learning
As we have attempted to show in the examples so far, intercultural communication is complicated by the shifting positions that people adopt naturally in any interaction and, particularly, in the situation described here of an exchange that was set up with the explicit purpose of talking about culture. As cultural informants, the students in this exchange shift from “collective” or “official” accounts of culture to their own individual experiences and perspectives. Top-down accounts alternate with bottom-up views (cf. Atkinson & Sohn, 2013); indeed, the juxtaposition of the two gives a particular resonance to both kinds of cultural representation. A problem here, however, is that, while this resonance may be apparent to insiders, it is unlikely to be to outsiders, unless they are open to the possibility of encountering different and, even, contradictory representations of culture and are sensitive to the implications of each.

In the following section, we consider examples of what we tentatively claim are instances of change in the students’ understanding; in other words, intercultural learning. The extracts are chosen to illustrate an initial failure to notice a shift in their partner’s position that exposes a discrepancy in cultural representations.

Missed Opportunities for Learning
In a few cases, discrepancies between the two partners’ representations of culture arose that could have presented opportunities for learning, but these were not noticed and, thus, the opportunity during the exchange was missed. In the following extract, for example, two Japanese students ask their Indian Malaysian partner about traditional food in Malaysia:
J6b: Wiki said that Malaysia’s culinary style has diversity. Malay food, Javanese-influenced cuisine, Malaysian Indian food, Malaysian Chinese food, Nyonya food, Sarawak Indigenous Cuisine. Which kind of food is eaten the most out of these in Sabah?

M6: in sabah, most often i ate malay food n indian food

J6a: According to website, in Malaysia, Malaysian people often eat beef, food that seasoned coconut milk and garlic and noodle. I feel there are many traditional food in Malaysia.

M6: Yes, you are right... To name a few is for example like rendang, nasilemak, kueytiaow noodles, nasilemak, thosai, idli, chapatti... 1 important note is that beef is only consumed by Malays and [non-vegetarian] Chinese but not the [Hindu] Indians, as cows are considered to be a holy symbol for them...

J6b: [...] Also, I know there are restaurants serving foreign and fast-food restaurant like McDonald’s in Sabah.

In this exchange, in terms of positioning, the Malaysian student shifts from the we view of Malaysian food culture to the I view and, then, when his identity as an Indian Malaysian is not recognized, shifts again to an objectivized they position in an attempt to signal his cultural identity more explicitly. Firstly, in answer to the question with its strongly top-down view of culture (“Which kind of food is eaten the most out of these in Malaysia?”) he shifts the position immediately to I (“in sabah, most often i ate malay food n indian food’); thus, flagging his identity as an ethnic minority Indian Malaysian. The two Japanese partners may not have recognized his name as Indian but they also miss this shift in position and its implied signaling of his ethnic identity. Instead, J6a immediately asks him a question about eating beef. M6 replies courteously to their questions and, for a second time, tries to shift position with an implied criticism of the question (“1 important note is that beef is only consumed by Malays and Chinese but not the Indians, as cows are considered to be a holy symbol for them...”). However, once again, the two girls miss the signal and J6b goes on to ask a question about McDonald’s. The Malaysian student does not respond again, though whether this is a breakdown in communication or, simply, that he was too busy as his university tests began is open to conjecture.

Breaking Through to New Awareness

Unlike in the example above, where the two Japanese students failed to notice a shift in position, in the following extract, the student gradually becomes aware of a discrepancy between his initial
assumption about his partner’s position and the position that she actually takes and tries repeatedly
to make clear to him:

J1: Nice to meet you! I'm [omitted]. I'm a university student studying linguistics and English education. I like
to learn many languages and have a little basic knowledge on Indonesian. (I believe that Indonesian language
has its origin in Malay.) I'd like to know many things about Malaysia!!

M1: Hi! Nice to meet you too. I'm [...] I'm usually talk in Cantonese and Mandarin. However, I'm study Malay
and English since I was small. Malay may have some vocabulary is origin from Indonesian language. But, it
got a lot of difference.

J5: ... How often English is used/spoken in Malaysia? [...] 

M5: I'm not usually speak in English but I prefer it during typing a message and doing my homework such as
assignment and report.

J5: [...] Typing a message means that you are communicating with others in English? Sorry for many
questions! :)

M5: Yup XD However, most of the time I prefer to mandarin or Cantonese =D
It's fine. You can ask more from me. I will try to answer you ^^

J5: You prefer to use Chinese to Malay language? So you can speak Malay and Manadarin or Cantonese??

M5: Yup ^^ Malay, Mandarin and Cantonese. Because I'm a Chinese Malaysian not a Malay Malaysian XD. In
Malaysia, we have Malay, Chinese, Indian which are the 3 main races.

J5: Thank you for your answers. I'm getting to study about language education and the use of English in
Malaysia [...] To sum up, Chinese Malaysian students usually can speak Malay, English, Contonese or
Mandarin, and Malay Malaysian can speak Malay and English (or Malay Malaysian also can speak Chinese?)
There are three races in Malaysia, Malay Malaysian, Chinese Malaysian and Indo Malaysian. They
communicate with each other in Malay or English?? Every races can speak Malay language??

M5: Ya, every races can speak in Malay. When we try to communicate with others, just depends on yourself
either you want to talk in Malay or in English. This is because we can understand both XD It's not many for
me. Just ask any question that you want to know. Ok?! ^^ I feel really nice when sharing all this to you~

In this extract, the Japanese student, who has been asking his partner about English usage in
Malaysia, initially appears to miss his partner’s signal that she is Chinese Malaysian. A key moment
of awareness occurs when M5 tells J5 that she prefers to use Mandarin and Cantonese, a statement
that he repeats for confirmation. This prompts M5 to shift her position again to the personal ("Because I'm a Chinese Malaysian not a Malay Malaysian"), followed by another shift back to the we position to represent the official view of Malaysian national identities ("In Malaysia, we have Malay, Chinese, Indian which are the 3 main races"). The breakthrough in J5’s understanding of what his partner is telling him seems to unleash a torrent of follow-up questions. His awareness that his partner is multilingual, and that Malay is not her L1, puts English use into a new light so that he is able to explore his original question beyond his usual reference of English use in Japan.

As a sign of developing intercultural awareness, the most interesting feature of J5’s exchange is his reiteration of information ("To sum up [...] (or Malay Malaysian also can speak Chinese?) There are three races in Malaysia [...] they communicate with each other in Malay or English?? Every races can speak Malay language??"). By summing up, confirming, and asking further questions, J5 appears to be going through a process of recontextualization of the top-down representation he initially had of the Malaysian culture in light of the personal information that M5 has shared with him. Summing up what the information means opens up new lines of questioning for J5, areas of inquiry that, in this case, concern language policy. We would contend that, rather than an ability to evaluate critically (Byram, 1997), a more constructive definition of critical cultural awareness might be an ability to question critically, to recontextualize top-down views of culture in light of bottom-up perspectives on it (Atkinson & Sohn, 2013), and to use the emerging understanding to develop new questions.

As a dialogic process, this probing for understanding is rewarding for both partners in the conversation. Whereas the conversation about Malaysian food, in which the two Japanese students failed to engage with their Indian-Malay partner, ended prematurely, in this case, the conversation was clearly enjoyable for both parties. As M5 comments to J5 at the end, “I feel really nice when sharing all this to you~”.

Discussion and Pedagogical Implications
As our analysis confirms, simply facilitating an exchange between students in different countries is no guarantee that cultural learning will automatically ensue. Some exchanges provided evidence that students enhanced their knowledge about the other culture and, in some cases, as we have suggested in the dialogue between J5 and M5, this may have led to a more transformational insight. In other cases, however, students were unable to benefit from the exchange. Although, some of the unsuccessful exchanges in this project may have been due to competing priorities, especially for the Malaysian students who were all volunteers for the project and who were about to begin their mid-term tests. In some other cases (e.g., J6a/J6b/M6), a reason for failure may have been because the
Japanese students did not notice a shift, for example, from a collective to a personal position and, therefore, missed an opportunity to challenge their stereotyped view of Malaysian culture.

An additional dimension of intercultural positioning that is explored in this study is the focus on epistemic stance (Heritage, 2012; Kärkkäinen, 2003; Ochs, 1990), which brings to the fore a focus on cultural knowledge and its effect on interaction in a developing intercultural relationship. As Kärkkäinen (2003) observes, stances are ‘not static phenomena residing within individual speakers, but responsive to interactional requirements and social contexts within which speakers and recipients interact’ (p. 24). Interlocutors need to be constantly alert to each other’s positioning, including their epistemic stance. Failure to notice changes in positioning and stance, as we saw in the case of the Japanese students missing their interlocutor's signals about his ethnic Indian Malaysian identity, can lead to misunderstanding and breakdown in communication.

In terms of pedagogy, students may thus benefit from raised awareness of possible shifting in positioning and stance before starting an intercultural exchange, for example, by discussing their membership of different social groups. One of the benefits of non-synchronous written communication, such as Facebook, is that students have time to identify possible shifts in positioning and to consider their partners’ motives for shifting before composing their answers. Thus, the evolving conversations can be studied to determine shifts in interlocutors’ positioning, particularly during critical incidents (Lebedko, 2013). Where the motive for shifting during critical incidents may be unclear or hard to understand, this could be discussed among students and their teachers.

A further implication of this study is that the use of Internet search engines as a source of knowledge about the other culture appears to be a mixed blessing. As we have shown, students who failed to notice their partners’ identity cues had prepared for the dialogue by conducting a search on Malaysian food. Unfortunately, by relying on this source of knowledge, they were insufficiently attentive to what their partner was saying about his identity, which could have opened up a more interesting avenue of inquiry about food culture in Malaysia. Second-hand knowledge (Ochs, 1990) about the other’s culture that is appropriated and used without due consideration for how it might be construed by the interlocutor becomes a liability that can damage or destroy the relationship.

Intercultural competence is not something that can be “taught”; it can only be developed through experience (Houghton, 2013). Moments of transformative insight (Mezirow, 2000) – learners’ “aha moments” – are fleeting and hard to catch. One of the benefits of computer-mediated communication is that such moments can be captured and shared. In this way, learners who have not yet gained those insights can see how their peers managed to get there and, perhaps, become more aware of the effect of their own positioning and possible alternatives.
Conclusion
Computer-mediated exchanges between learners, such as the one we have described in this study, provide opportunities for intercultural learning but, as we have demonstrated, such opportunities may be missed. We have sought to show how people shift their self-identity positions in representing their own or others’ cultures and how this is both an obstacle and an opportunity for learning. As the examples from the study show, breakdowns in communication may occur when a strategic shift in positioning goes unnoticed and, conversely, noticing such a shift can yield transformative insights. It cannot be claimed that an awareness of strategic positioning leads inevitably to intercultural competence. However, attention to such shifts requires making an effort to be open and sensitive to, as well as interested in, the other.

References


Sleep Quantity and University Students’ English as a Foreign Language Test Performance

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Abstract
This study is the first of its kind to look at the relationship between sleep quantity and English as a Foreign Language (EFL) test performance. The study focuses on the effects of sleep on declarative and procedural memory as manifested in EFL test performance by Japanese university students. Given generally low sleep quantities internationally, this research should be applicable to most EFL environments, although of particular concern to Asian EFL practitioners. This study applied Ullman’s (2005) procedural and declarative model to the question of how sleep affects EFL performance on different types of tasks. A total of seventy-five second-year university students in Japan, separated into an experimental and control group, participated in this study. Participants voluntarily reported their sleep quantities, which were compared to their EFL test performance on different EFL task types. The results were graphed and analyzed using regression analysis and Pearson’s product-moment correlation. The results showed that sleep quantity plays an important role in EFL task performance, and different sleep quantities and types affect specific types of EFL tasks, showing differences of up to 31% between sleep-deprived students and those who received sufficient sleep. This study also provides some evidence on the issue of sleep sufficiency for EFL task performance. Further research is required into the phenomenon of sleep and EFL task performance, as sleep quantity has important implications for EFL assessment design, teaching, and research.

Keywords
EFL, sleep quantity, declarative, procedural, memory

Introduction
In Asian cultures, sleeping has often been associated with failure, as expressed in the Japanese idiom 四当五落, yon tou go raku. Loosely translated, the idiom means that, if you sleep for four hours, then you will pass your examinations but, if you sleep for five hours, then you will fail. Research indicates that, internationally, students are not sleeping enough (Gradisar, Gardner & Dohnt, 2011).

International research has shown that too little sleep has an adverse effect on academic performance in general but there has been little or no research examining the relationship between

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sleep quantity and English as a Foreign Language (EFL) task/test performance (Cohen & Olshtain, 1993; Nasseri & Jabbari, s.a.).

The purpose of this study is to examine the effects of sleep quantity on EFL students’ task performance. In order to provide a contextual framework for the research, this study will briefly review previous research on sleep. A discussion of relevant research in defining what constitutes sleep deprivation and sufficient sleep; the importance of sleep cycles and how they contribute to REM and NREM sleep; and an overview of the effects of REM and NREM sleep quantities on declarative and procedural memory are also provided. The literature review ends by presenting a summary of the relationship between sleep and academic performance, especially language learning. The prior scholarship reviewed also contextualizes the results of this study.

**Literature Review**

**Introduction**

This section of the study briefly reviews the key findings of previous research in the field of sleep and education in order to identify key variables as they apply to the research for this study, and to provide some background to this study.

**Sleep in Japan**

This study was conducted in Japan and this section will provide some background to the study and, then, in the following section, the sleep situation in Asia will be discussed to show the relevance of this study to Asia in general.

Arakawa et al. (2001) found that junior high school (JHS) students in Okinawa were not sleeping enough and that they slept less and less each grade.

Arakawa et al. (2001) found that students slept an average of 472 minutes (less than eight hours) in the first grade of JHS, which is fifty minutes less than recommended for that age group. The students’ quantity of sleep decreased to an average of 429 minutes (about seven hours) in the third grade of JHS, which is eighty-seven minutes less than recommended for that age group.

Gaina et al. (2007) found that 25.2% of junior high school students in Toyama prefecture reported feeling almost always sleepy and that 47.6% reported feeling sleepy most of the time. Gaina et al. concluded that the primary cause of this sleepiness was insufficient sleep, although disturbed sleep was also a factor.

This pattern continues into senior high school, with Ohida et al. (2004) finding that 28.7% of boys and 32.6% of girls slept less than six hours a night. Looking at the pattern from Arakawa et al. (2001) to Ohida et al., a trend is apparent, with students sleeping less and less as they get older.
Research on the sleeping habits of university students in Japan could not be located, but international research suggests that these negative sleeping habits are likely to get worse, not better.

This is an international trend, with Marhefka (2011) stating that ‘poor sleep habits can continue into adulthood. [...] These sleep-deprived habits established in adolescence can often lead to problems during college years.’ (p. 20). Other international research by Stein et al. (2001) and Fredriksen et al. (2004) found similar patterns of sleep problems escalating over time, as did Gradisar et al. (2011), who found a negative correlation between age and total hours of sleep on school nights.

The research cited above on the sleep patterns of Japanese students at junior and senior high school level suggests that students sleep for less than the recommended length of time and, both in Japan and internationally, students tend to sleep less as they ascend the educational hierarchy.

Sleep in Asia

Insufficient sleep is not a uniquely Japanese problem and research conducted by Gradisar et al. showed that insufficient sleep amongst adolescents is an international problem but of particular concern in Asia.

Gradisar, et al. conducted a meta-analysis of forty-one studies on sleep amongst adolescents from eighteen different regions internationally; namely, the U.S.A., Canada, Switzerland, Germany, the Netherlands, Norway, Italy, Iceland, Belgium, France, Taiwan, China, Hong Kong, Japan, Korea, Kuwait, Australia, and Europe.

North American students slept the least but Asian students slept only a little more, with European students sleeping the most on average. Sleeplessness is a particularly serious problem in Asia because of late bed times, low sleep quantities, and high rates of daytime sleepiness.

Another finding from Gradisar et al. is that weekend total sleep time is much higher than weekday sleep time in both Asia and North America. This suggests that students are physically capable of sleeping for longer periods.

Sleep Sufficiency and Health

The amount of sleep required by the average person to be physically and mentally healthy has been well researched. Numerous studies have found that even a relatively small decrease in total sleep quantity can have adverse effects on health and performance (Åkerstedt & Nilsson, 2003; Tamakoshi & Ohno, 2004; Smaldone, Honig & Byrne, 2007).

Smaldone et al. state that the human need for sleep varies primarily by age; five-year-olds require about eleven hours a night, thirteen-year-olds need around nine hours a night, fourteen- to eighteen-year-olds require approximately eight to nine hours of sleep a night, and so forth.
The quantity of sleep required for physical and mental health gradually decreases with age, with Tamakoshi and Ohno finding that, for those aged forty to seventy-nine years, the lowest death rate was amongst those who had just over seven hours sleep a night (7.5 hours for men, 7.1 hours for women) and that those who slept even one hour less were more vulnerable to a wide range of health problems, such as stress, depression, strokes, cancer, and other health risks.

The pattern that emerges from these studies is that children need more sleep but the amount of sleep required decreases with age and that even a relatively small decrease in total hours of sleep can have a negative impact on physical and mental health.

This study deals with second-year university students, aged nineteen to thirty-three, with an average age of twenty-one, who should require approximately eight to nine hours of sleep a night for physical and mental health.

**Types of Sleep**

For this study, it is important to consider not only the total number of hours of sleep but, also, the type of sleep, for reasons that will be explained in this section.

Sleep can be broadly divided into two types; REM (rapid eye movement sleep), sometimes called dreaming sleep, and NREM sleep (non-REM sleep) (Barbato & Wehr, 1998; Markov & Goldman, 2006; Reite, Weissberg & Ruddy, 2008).

Stage One and Two NREM sleep are very light sleep and, if someone wakes up from these stages of sleep, they may not even remember being asleep. During Stage One NREM sleep, there is some eye movement but it is slow. Brain wave patterns change from relaxed (alpha waves) to theta waves.

In Stage Two NREM sleep the theta waves continue but occasionally change very rapidly in frequency (length) or amplitude (height). These are referred to as sleep spindles and k-complexes. Sleep spindles (changes in brain wave length) are normally associated with muscle-twitching. K-complexes (changes in brain wave height) are important because they aid learning, especially memory consolidation, the transformation of short-term memory into long-term memory (Barbato & Wehr, 1998; Markov & Goldman, 2006; Reite, Weissberg & Ruddy, 2008).

Stage Three and Four NREM sleep (sometimes just referred to as Stage Three NREM sleep) is much deeper sleep and it is much harder to wake someone from these stages of sleep. Brain patterns change to very short frequency and high amplitude delta waves. At this stage of sleep, the sleeper is unlikely to react to soft noises or light touches, and very loud noise or rough physical contact would be required to wake the sleeper (Barbato & Wehr, 1998; Markov & Goldman, 2006; Reite, Weissberg & Ruddy, 2008).
REM sleep typically happens after NREM sleep. A sleeper goes through Stages One, Two, Three, and Four of NREM sleep, then starts to wake up until they are between sleeping and waking, which is when REM sleep occurs. REM sleep is characterized by rapid eye movement and almost complete paralysis of the rest of the body. The brain waves of a person in REM sleep closely resemble those of a waking person, a combination of alpha and beta waves, but the level of brain activity is higher than when awake, with higher levels of oxygen consumption. When people are awakened during this stage of sleep, they typically report very vivid dreaming and, so, REM sleep is sometimes referred to as dream sleep. This stage of sleep is also important for learning and memory consolidation (Barbato & Wehr, 1998; Markov & Goldman, 2006; Reite, Weissberg & Ruddy, 2008).

A visual depiction of the typical sleep pattern of a young adult (aged approximately twenty-three) can be found in Figure 1. This visual depiction of sleep is called a hypnogram.

![Figure 1 Sleep hypnogram of a typical young adult (source: Reite et al., 2008: 28)](image)

Cycling through various sleep stages, from NREM One to Four, then NREM Four to One, followed by REM sleep and a brief awakening, is a complete sleep cycle. On average, a complete sleep cycle takes between 90 to 110 minutes, although, in actuality, the sleep cycles vary in length and composition. The hypnogram in Figure 1 shows the typical sleep pattern for a young adult (Barbato & Wehr, 1998; Markov & Goldman, 2006; Reite, Weissberg & Ruddy, 2008).

NREM sleep and REM sleep both have an impact on learning. However, these two types of sleep affect different types of learning tasks. As such, the quantities of NREM and REM sleep need to be considered separately.

Examining Figure 1, it can be seen that waking up after six hours would result in the sleeper missing the next period of REM sleep. As the number of sleep cycles increases, the periods of REM sleep grow longer. This means that, if the subject in the hypnogram slept for six hours, they would
experience a total of about fifty-five minutes of REM sleep, while sleeping for just half an hour longer would increase their total amount of REM sleep to about eighty minutes, an increase of twenty-five minutes (a 55% increase) of REM sleep (Barbato & Wehr, 1998; Reite et al., 2008).

This is an important point in the context of this study; namely, that a relatively small difference in total sleep quantity may make a major difference to REM sleep quantity.

The research for this study focuses on sleep quantity as an indirect measure of overall sleep quality because the actual quality of sleep experienced by any given individual at any given time can only be assessed with complete accuracy under strict laboratory conditions. Given that there has been extensive research into sleep patterns, such as those shown in Figure 1, this is a reasonable position in the context of the study and is consistent with international norms in sleep research (Carskadon & Dement, 1994; Lauderdale et al., 2008; Gomes, Tavares & de Azevedo, 2011; Ahrberg et al., 2012).

**Sleep Quantity and Learning**

The impact of REM and NREM sleep quantity on learning has been well researched. This section will briefly introduce some of the key research.

In the sections that follow, extensive reference will be made to Ullman’s (2005) ‘Declarative/Procedural Model’ (p. 141), as much of the previous research on sleep references declarative and procedural memory and Ullman’s model explicitly links this research to language acquisition.

**Ullman’s Declarative/Procedural Model**

Ullman’s model proposes that language acquisition consists of two types of learning. The first type of learning is memorization, such as memorizing the link between a word’s spelling, meaning, and pronunciation, and other arbitrary or idiosyncratic knowledge. The second type of learning is to generalize from these specifics, recognizing patterns and learning general rules for languages, such as recognizing and learning general patterns of words. Examples of this type of learning could be: distinguishing verbs from nouns, general rules for how word forms change (linguistic morphology), or grammar rules. Ullman labels these two types of memory and learning as declarative and procedural memory, respectively, with declarative memory responsible for the ‘mental lexicon’ (2005: 148) and procedural memory storing ‘rule-governed’ (2005: 149) learning. The relationship between these two memory systems, declarative and procedural, is complex.

Initially, the individual acquiring the language needs to build up sufficient declarative knowledge from which to generalize procedural rules. However, initially, there may be insufficient data from which to generalize reliably or the number of exceptions (idiosyncratic forms) may form
a disproportionately large proportion of the mental lexicon (declarative memory) from which the rules are being abstracted (procedural memory).

This may result in conflict between the two systems as the abstracted rules (procedural memory) produce example words or sentences that are not consistent with the examples in the individual’s memorized list of examples (declarative memory), setting up an antagonistic relationship between the two systems initially. This may result in learners relying more on declarative memory more during early language learning.

As more data is acquired (through the declarative memory system) and idiosyncratic forms constitute a smaller proportion of the examples, the relationship between the procedural memory system and the declarative memory system becomes complementary, with the generalized rules (procedural memory) complementing memorized examples (declarative memory).

Ullman’s model is not unique and the portions of Ullman’s model are analogous in many respects to theories of lexical and associative priming.

Priming examines whether relationships between words are weaker or stronger, depending on how closely they are related; for example, the words ‘key’ and ‘lock’ would be closely related and an example of a strong priming effect, whereas ‘psychology’ and ‘soul’ would be an example of a weak priming effect, with the two terms only weakly related by the Greek root word psyche.

Ullman’s model is not entirely compatible with the priming model, as, amongst other differences, priming theory does not concern itself with how the relationship between the items was acquired; for example, whether the relationship is memorized or abstractly derived.

These would be two different categories of memory in Ullman’s declarative/procedural model and, as such, caution is required when considering priming in the context of the declarative/procedural model (Ferrand & New, 2003; Rauchs et al., 2005; Ullman, 2005; Stickgold et al., 1999).

NREM Sleep and Learning

Declarative memory research by Tucker et al. (2006) on twenty-nine undergraduate students found that declarative memory task performance, such as remembering related lists of words, was significantly affected by increasing the quantity of NREM sleep by allowing a one-hour nap, with the napping students scoring about seventeen percentage points higher than the group who did not nap. Tucker et al.’s research shows that additional NREM sleep has a significant positive effect on declarative memory task performance.

Gais, Lucas and Born (2006) conducted a similar experiment in which twelve American high school students with no prior experience of German were given paired lists of English and German words to memorize.
One group of students went home and slept for approximately 5.6 hours, while the other went home and slept for 7.6 hours. The results were similar to Tucker et al.’s, with the group that slept for 7.6 hours performing approximately sixteen percentage points higher than the group that slept for 5.6 hours. Gais et al. also found that students who slept after studying performed approximately twelve percentage points better than those who studied and then waited twelve hours before sleeping.

The conclusion that one can draw from Gais et al. and Tucker et al. is that more NREM sleep (either from continuous sleep or naps) leads to better performance on declarative memory tasks.

It appears from the research cited that declarative memory is largely unaffected by REM sleep, as the napping group in Tucker et al., who received only additional NREM sleep, performed similarly to the sleeping group in Gais et al., who received a mixture of REM and NREM sleep.

Tucker et al. conducted an experiment on the impact of NREM sleep on procedural memory, specifically a mirror tracing task, which Fogel, Smith and Cote (2007) would classify as a cognitive procedural memory task, and showed that NREM sleep had little or no statistically significant effect on procedural memory tasks.

Smith (2001) came to a similar conclusion, stating that, while NREM sleep possibly improves motor procedural memory tasks, it does not improve performance on cognitive procedural memory tasks.

The conclusion that one can draw from Tucker et al., Fogel et al., and Smith is that cognitive procedural memory appears to be unaffected by NREM sleep, although there is some disagreement about motor procedural memory tasks, which, fortunately, do not concern us in this study.

In summary, declarative memory task performance is affected by NREM sleep, an extra hour of NREM sleep or an hour of napping (NREM sleep, see Figure 1) amounts to a 16-17% improvement in performance on vocabulary tests and cognitive procedural memory task performance appears to be unaffected by NREM sleep quantity.

**REM Sleep and Learning**

Fogel et al. state that ‘[...] improvement on tasks such as the Wff’n Proof Task [68, 72, 64], the Tower of Hanoi [12, 70], and the Mirror Tracing Task [56, 70] require REM sleep [...]’ (2007: 48). The tasks listed in Fogel et al. are all cognitive procedural memory tasks; however, none of them related specifically to language.

Stickgold et al. (1999) conducted an experiment in which forty-four college undergraduate subjects were awakened during the night and presented with a series of word pairs. The word pairs were rated in terms of how directly the two words were associated; for example, ‘[...] no semantic
relationship (e.g., car-apple), a weak relationship (crime-gun), or a strong relationship (hot-cold)’ (1999: 183). Stickgold et al. (1999) found that subjects woken up during REM sleep found weak relationships more quickly than those woken up during NREM sleep. These weak, abstracted, relationships would be classified as procedural memory tasks in terms of Ullman’s model.

In another experiment, conducted by Walker et al. (2002), sixteen college undergraduate English first language (L1) students were woken at various stages during the evening and presented with anagrams to solve. Subjects woken during REM sleep solved 32% more anagrams than those woken during NREM sleep. Stickgold et al. (2001) describe REM sleep as producing more ‘fluid thinking’ (p. 1055) than NREM sleep. The improvement in abstract memory tasks, which they described as ‘fluid thinking’ would be classified as procedural memory tasks in terms of Ullman’s model.

In an experiment involving four English L1 students on a six week immersive French learning programme, De Koninck et al. (1990) found a significant positive correlation between language learning and increased REM sleep, as measured by dream diaries (dreaming occurs during REM sleep) and some time in a sleep laboratory.

While there is a scarcity of research on REM sleep and its impact on language learning, there is enough evidence to suggest that increased REM sleep has a positive impact on certain aspects of language learning, such as more flexible thinking and more abstract concepts, including learning rules, sequences and patterns, which Ullman groups into procedural memory.

The key point is that procedural memory task performance responds to REM sleep quantity. Individuals who obtain more REM sleep are more capable of making abstract connections between words and more REM sleep has been linked to improved language learning.

Sleep Quantity and Learning

Not all research explored the differences in learning between NREM and REM sleep. This section will briefly present research findings on total sleep quantity and learning.

In a survey of 238 middle and high school students, Pagel, Forister and Kwiatkowski (2007) found that more sleep correlated positively with grade point average (hereafter, GPA).

Lowry, Dean and Manders (2010) found a significant positive correlation between GPA and increased average hours of sleep in 103 undergraduate students. The trend in Lowry et al.’s research indicated that students who slept the most (an average of ten hours a night) had GPAs that were approximately 0.5 points higher than the students who slept the least (an average of four hours a night). The GPA range in Lowry et al. was two to four, indicating that students who slept more outperformed students who slept less by up to 25%.
Summary
The conclusion that can be drawn from this review is that total sleep quantity has an effect on learning and that this effect can vary depending on the type of sleep obtained. Declarative memory (memorization task memory) is moderated by NREM sleep. Procedural memory (abstract task memory) is moderated by REM sleep.

Method
Participants and Sample Size
The participants consisted of a total of seventy-five second-year university students studying medical English at Fukui University’s Faculty of Medical Sciences. The sample was split into two groups. The first group, of thirty-seven students (control group), took the Medical English 2 class in the Spring semester of 2013 (April to July 2013). The second class, of thirty-eight students (experimental group), took the Medical English 2 class in the Spring semester of 2014 (April to July 2014).

Study Design and Interventions
The control group’s results (Spring 2013) showed statistically significant positive correlations between increased sleep quantities and increased results in some categories; however, the sleep quantities were very low, so an additional experimental group (Spring 2014) was added to the research model. The advantage of splitting the research across two years was that it removed any possibility of control group contamination.

The experimental group was given guidance on the importance of sleep in the hopes that it would encourage more sleep in that group and allow for a more meaningful examination of the impact of REM sleep on language learning.

The only interventions consisted of a ten-minute presentation to the experimental group, and asking both the control and experimental groups to report their sleep quantities. The presentation at the end of the second class detailed the potential health and academic benefits of sleeping the recommended amount for their age group, seven to nine hours.

Experimental Controls
Course Material and Instruction
Apart from the presentation on the topic of sleep, the two classes received identical course material, assessments and instruction from the same instructor. Class assessments were not returned to students, so there was no possibility that the experimental (2014) group could copy or receive guidance on the contents of tests from the control (2013) group. As a precaution, assessment items
were reordered but the assessments were functionally identical for both groups.

**Initial Ability**

The first fifteen-item vocabulary quiz at the beginning of the second lecture (before the guidance was given to the experimental group) was used to determine if there was any difference between the classes in terms of academic ability that might bias future results. The control group’s class average was 13.7 out of 15, 91.3%, while the experimental group’s class average was 13.2 of out 15, 88%, a difference of 3.3% between the results of the two groups. The two groups were judged to be sufficiently similar in starting ability to allow for a meaningful comparison.

**Motivation Levels**

The motivation levels of the two classes were very similar, with responses to the course satisfaction survey varying by only 0.1 on a five-point scale (2% difference).

**Data Collection and Statistical Methods**

**Sleep Quantity Data**

The students’ sleep quantities were surveyed randomly during the course immediately after they wrote tests. After completing the assessment, the students were asked (in English and, then, repeated in Japanese to avoid confusion) to voluntarily write on the top of the page (or on the cover sheet in the case of the examination) how many hours they had slept the previous night and the question was written on the board (in English), in case students misheard. There was no printed space for the responses or set response categories, as it was felt that the presence of a formal space for the response might pressure students into responding due to it being perceived to be a formal part of the test. In some cases (nine out of 150), students reported a range, such as ‘7-8 hours’. In these cases, the average between the two numbers was used as their sleep quantity; so, in the example above, the number of hours of sleep was recorded as 7.5 hours.

Both the control group (Spring 2013) and the experimental group (Spring 2014) had their class in the second period (10:30 to 12:00) on a Wednesday morning. The students were taught at this time and the assessments were delivered at this time.

Sleep quantities in this study were self-reported. Studies have found self-reported sleep quantity to be a fairly reliable predictor of actual sleep quantity, although self-reported sleep quantities may be slightly lower than reported, as subjects may report the time they went to bed as opposed to the time they actually fell asleep (Lockley, Skene & Arendt, 1999; Lauderdale et al., 2008). The methodology employed in this study is consistent with international sleep research practices (Lauderdale et al., 2008).
Assessment Data

Two different types of tests were used to assess the students’ performance. The first type of test was a fifteen-question vocabulary quiz. In terms of Ullman’s procedural/declarative model, this test represented a test of declarative memory, which was associated with NREM sleep in the literature. The second test was a more complete examination, which consisted of five sections; namely, listening, expressions, taught vocabulary (similar to the vocabulary quiz), untaught vocabulary, and short essay questions.

The taught vocabulary and expressions questions would be considered declarative memory tasks in terms of Ullman’s model and this type of task was associated with NREM sleep in the literature. The listening, untaught vocabulary and short essay questions would be considered procedural memory tasks in Ullman’s model, as they required abstract integration and innovation, or priming under other models (Rauchs et al., 2005; Stickgold et al., 1999) and, under all models, this type of task was associated with REM sleep in the literature.

Statistical Methods

Results were graphed and, then, analyzed using regression analysis, with significant correlations confirmed with Pearson’s product-moment correlation.

Results and Discussion

The results for the two different types of tests will be presented separately, as the questions in the tests and the students’ sleep quantities differed in significant ways.

Vocabulary Quiz Results

The fifteen-item vocabulary quiz was a declarative memory task (Ullman, 2005). The answers were known, if the students studied the vocabulary lists they were given.

Sample Size and Response Rate

The total sample size for the quiz was seventy-five students, with a response rate of sixty-one, as a result of some students being absent from class and some students electing not to report their total hours of sleep. This represents a response rate of 81.3%. The response rate for the experimental group was thirty-four out of thirty-eight students, 89.47%. The response rate for the control group was twenty-seven out of thirty-seven students, 72.97%.
Vocabulary Quiz Results and Discussion

As can be seen from Figure 2, there are clear differences between the experimental and control group. The experimental group’s average was 13.91, while the control group’s average was 9.14, indicating that the experimental group scored 4.76 points higher out of 15, or 31.73% higher than the control group.

The experimental group’s results appear to be random, with no significant correlation between sleep and quiz results ($R^2=0.0011$). The control group shows a statistically significant moderate positive correlation between sleep and quiz results ($R^2=0.1953$; confirmed by Pearson’s product moment correlation, $r=0.40$, $n=27$, $p=0.04$) (Myers, Well & Lorch, 2010).

To make sense of these differences one needs to consider the average sleep quantities in each group. On average, the experimental group slept for 6.47 hours, while the control group slept for only 4.83 hours.

The results of this portion of the study are similar to those in Lowry et al. (2010), which showed a 25% difference in GPA. Lowry et al. included subjects who experienced lower sleep quantities and wider variation in total sleep quantities, with subjects in Lowry et al. ranging from four to ten hours of sleep (six hours of variance).

Tucker et al. (2006) predicted that an additional hour of NREM sleep (a one-hour nap) would improve results on declarative memory tasks like learning lists of words by approximately 17%. The difference between this study and Tucker et al. is in the degree of variance, with the subjects in Tucker et al.’s study varying only by the one-hour nap, whereas, in this study, the degree of variance in sleep was much wider (six hours of variance).

In Gais et al. (2006), they found that a group that slept continuously for 7.6 hours (±0.6 hours) continuously performed about 16% better than a group that slept continuously for 5.6 hours (±0.6 hours). In considering the findings of Gais et al., two points should be noted. Firstly, the variance in sleeping times is quite small, approximately ±36 minutes. Secondly, the additional two hours of sleep between the groups crosses the border between early sleep (mostly NREM sleep with
relatively little REM sleep) and late sleep (more REM sleep and decreasing quantities of NREM sleep).

For an average person, the two additional hours of sleep would have consisted of approximately twenty-five minutes of REM sleep (a 55% increase in total REM sleep, from a total of fifty-five minutes to eighty minutes) and approximately ninety-five minutes of NREM sleep (an increase of 31.4% in total NREM sleep, from a total of approximately 286 minutes to 381 minutes) (Barbato & Wehr, 1998; Reite et al., 2008).

The results within the groups in the current study are revealing. The experimental group, which received an average of 6.47 hours of sleep, showed no statistically significant variations, which strongly suggests there is a ‘border’ phenomenon around the six-hour mark where additional sleep provides little or no additional benefit on declarative memory tasks. The trend line in Figure 2 for both the control and experimental groups terminates around the six-hour mark, adding support to the ‘border’ hypothesis.

This finding may help to explain the anomaly evident in the results obtained by Tucker et al. and Gais et al., where the two experiments revealed similar results, despite the fact that the subjects in Gais et al. received two hours of sleep while the subjects in Tucker et al. received only a one-hour nap. One hour of the sleep in Gais et al. fell on the other side of the six hours of sleep ‘border’ and, so, produced no benefit.

The results suggest that, for this age group, six hours of sleep is sufficient for declarative/NREM sleep tasks and that extra sleep produces no statistically significant benefit for language learning.

The control group, with an average of 4.83 hours of sleep, showed a statistically significant positive correlation ($r=0.40, n=27, p=0.04$) between additional sleep quantity and higher results on declarative memory tasks, showing that lower sleep quantities negatively impact on language learning tasks, such as memorizing paired vocabulary lists and, in this case, lists of English words and their definitions and Japanese equivalents.

**Examination**

The examination was a mixture of declarative and procedural questions (Ullman, 2005). The declarative questions consisted of sections similar to the weekly vocabulary quizzes and sections on idioms and expressions. The answers to all of the questions in these sections were contained in the coursework. The procedural questions consisted of a section on untaught vocabulary, the meaning of which the students had to deduce based on words contained in the known vocabulary, an essay section where the students had to write original answers, and a listening section where students had
to deduce the missing word from auditory and contextual clues. All of these questions required the students to think and innovate, and none of the answers were contained in the coursework.

**Sample Size and Response Rate**

The total sample size for the examination was seventy-five students, with a response rate of seventy-five. This represents a response rate of 100%. The response rate for experimental and control group was 100%.

**Examination Results and Discussion**

As there are more categories of data in this section, the results have been broken down into shorter sections for ease of reading. All of the question results have been changed to a one to ten scale, for easier comparison between categories and for easier presentation.

Overall, the two groups performed very similarly, with the control group obtaining a class average of 77.1% and the experimental group obtaining a class average of 82.5%, a difference of 5.4 percentage points between the two groups.

**Hours of sleep**

The control group reported more sleep before the examination, with an average of 5.69 hours of sleep, as compared to 4.83 hours of sleep before the quiz.

The average for the control group is misleading in this case. Of the thirty-seven students, twenty-three students slept 6 to 8 hours. The average is distorted by the fact that the variation above 6 hours (6 to 8 hours) is less than the variation below 6 hours (6 to 2.5 hours); so, a small number of students who slept very little are skewing the average.

The experimental group reported less sleep before the examination, with an average of 6.05 hours of sleep, as compared to 6.47 hours of sleep before the quiz.

The reason for this variation is unknown but it is possible that the variation in the control group may be a result of having asked questions about the amount that they slept. If this is the case then this was an unavoidable result of data collection. The decreased sleep quantity in the control group might also simply be that, around examination time, students are under greater pressure to study and, so, sleep less.

The average difference in hours of sleep between the two groups was smaller than was anticipated, 0.36 hours or 21.6 minutes; so, it was anticipated that the impact on declarative questions would be minimal, since the difference in total NREM sleep is quite minor.

However, there may be a ‘border’ point around six hours. The hypnogram from Reite et al. (2008) suggests that the average young adult enters the REM stage of the fourth sleep cycle at about
six hours of sleep; so, the data may show the effects of increased REM sleep quantity on declarative questions. The difference within groups, between students who received higher or lower sleep quantities, may also be significant.

*Declarative results (quiz-type questions)*

![Figure 3 Hours of sleep and declarative question results](image)

Figure 3 showed no significant correlations between sleep and declarative question results, as suggested by the marginal $R^2$ value for the experimental group and the very low $R^2$ value for the control group. This was confirmed by Pearson’s product-moment correlation analysis. This is in line with the earlier finding in Section 5.1.2 of this study. It appears that six hours of sleep is a critical ‘border’ point, above which additional NREM sleep fails to provide any statistically significant increase in performance.

In both samples (experimental and control), the majority of students slept six hours or more and the correlation between sleep and declarative results breaks down at this point. The experimental group scored better than the control group, with the control group scoring an average of 8.01 out of 10, and the experimental group scoring 8.69 out of 10, a difference of 6% between the two groups; however, the statistics suggest that this difference is not statistically significant. These results add evidence to the existence of a ‘border’ condition.

*Procedural results (essays, unknown words, contextual questions)*

The control group showed a marginally statistically significant positive correlation, with an $R^2$ value of 0.07 (confirmed by Pearson’s product-moment correlation analysis, $r=0.37$, $n=37$, $p=0.06$). Alone, this would suggest that higher sleep quantities are marginally correlated to higher results on procedural questions but the correlation isn’t as strong or as sure as expected (Myers et al., 2010).
The experimental group, who experienced only an additional 21.6 minutes of sleep on average, showed a stronger statistically significant positive correlation between additional sleep and higher procedural question results, with an \( R^2 \) value of 0.14 (confirmed by Pearson’s product-moment correlation analysis, \( r=0.35 \), \( n=38 \), \( p=0.02 \)). The experimental group’s results confirm that additional sleep has a positive effect on procedural question results (Myers et al., 2010).

As with the declarative questions, the experimental group scored better than the control group, with the control group scoring an average of 7.00 out of 10 and the experimental group scoring 7.61 out of 10, a difference of 6% between the two groups. However, the stronger correlation between sleep and procedural question results seen in the experimental group suggests that even a minor difference in sleep may be important, particularly if that increase is near the six-hour mark.

What these results show is that additional sleep quantity has a positive impact on language questions that require what Stickgold et al. (2001) would describe as ‘fluid thinking’ (p. 1055), such as essay questions and when students encounter unfamiliar words and need to think flexibly about possible meanings based on known words and context.

**Key Findings**

This section will briefly summarize the key findings from this research as they apply to EFL education.

**Sleep Quantity and EFL Test Performance**

More sleep resulted in better test performance across all categories of tasks. This is not a new finding and was expected from the literature. However, the magnitude of the impact on the most basic EFL learning tasks, like memorizing definitions and word lists, was greater than expected (a 31.73% improvement over the control group).
Border Conditions and Sleep Sufficiency

The question of sleep in relation to health has been well researched and we can be clear on how much sleep is required for good physical and mental health. However, the issue of sleep sufficiency in terms of EFL learning has never been addressed before.

This study suggests that Ullman’s procedural/declarative model may have important implications for EFL learning. The current study found that there do, indeed, seem to be two different categories of EFL learning tasks and that they react differently to different types of sleep.

Declarative tasks, such as learning lists of words and their meanings, seem to be governed by NREM sleep. Furthermore, in EFL students of university age, there seems to be a ‘border’ point at around six hours of sleep where sufficient sleep is reached and additional sleep seems to have no statistically significant impact on the performance of declarative memory tasks.

In regards to procedural learning tasks, such as essay writing and guessing unknown words, it seems that REM sleep governs task performance in these areas. Unfortunately, the subjects in this research did not obtain large enough sleep quantities to ascertain what would constitute a sufficient sleep quantity for optimal task performance.

Flexible Thinking and REM sleep

While the issue of sleep sufficiency and border conditions was not adequately resolved for procedural memory tasks, this study did find statistically significant evidence that increased sleep quantity improves performance on these sorts of EFL tasks, with the results suggesting that sleep in excess of six hours may be important and that even relatively small increases in sleep quantity may improve performance on these tasks.

Discussion

Limitations

The major limitation of this study was the inability to monitor student’s precise sleep times and sleep quality. While the methodology employed in this study is consistent with international sleep research norms, it is a limitation. In addition, the sleep quantities were not as varied as hoped, which constrained the conclusions that could be drawn regarding REM sleep and declarative learning.
Generalizability of this Study
This study concerns itself with the physiological effects of insufficient sleep on students’ EFL task performance. These physiological effects are human constants, generalizable to wherever students are receiving insufficient sleep.

This study draws on previous international research to validate the universality of the findings, comparing the results of previous studies against the results in this study. The results of this study are consistent with previous international sleep studies.

The Implications of this Study
Assessment Design Implications
This research has implications for EFL assessment design. Declarative assessment tasks, such as vocabulary tests and other memorization tasks, are governed by NREM sleep. Students can recover NREM sleep through strategies such as napping (Tucker et al., 2006) and this can mask the effects of low sleep quantities. However, napping does not provide any REM sleep, which results in students performing well on declarative assessments, such as vocabulary quizzes, but less well on procedural portions of assessments, such as essay writing and comprehension assessments.

EFL Research Implications
Given the substantial effect that sleep quantity can have on EFL task performance, this may be an important variable to control for in experimental design, particularly when comparing task performance between learners of different ages, since sleep quantities generally decrease as learners become older (Fredriksen et al., 2004; Gradisar et al., 2011; Marhefka 2011, Stein et al., 2001). Sleep quantity might also contaminate experimental results on EFL task performance if one group obtained substantially more sleep than the other, for some reason.

Non-EFL Implications
Sleep research also has many non-EFL implications, relating to mental and physical health. Encouraging students to sleep more would not only improve their EFL performance but would also have numerous other health benefits, such as reducing stress levels, lowering levels of depression, and so forth (Bjørngaard et al., 2011; Goldstein et al., 2008; Iga, 1986; Liu, 2004).

Future Research Implications
This study opens up many EFL research questions relating to sleep, such as sleep sufficiency for procedural memory tasks, whether an upper border condition exists for procedural memory tasks, the impact of excessive sleep on EFL performance (both declarative and procedural), whether the
border condition is age-specific, the impact of sleep on the speed or quality of the production of memorized stock phrases versus unique constructions, in verbal or written format, and so forth.

Conclusion
The impact of sleep quantity on EFL learning is an area that has been neglected and this study has found that it may have a major impact on EFL learning.

In conclusion, everyone is aware that sleep is an important biological function but students may be sacrificing sleep in the belief that an extra hour or two of studying might yield greater benefits; however, this research shows that, if anything, an extra hour or two of sleep would in most cases enhance EFL task performance more.

The old saying, 四当五落, yon tou go raku, is inaccurate and it should more accurately be 六当五落, sleep for six hours and you’ll pass, sleep for five hours and you will fail.

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References


Attitudinal Recontextualisation in Media Texts: Positive and Negative Alignment and Media Subjectivity

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Abstract
Attitudinal recontextualisation in the printed media has long been a fascinating and challenging area of linguistic research. Drawing inspiration from White (2001, 2002a) and Martin’s (2004, 2000) heteroglossic engagement perspective, and Halliday’s (1978, 1994) semiotic theory and model of transitivity, this paper analyses the linguistic resources Reporters use for attitudinal positioning in the lead up to the second Iraq war. It proposes that the language and stylistic resources that have been treated elsewhere under such headings as epistemic modality, eventuality, factive and non-factive, tense, direct and indirect speech, veridicity, intratextuality and intertextuality can be grouped together on discourse semantic grounds; namely, that they all provide the means for Reporters to take a stance towards messages in media texts. Others have extensively covered the linguistic mechanisms by which Reporters encode recontextualised messages (see Hyland, 1998; Chen, 2005; Thompson, 1996). However, this study posits to go beyond much of the current literature by viewing the endorsement/dis-endorsement of media language in semiotic, dialogical and inter/intratextual terms. Thus, this paper will lean heavily towards the work of White (2001, 2002a) and Martin (2004, 2000) on heteroglossic engagement perspectives, as well as Halliday’s (1978, 1994) semiotic theory and model of transitivity.

Keywords
systemic functional linguistics, appraisal theory, media discourse, reporting verbs, transitivity

Introduction
Recontextualisation accounts for a significant proportion of news coverage: ‘News, to a remarkable degree, is what people say and how they say it’ (Cappon 1991: 79). Journalists are reliant on second-hand news in the form of speeches, statements, announcements, opinions, reactions and replies to questions. It is talk on talk with up to several stages of recontextualisation involved before reaching mass media discourse (Falk, 2000). In general terms, recontextualised talk in media is, thus, seen as ‘[...] the dynamic transfer – and – transformation of something from one discourse/text in context [...] to another’ (Linell, 1998: 144-145). Caldas-Coulthard (2003) points out ‘as soon as one writes or speaks about any social practice, one is already recontextualising’ (p. 279). In this respect, recontextualisation involves a movement of discourse(s) across practices, from one type of

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a practice or context to another. Discourse appropriation is rarely repeated verbatim. The recontextualisation of ‘particular expressions, arguments, or facts involve[s] transformation of meaning, dependent on the context into which they are embedded’ (Solin, 2004: 271). On the most obvious level, this means language being reworded, with new lexical items added and others deleted. While it bears many features of the original, it is re-encoded in ways which obscure, emphasize or evaluate aspects of the communication in question.

This process is particularly manifested in the discourse of newspapers, since the construction of meanings by the media relates to multiple dimensions of what Fairclough (1998) terms ‘semiosis’. He identifies some of these dimensions as: the production cycle of texts by journalists and news agencies, the dialogicality of news, the ideological and economic interests of newspaper companies and their owners, the relationship between governments and media conglomerates and the political and ideological environments.

Most media research literature suggests that, for recontextualised quotations to have values, they need to originate from what Floyd (2000) terms elite persons. Roeh (1982: 154) found that, out of six hundred stories, sixty-eight per cent featured elite persons saying something. In two earlier studies, Curran (1977) and Hall (1977) note the role that the print media has in upholding the status quo. Curran writes that the press in Britain:

> remains a powerful integrative force in society. It has contributed materially to the remarkable stability and high degree of allegiance to British political institutions that has persisted in Britain despite her loss of empire (ibid.: 26)

Chomsky and Herman (1988) argue that these dimensions of semiosis, or, in their words, “propaganda filter constraints”, have powerful unilinear effects on the recontextualisation of news. That is, between the processes of decontextualisation and recontextualisation, there exists an intertextual gap where meanings are filtered to serve elite class interests. They add that journalists and editors responsible for the recontextualisation of news do not make a conscious decision to align their words with the interests of the dominant elites; rather, meanings are formed and produced at an unconscious level, such that conscious decisions are typically understood to be natural, objective, and commonsense (ibid.: 2).

The media, in other words, as well as helping to promote an establishment consensus, also constructs and orders the way the public perceives reality. Philo (1983, quoted in Fowler 1991: 13) reinforces this observation:

> ‘News’ on television and in the press is not self-defining. News is not ‘found’ or even ‘gathered’ so much as
made. It is a creation of a journalistic process, an artifact, a commodity even.

In subjective news articles, there is an expectation that at least some of the writer’s personal thoughts, judgements and feelings will be revealed in their recontextualisation of text. In contrast, news articles which are classified as “hard” news are generally considered as “factual”, “objective”, “impersonal” and presented in such a way that there is no explicit linguistic evidence of alignment or dealignment with the original textual source. However, this is a very narrow understanding of hard news reporting and does not take into account the extensive set of language resources available to Reporters² for the manipulation of social reality. Iedema et al. (1994) described hard news reporting as ‘[...] an effect created through language (a “rhetorical” effect) rather than a question of being “true to nature”’. They further explain:

The “impartiality” or the “factuality” of a text are not measures of the degree to which it accurately reflects reality – as human subjects we use language to construct rather than reflect reality – but measures, rather, of the success of the text in presenting its underlying set of value Judgements and ideologically informed responses as “natural” and “normal”, as fact rather than opinion, as knowledge rather than belief. (ibid.: 4)

This paper is generally interested in the description of events objectively through the medium of hard news. However, it is particularly interested in exploring the resources of extra-vocalisation of what others have to say – how hard news Reporters construct a perception of objectivity whilst employing subtle language resources to align themselves with or against what is quoted. That is to say, the communicative and rhetorical functionality by which Reporters committed themselves towards the truthfulness or, to use Halliday’s (1994) preferred term, ‘validity’ of what others have to say and, thereby, aligned or dealigned themselves with the original textual sources who hold, or are represented as holding, these views. Attention is also paid to how language resources typically used to signal absence of commitment can be covertly used for the creation of interpersonal relationships with potential recipients.

Certain language features are available for constructing alignment in media discourse. In the construction of “subjective” writers’ voice, this task is relatively straightforward: features such as modal verbs and emotional responses signal the voice of the author and position their alignment against what is being reported. But, in the objective hard news report where the Reporter’s voice is constructed ‘[...] as impersonal, as anonymous or even absent, as the voice of the institution of journalism’ (Iedema et al., 1994: 5), the linguistic and discourse devices available for recontextualisation are more delicate and detection is more complex.

² The term Reporter is capitalized here to make the distinction between the voice of journalists who write hard news articles and those who write subjective commentary.
One area of linguistic research which can reveal much about a Reporter’s attitude are processes (Chen, 2005). These form the central components to the System of Transitivity and are described by Halliday (1985) as the crucial elements of the structure of text because they function to introduce the representation of the ‘goings on’ of reality. Chen (2005) explains that the system of processes is particularly powerful for media analysis because it is through choosing certain verb processes rather than others that the Reporter is able to foreground certain meanings in discourse whilst backgrounding others. Thus, aligning the reader towards one sense of social reality rather than another. Although there are six categories of processes within the System of Transitivity, this paper focuses on just one; namely, verbal processes of saying. These are the elements of the clause which introduce speech and can reveal much about the recontextualisation mechanisms by which Reporters go to work on reader’s perceptions of reality. As Chen (2007: 30) points out,

Verbal processes are a particularly useful tool for the linguistic analysis of media texts because they are what Halliday calls predicates of communication. That is, they are the element of the clause by means of which the authors of a text introduce the speech of those they are reporting on. The verbal processes can thus reveal much about what a journalist feels about those whose words are deemed reportable; and also much about the way in which a journalist pushes the reader towards a certain view of that person.

Others have extensively covered the linguistic mechanisms by which Reporters encode recontextualised messages (see Bergler et al., 2004; Hyland, 1998; Chen, 2005; Thompson, 1996; Floyd 2000). But, this study posits to go beyond much of the current literature by viewing the endorsement/dis-endorsement of recontextualised talk in semiotic, dialogical and inter/intratextual terms. This concurs with Halliday’s (1994) view that language does not exist in a vacuum and any analysis of recontextualised messages needs to go beyond the clause and engage with three areas: the systems of choice, the communicative functionality of linguistic resources, and the semantic relationship that language has to other elements within and outside of a text. In particular, the study is interested in the System of Appraisal, the communicative and rhetorical functionality of these wordings by which Reporters committed themselves towards the truthfulness or, to use Halliday’s (1994) preferred term, ‘validity’ of recontextualised talk and, thereby, aligned or dealigned themselves with the original textual sources who hold, or are represented as holding, these views. In this, the study is moving into an important dimension of Tenor and interpersonal lexicogrammar that has been relatively neglected within SFL research of mass media.

The research framework draws inspiration from Halliday’s (1978, 1994) semiotic theory and model of transitivity. It also borrows extensively from White (2001, 2002a) and Martin’s (2004, 2000) Appraisal modal and the sub-systems of Engagement and Attitude. There is a strong focus on
describing and explaining the subtle ways that language is used to evaluate, to adopt stances, to construct textual personas and to manage interpersonal positioning and relations within the genre of objective hard news. In the approach set out here, attitudinal recontextualisation can be broadly categorised into three main domains: those that function to narrow evaluative space, i.e., commit to the validity of utterances and give credibility to textual sources; those that seek to open up evaluative space and to distance the Reporter from the textual source; and those that are defined as neutral. Thompson and Ye (1991), Thompson (1996) and Chen (2005, 2007) have earlier defined these groups as positive, negative and neutral processes but this study extends the work of prior researchers by moving the focus towards the semantics of evaluation and notions of endorsement and dis-endorsement.  

**Theoretical Considerations of the System of Attitude**

The System of Attitude is central to the research framework adopted here and deserves more consideration. In considering Attitude, the issue is with pieces of text which position persons, things, situations, actions, events or states of affairs in either positive or negative terms. That is to say, the system of Appraisal classifies as attitudinal ‘any utterance which either conveys a negative or positive assessment or which can be interpreted as inviting the reader to supply their own negative or positive assessments’ (White, 2004: 2). The system of Attitude has been subcategorised into: Judgement (semantic resources for evaluating human behaviour), Appreciation (evaluating things aesthetically) and Affect (evaluating emotions). Each of these semantic resources can evaluate attitudinal positioning in either positive or negative terms and, together, they ‘constitute an interconnected and interactive system of evaluation’ (White, 1998: 107).

Thus, Affect comprises a set of language resources for appraising emotional reactions and dispositions towards persons, things, happenings or states of affairs (White, 2004: 9, 2001: 5):

> I’m especially pleased to be here today to address this business gathering, put together in the name of and in support of Tony Smith, the Member for Casey.

(Prime Minister Howard, April 14, 2003 – address to the Casey Business Lunch)

Such evaluations provide one of the most common strategies for a speaker to establish solidarity or, in Burke’s term, identification between speakers and audiences. By appraising certain phenomena in effectual terms at the beginning of a speech, the speaker establishes a rapport with the audience and increases the likelihood of them seeing that response as appropriate and well motivated. Once

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3 These terms were chosen because the definition positive or negative verbal processes is too narrow and does not take into account how evaluation meaning moves across semantic boundaries.
identification between speaker and audience is established, it increases the likelihood that the listeners will be more open to the broader ideological stance of the speaker. But, identification between speaker and audience can also be achieved through positive judgements.

The Prime Minister is a man of his word. He is a man of great ability, deep conviction, and steady courage.
(President Bush, April 8, 2003 – Hillsborough Castle Belfast, Northern Ireland)

The system of Judgement constitutes the semantic resources for evaluating, either positively or negatively, human behaviour (Martin & Rose, 2003: 62). This system can be broken into two broad categories: social esteem and social sanction (Iedema et al., 1994). Social Esteem involves evaluations under which a person will be admired or criticised but without legal implications. Social Sanctions, on the other hand, involve assertions that some rules or regulations have been breached (Iedema et al., 1994; Martin & Rose, 2003: 62). These linguistic resources can be further distinguished into those that are explicit lexical items and those that White (2004) has termed ‘Tokens of Judgement’ (ibid.: 11-12). It is possible to see the interplay between explicit lexical items (bold) and tokens of Judgement (underlined) in the example above.

Another way to positively evaluate is through the resources of Appreciation:

Operation Iraqi Freedom was carried out with a combination of precision and speed and boldness the enemy did not expect, and the world had not seen before.
(President Bush, April 8, 2003 – Hillsborough Castle Belfast, Northern Ireland)

Appreciation is the system by which objects, performances and phenomena are evaluated aesthetically and can be thought of ‘as the institutionalization of feelings in the context of propositions’ (Rose & Martin, 2003: 63). Appreciation, in a similar vain to Judgement, is oriented towards the “appraised” rather than the subjective “appraiser”. That is, ‘values of Appreciation are properties which attach to the phenomenon under evaluation rather than the human subject doing the evaluation’ (White 2001: 1).

Alongside these attitudinal resources, Appraisalal is also concerned with the range of resources ‘by which speakers/writers adjust and negotiate the arguability of their utterances’ (Appraisal Guide 2004: 1). Drawing upon Bakhtin’s interconnected notions of heteroglossia and dialogism (1973, 1978, 1981, 1986), the subsystem of Engagement (White, 2002a) was developed to explore how the various styles or strategies of persuasion and intersubjective positioning of authorial and external voices operates within different discourse domains.

The distinction between neutral utterances that demote heteroglossic diversity and
interpersonally charged utterances that promote heteroglossic diversity is fundamental here. Strictly speaking, even the most interpersonally neutral utterance is interpersonally charged, in that a degree of tension exists between utterances made and alternative and contradictory views. White (2005) explains that this degree of tension between utterances is socially determined: ‘It is a function of the number and the social status of those alternative socio-semiotic realities under which the utterance at issue would be problematised.’ (p. 6). Therefore, the difference between the following utterances is in the degree to which intertextual heterogeneity is acknowledged.

Monogloss: ‘Saddam Hussein has weapons of mass destruction’
(Prime Minister Howard, November 23, 2002 – address to the NSW Liberal Party State Council)

Heterogloss: ‘Given that history, I say to you: to allow him to use the weapons he has or get the weapons he wants, would be an act of gross irresponsibility and we should not countenance it’
(Prime Minister Blair, September 10, 2002 – address to Parliament)

For White (2002b), the monogloss is a bare assertion that construes either solidarity or power. In the case of the former, a proposition is represented as common knowledge, a given, and, thus, as uncontroversial, while in the case of the latter, the textual voice assumes sufficient status or moral authority to be able to exclude alternative viewpoints.

Heteroglossic acceptance can be further divided into intra-vocalisation and extra-vocalisation. Intra-vocalisation refers to utterances in which the voice is an internal voice; that is, the voice of the speaker or writer. White (2002a) considers intra-vocalisation under the resources of dialogic contraction (‘modality, proclaims and disclaims’) and dialogic expansion (entertain). In the following example, heteroglossic diversity (underlined) is inscribed by the internal voice.

And as I emphasise I’m not claiming that the war is over and nobody should claim that the war is over but certainly it can be said that the regime is finished.
(Prime Minister Howard, April 10, 2003 – press conference, Parliament House)

Extra-vocalise or Attribution acts to insert external voices into the text and, as such, belongs to the system of intertextuality (White, 2001). At one extreme, external utterances are inserted directly (Insert) into the text. At the other end, external utterances are reworked into the text (Assimilate4) and the distinction between external and internal utterances becomes somewhat blurred (White, 2002a). Once an external source has been included into the text, its properties can be endorsed or

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4 Different researchers have used different terms. Halliday and Matthiessen (2004) use the distinction of ‘paratactic’ and ‘hypotactic’ to explain the Taxis relationship. They also use the terms ‘quoting’ and ‘reporting’ to explain logico-semantic type.
Endorsement

In a speech here, Mr. Powell warned of a nexus between “irresponsible rogue states with these kinds of weapons and terrorists who would be bent on acquiring them”, adding, “And nowhere is that danger more grave than in Saddam Hussein's Iraq”.

(New York Times, February 1, 2003)

Non-endorsement

But Mr. Blix, speaking for all the United Nations inspectors, said, “The absence of evidence means, of course, that one cannot have confidence that there do not remain weapons of mass destruction.”


Dis-endorsement

Mr. Powell sought to explain what intelligence had led the Bush administration to make earlier charges that Iraq was seeking to develop biological, chemical and nuclear weapons, as well the missiles, aircraft and drones to deliver them. In so doing, he offered new information.


Table 1 Binary representation of the ‘dialogistic expansion’ versus ‘dialogistic contraction’ relationship

<table>
<thead>
<tr>
<th>Contract-ing dialogic diversity</th>
<th>Expanding dialogic diversity</th>
</tr>
</thead>
<tbody>
<tr>
<td>(Disclaimer: Denial) It is a view which doesn’t consider that Saddam has WMD.</td>
<td>(Probabilise: Evidence) There is evidence/proof which indicates that Saddam has WMD.</td>
</tr>
<tr>
<td>(Disclaimer: Counter-Expect) What is surprising is to find that some experts don’t believe that Saddam has WMD.</td>
<td>(Probabilise: Likelihood) This may prove that Saddam has WMD.</td>
</tr>
<tr>
<td>(Proclaim: Expect) Naturally, Saddam has WMD.</td>
<td>(Probabilise: Hearsay) I hear that Saddam has WMD.</td>
</tr>
<tr>
<td>(Proclaim: Pronounce) The truth of the matter is Saddam has WMD.</td>
<td>(Extra-vocalise: authorially dis-endorsed) X claimed ‘Saddam has WMD’.</td>
</tr>
<tr>
<td>(Extra-vocalise: authorially endorsed) As power has demonstrated, Saddam has WMD.</td>
<td></td>
</tr>
</tbody>
</table>

Table 1 Binary representation of the ‘dialogistic expansion’ versus ‘dialogistic contraction’ relationship (based on White, 2001).
Corpus

Six Media publications from The United States, Great Britain and Australia were analysed. The newspapers were: *Australian, Melbourne Age, The Times, The Guardian, Wall Street Journal* and *New York Times*. These are some of the longest-established broadsheets published and, arguably, some of the most influential papers within English-speaking countries. These were analysed quantitatively using Simple Concordance and Weft QDA Programs. Individual instances of endorsement (positive verbal processes) and dis-endorsement (negative verbal processes) were then qualitatively analysed in some detail in the context of the article in which they occurred to tease out the subjective elements of hard news texts. What they might reveal is the attitude of Reporters towards the validity of those whose words were being recontextualised and the way in which the Reporter might be trying to dialogically align the reader's perception of a text and of the textual participants in a certain direction. The analysis also shed light on the resources of implicit modality (Hegarty, 2006) and Judgement. That is, there are a host of ways that Reporters can covertly encode a particular world view of attributed wordings and, thus, subtly push the reader’s perception of social reality in a particular direction.

The 480 article corpus was assembled from the register of traditional hard news-news about the government, military, domestic policy, and foreign policy in the three months leading up to the second Iraq war. The texts shared the same Field, Tenor and Mode. That is, all the texts are from the register of “hard news” – the news items that make use of linguistic devices that signal factuality, which exclude any overt commitment to extra-vocalised utterances and which allow the Authorial voice to remain absent from the surface of the text (Iedema et al., 1994). Iedema et al. (1994) observe that, with objective hard news articles, there are no authorial values of explicit Judgements. Hence, when compared, therefore, ‘with journalistic commentary and many other types of texts, it appears to put significantly fewer interpersonal values at risk and hence is not felt to position the reader emotionally or attitudinally’ (White, 1997: 25). Any explicit Judgements that are included are located in the quoted statements of external voices.

**Endorsement**

**Positive Reporting Verbs**

These are the reporting clauses which signal a high level of support or commitment to the validity or truthfulness of the reported proposition. Such a role for the reported information is achieved by the Reporter’s interpretation of the status of the reported information in particular ways; most

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obviously, by the use of a verbal process or highly credible sources functioning as external textual voice. But, attitude is also realised across grammatical boundaries and is dynamic throughout text. The Reporter’s endorsement of either the source or the projected wordings can also be signalled by larger evaluation formations that function around the reporting clause and necessitate the analysis of the lexical sign in its intratextual and intertextual contexts. In this sense, then, the reporting clauses clearly do not signal neutrality in the communication of the information, as the Reporter’s voice clearly intervenes to add endorsement to the recontextualised utterance.

Generally, this endorsement is one of explicitly supporting another idea or claim. This is most commonly achieved through what can be termed semantically factive projecting verbs, such as warn, show or point out – just to name a few that occurred in the corpora of texts analysed here. Unlike neutral verbs, the semantics of the verbs in this group make it clear that a positive stance is being adopted and that the Reporter is committed to the truth or validity of what is projected. There is also the sense that they are promoting the idea that the external textual voice, whose words are being recontextualised, is a credible source.

Extract 1:
Cataloguing Iraq's failure to account for its chemical and biological stockpiles to UN inspectors, Mr Bush warned these materials could kill “several million people”.
(Age, January 30, 2003)

The effect of using a semantic factive verbal process to set up a textual persona is apparent in extract 1. By the use of a verbal process such as warn, the Reporter is construing the external textual voice’s words as a prediction of a future event that somehow bodes badly for the hearer but there is still some possibility of avoiding. Although, it is true that the status awarded to the external textual voice’s political position naturally confers importance on any utterance that he makes in the public sphere. The semantic meaning that is inherent in this lexical item promotes a persona of the external textual voice as a wise and authoritative figure.

Extract 2:
“We believe a world in which weapons of mass destruction are in the hands of rogue states, with the potential threat of them falling into the hands of terrorists, is not a world that Australia wants to be part of,” he (Howard) declared at the White House with George W. Bush at his left hand.
(Australian, February 22, 2003)

In extract 2, the choice of declare as the reporting verb also indicates something about the Reporter’s attitude to the external textual voice. The semantics rooted in this lexical item imply
formality but they also imply a sense of restriction in that this type of projecting verb is normally restricted to figures of public office making official statements in the public sphere. Had the Reporter used this verbal process to project the same saying but from the proverbial man or woman on the street, the sentence would somehow be seen as marked.

However, it is important to note that certain potential rhetorical effects arise from this combination of what could be best described as double projection. Firstly, the cognitive verb believe implies that Howard, as the original textual source, does leave some room for alternative and contradictory views. But, the second projecting verb declared effectively closes down any sense of heteroglossic diversity by interpersonally positioning Howard as a powerful textual source.

Extract 3:

The Iraqi declaration, he (Power) pointed out, is “silent on this stockpile, which alone would be enough to kill several million people”.


Extract 3 is functioning somewhat differently. Here, the reporting verb pointed out is conferring factual status upon the projected message, rather than directly casting any status upon the external textual voice, although the two are intertwined. This can be seen as a case of the Reporter signalling solidarity with the original voice. Such endorsements, of course, have a dialogical function of closing down potential dialogical alternatives (White, 2003: 270).

Dis-endorsement

Negative Reporting Verbs

The most obvious negative reporting clauses are those that contain verbal processes such as denied, claimed, admitted, insisted, all of which appear in the corpora of texts analysed here. The function of these verbs is, very often, precisely to indicate the weakness of the Reporter’s commitment to the truth/validity of the projected clause.

All of the examples illustrated here are themes advocating military action in Iraq and have been sourced from a variety of newspapers. However, the employment of negative verbal processes enables the Reporter to open up the evaluation space and create an element of doubt or scepticism about the validity of the extra-vocalised utterance.

Extract 4:

General Powell insisted President George W. Bush wanted a peaceful solution but said US troops were prepared to take action against Baghdad.
“We are taking prudent actions, positioning our forces so that they will be ready to do whatever might be required,” he said.  

(Australian, December 31, 2002)

Extract 4 comes from the Australian and is a good example of a negative verbal process. Here, the verbal process projecting the clause is insist – a lexical item loaded with negative assumptions. The mere fact that Mr Power has to insist on the veridicity of President Bush’s prior utterance opens the speculation that this was not the case and may give rise to the inference that he is on the defence. Here, it was the Reporter’s choice to write insist rather than choosing the neutral verbal process says. Had the Reporter chosen such a verbal process, the meanings of the projected clause complex would have been subliminally recontextualised in subtle yet powerfully different ways, leaving it more objective and less subjective. Space for engaging with the projected utterance would have then been narrowed, providing less dialogical room for questioning the true beliefs/desires of those in authority.

Extract 5:  
In Canberra, Mr Howard claimed war would be legal even without a new UN resolution.

“There is already enough legal authority contained in all the resolutions that have been passed to authorise the use of force to disarm Iraq,” he said.  

(Age, March 7, 2003)

The negative verbal process claims in extract 5 is similar. The Reporter once again has the semiotic freedom of what verbal process to employ. He or she could quite easily have written In Canberra, Mr Howard said... The employment of the negative process claims achieves an objective that would not have been achievable by more neutral processes. This type of reporting verb is meta-argumentative (see Bondi, 2001), in that such verbs present propositions in a way that indicates a difference of opinion is being pointed out or provoked by the Reporter. By positioning the projected utterance as a claim, the Reporter is, thus, not only using these meta-argumentative aspects to indicate an argumentative stance but, also, using the elements of doubt inherent in such a term to characterise the external textual voice’s words as a supposed reality rather than an actual reality and, thus, its truth value has not been firmly established. To attribute any given viewpoint in this way is to open up dialogical space for alternative positions, i.e., the suspicion that, in fact, the war would not be legal.

Extract 6:  
Tony Blair yesterday complained that much of Europe's anti-American rhetoric is a “parody” of reality and
warned critics of his Iraqi policy that those seeking to divide the EU from the US were “playing the most dangerous game of international politics I know”.

In the most spontaneous moment of his monthly press conference he protested: “Some of the rhetoric I hear about America is actually more savage than some of the rhetoric I hear about Saddam and the Iraqi regime.

“Let’s have a sense of perspective here. America is our ally, America is a country we have been together with over the last 100 years and we have stood together with in important times.”

Though that did not mean “we should do whatever America wants”, people should view the US as an ally, not as “some alien power that operates against our interest”, he insisted.  

(The Guardian, February 19, 2003)

Extract 6 is another example of a negative reporting verb. The verbal process complained in the leading sentence is clearly an emotively charged lexical item and projects a trace of grievance. Indeed, complained is one of those verbs that blur the lines between material and verbal processes and give a sense of weakness to the Doer/Sayer. This sense of weakness also gives the impression that the external textual voice is violating deeply rooted notions of appropriate behaviour from a political leader; people in positions of authority or power do not complain, they accuse or blast. Said could have been used instead but this would have been neutral in its Judgement of the external textual voice and, by extension, the original utterance.

Adding to the negativity are the subsequent projecting verbs protested and insisted in the second and third sentence, respectively. These are verbs that contain traces of material processes. Had the Reporter chosen to employ neutral verbal processes, semantic diffusing of the leading paragraph would have maintained a negative modality stance throughout the theme. But, the employment of the latter negative processes also cranks up the sense of drama, enabling the Reporter to capture some of the richness of human social behaviour that would not have been possible with the use of neutral process verbs. Consequently, capturing the richness of human behaviour also has the ideational effect, from a Reporter’s stand point, of enlivening news reports and encouraging the intended audience to read them. 

There is more to it, though, than the desire to enhance the news value of stories. In principle, at least, these verbs could make the stories more accurate (Geis 1987, 93-94). If the speaker did protest, the neutral said would make for a less truthful report. There are at least two possible responses to this observation. First, the projected clause should be able to speak for itself without the reporting injecting emotive laden lexical items into the projection process. Second, there is a considerable degree of subjectivity involved in deciding whether or not a statement qualifies as a ‘protest’ or ‘complaint’ and it is the Reporter who decides.
Extract 7:
Mr Howard denied he was playing on the emotion felt about the Australians killed in Bali.

“It was stating the danger to Australia if terrorism is not contained in all possible ways, including denying rogue states the capacity to hand chemical and biological weapons to terrorists,” he said.

“We all hope that we can avoid a military conflict and we all hope that if a military conflict occurs that casualties are the absolute minimum.

“I see disarming Iraq as being part of the wider war against terrorism because of Iraq's past and continuing assistance to terrorist organisations.”
(Age, March 11, 2003)

The effects of using negative verbal processes are that they, in some way, cast doubt upon the veracity of what is being said. In extract 7, the Reporter uses deny as the projecting process. There is generally, perhaps always, a preparatory condition to the effect that the denial is a denial of something that has been affirmed. This immediately raises, in the audience’s mind, the possibility of the opposite presupposition to the one presented at least having some validity. It may also give rise to the inference that that the external textual voice is replying to something that they probably would have preferred to keep quiet. Such processes are dialogic because, as Verstraete (1998) observes, they represent the original voice as taking an ‘argumentative or defensive position’ against some other communicative participant, usually within the immediate spatial and temporal context, who is holding a viewpoint which, to some extent, is different from their own (ibid.: 2001).

Extract 8:
Mr Bush tried to explain the need for war against Iraq by referring repeatedly to the trauma of Sept. 11 and what he said was a real threat that Mr Hussein would provide money, training or weapons of mass destruction to terrorists.

While reporting verbs are the most obvious way of a Reporter distancing themselves from the validity of recontextualised propositions, it is not the only way. In extract 8, the verbal process tried to explain is not projecting what the original external textual voice said; rather, it is functioning as a report on speech. That is, it is reflecting on the verbal/material process with which the original external textual voice projected his message. It is not until the projecting clause what he said, itself a distancing mechanism, that there is a recontextualised version of the original message. Here, the effect of distancing is more complex; not only is the Reporter distancing her/himself from the message but they are also bringing into focus evaluative material processes, actions that conjure up
images of desperation.

**Negative Evaluations and Dis-endorsement**

The study now turns to some instances where the textual elements at the opening of the theme have the characteristic potential for constituting the negative framing of the larger semantic unit. Labov (1972) terms this part of the text ‘evaluation’. Evaluation is an aspect of the narrative structure of a text. The term ‘evaluation’, Labov notes, refers to ‘the means used by the narrator to indicate the point of the narrative, its raison d’être: why it was told and what the narrator was getting at’ (*ibid.*: 207). One effect of evaluative elements is to enrich the narrative ideationally but it can also have interpersonal consequences. That is, the interpolation of the Reporter’s voice in the way of evaluations forms the creation of negative semantic domains that, in turn, influence the interpersonal readings of subsequent projections.

Extract 9:

Both internationally and domestically this is a momentous and dangerous course. Mr Blair's determination to press ahead suggests that he still does not fully grasp how momentous or how dangerous. Mr Blair is prone to say these days that he has won two arguments over Iraq – the first that the proliferation of weapons of mass destruction must be actively curbed, and the second that Saddam Hussein's Iraq is a threat to international stability that must be combatted.


Here, in extract 9, the explicit negative evaluation (Appreciation) lexis *a momentous and dangerous course* is, in fact, a referral to prior textual information but it also functions to negatively frame what is to come by inferring implicit negative Judgements on the external textual voice’s material actions. The explicit negative Appreciation and, by inference, foregrounding negative Judgements upon the external textual voice’s material actions continue in the subsequent complex clause, further contributing a semantic context of epistemic non-belief in what is projected.

The first evaluative clauses leading up to the projection are also monoglossic formulated and are, thus, construed as fact. Interpersonally, this means that the Reporter has made the assumption that his/her own propositions are generally known or accepted information in the current communicative context. Here, the audience is considered to ‘operate with the same knowledge, belief and values as those relied upon by the proposition’ (White, 2003: 263).

Extract 10:

But the Foreign Office, as always reflective of its political masters, has in recent weeks been forced to come round. “Containment is no longer an option,” one of its officials said yesterday. “The time for that has gone.” He said war was almost inevitable, probably this spring.
Extract 11:
Mr Blair has shifted his rationale for military action since the huge rallies in London and elsewhere, no longer echoing US President George W. Bush's emphasis on “regime change” in Iraq and the danger of Iraq giving new weapons to terrorists. Instead Mr Blair has argued that there is a strong moral case for ending Hussein's brutal treatment of the Iraqi people.

Yesterday he told parliament that he was still prepared to leave Hussein in power if his Government disarmed quickly.

“I detest his regime. But even now he can save it by complying with the UN's demand. Even now, we are prepared to go the extra step to achieve disarmament peacefully.”

With extracts 10 and 11, the lack of explicit evaluation items in the narration clauses makes the negative interpersonal manifestation somewhat more difficult to detect. But, in both cases, subtle words and expressions, such as “forced to” and “shifted his rationale” are used to give a sense that the external textual voice is being forced to take a position that is against his/her original intentions. These negative Judgement tokens also have the potential to dispose the reader towards negative interpretations of the projected text that follows.

**Movement across Semantic Boundaries**

Having thus outlined two main categories of reporting clauses that fit into negative or positive categories, it is now important to point out that there also exists a small number of verbal processes that can move across attitudinal boundaries, such as argued, maintained, declared and insisted. Here, it is even more crucial to consider these lexical items not as isolated signs but as wordings dependent on intertextual and intratextual variables for semantic interpretation.

Take the word to argue; the word clearly has an ideational function of cranking up the sense of drama and conflict but it is how this lexical item is interpreted against intratextual variables that positions it interpersonally.

Extract 12:
But Mr. Milhollin argued that Mr. Powell had not demonstrated that the United States faced an imminent threat from Iraq. “Just because there is a terrorist cell in Iraq,” he said, “does not prove that Saddam Hussein is ready to transfer mass destruction weapons to Al Qaeda for use against the United States”.

For example, in extract 12, the projecting verb carries little indication of the Reporter’s attitude to the validity of the message. However, depending on the reader’s ideological position, intertextual reading of the external textual voice as somebody with the fortitude to disagree with a high-status individual, such as the then United States Secretary of State, could inscribe slight traces of inherent positive Judgement.

Extract 13:

Lawyers here scrambled to support Mr. Annan's remarks, pointing to Chapter 1 of the charter, which says that all members should refrain from the use of force in international relations… Those lawyers also argued that America's new doctrine to make pre-emptive strikes against perceived threats does not conform with Chapter 7, which recognizes the “right of individual or collective” self-defense.


Extract 13 was somewhat more difficult to analyse and necessitates the intratextual reading of the dynamic attitude on display throughout the text to categorise the projected clause as negative. The most obvious is the use of specific names and titles for lawyers advocating the pre-emptive doctrine (i.e., Richard N. Gardner, Professor of International Law at Columbia University, Professor Wedgewood). Compare this to the other participants within the same text that differ from this position. The lack of specific titles such as Lawyers here, those lawyers and the use of non-specific deictic those functions interpersonally to distance the Reporter from any arguments contrary to that of the United States Government. Additionally, the material process of scramble in the preceding sentence suggests a sense of panic and desperation, thereby adding to a sense of chaotic desperation by those advocating alternative arguments.

Extract 14:

Citing several examples of Iraqi weapons programs, Mr. Bush sometimes said the evidence came from American intelligence, sometimes cited United Nations inspectors, and consistently argued that the Iraqis had done nothing to answer the various questions put to them.

(The Times, January 29, 2003)

In extract 14, the Reporter employs Amplification (‘consistently’) to strengthen the positive nature of the verb. Hence, with such a formation, the Reporter construes him/herself as being in solidarity with the original textual voice.

Conclusion

This study has looked at the use of verbal processes in a corpus of 480 hard news texts from six media groups comprising of liberal and conservative broadsheets. Analysis of the corpus of text has
made it possible to identify three broad categories of verbal processes, two of which are dealt with here.

**Positive Verbal Processes**

Particular examples of positive verbal processes analysed in this study have the effect of aligning the readers towards the source of the utterance, of giving the readers a sense that the source is variously powerful, confident, authoritative, wise, well informed, well intended or superior, amongst other things. Here, the Reporters manipulated the semantic resources of verbal processes and the systems within Attitude to align readership to the original textual source. Generally, as this study has demonstrated, it is the Reporter’s choice to ascribe such positive Judgements. Another effect of the positive verbal processes identified in this study is to align the Reporter with the sentiments being expressed by the extra-vocalised utterance. Dialogically, these types of processes close down evaluative space and align the readers towards the sentiments expressed by the utterance. Again, as shown by this study, it is normally the Reporter’s choice of processes which does this extra engagement work.

**Negative Verbal Processes**

Just as particular examples of verbal processes examined in this study function to align readers towards what is uttered and the source of the utterance, other processes operate rhetorically in the opposing direction. This study reveals that particular negative verbal processes operate to distance the Reporter from the source of the inserted text and to give the readers a sense that the original source is weak, uncertain, indecisive, lacking in authority, among other things. Here, the Reporters are taking advantage of the perceived objective properties of verbal processes to dialogically position readers against the original source. Likewise, as with positive processes, the study has revealed that processes also exist to distance the Reporter from the sentiments of recontextualised utterances. Dialogically, these processes function to expand evaluative space. Again, the choice of verbal process to manipulate senses of social reality was the Reporter’s own and, as such, can be revealing of deeper set ideological values.

These findings so far closely replicate those of previous research on the reporting verb as the semantic projector of evaluation (Chen, 2005; Hyland, 1998; and Gidengit & Everitt, 2000). But, what emerges most clearly from this study is that evaluation is a much more complex procedure than this. The reporting verb is an important linguistic device for determining stance-taking but it has become evident that this is only one of many strategies available. The evaluations that surround the projecting process in the way of Appraisal play an equally, if not more, important part in the processes of interpersonal positioning and validity evaluation. Equally important, this study has also
shone light on the resources of covert modality. That is, there are a host of ways that Reporters can covertly encode a particular world view of attributed wordings and, thus, subtly push the reader’s perception of social reality in a particular direction. These findings are interesting in that they show that, while these texts were retrieved from the hard news sections of newspapers, elements of what Iedema et al. (1994) have termed ‘commentary Judgements’ have been weaved into the discourse.

This study also shows that, in objective texts, external utterances are inserted in such a way that there is often no explicit linguistic evidence of the Reporter’s value Judgements of either what is extra-vocalised or the source of the utterance. Value Judgements are backgrounded with an absence of overt commitment to the “truth value” of statements and downplaying or removing Authorial voice. This reveals how Reporters are able to construct a set of descriptions, which they presume will be associated by readers/listeners with certain subjective responses but still maintain the impersonal voice of the “Reporter”. This suggests that the difference, then, between objective or subjective text is not about the presence or absence of Judgement but the presence or absence of explicit Judgement elements. That is, as long as the language resources used to signal subjectivity are backgrounded, a text can still be seen as operating within the domain of hard factual news.

In summary, this article has tried to foreground an interpersonal perspective on media discourse, which focuses on what might be thought of as the rhetorical power of implicit language resources within objective media texts. In particular, it has emphasised the role of Appraisal in aligning readers towards certain perceptions of social reality. The findings from this approach are interesting for what they reveal about the attitudes of Reporters working for liberal and conservative newspapers and writing within the register of hard news and the types of language resources which enable them to implicitly insert these attitudes into their texts. More widely, this study has shown that the SFL and the Systems of Appraisal and Transitivity provide an analytical framework which is interesting, useful and powerful for the analysis and comparison of media texts in general and verbal processes in particular. But, it is important to point out, particularly for readers who are less familiar with SFL and the subsystem of Appraisal, that this approach is not simply a technique of textual analysis; it is, rather, a total theory of language (cf., e.g., Halliday & Matthiessen, 2004; White, 2004) of which certain aspects lend themselves to the analysis of media text. It may be possible to arrive at similar conclusions about the functions of verbal processes on an intuitive basis but these findings need to be anchored in a theoretical framework in order to be of academic interest. Otherwise, they remain at a fairly subjective level.

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Vološinov, V. N.


The Acquisition of Verb Inflections by Adult Turkish Learners of English

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Abstract
The aim of this study is to investigate the acquisition of verbal inflectional morphology by adult Turkish learners of English in an instructed context. In particular, it attempts to find out what can account for the variable use of verb inflection by L2 learners in light of previous research. 52 adult Turkish learners of English, divided into two groups based on their general language proficiency, participated in this study. An oral production task was designed to elicit the target morphemes (i.e., auxiliary be and third person singular –s) from learners. In addition to the qualitative analysis of the learners’ oral production data, a number of statistical tests were performed on the data using SPSS Version 20. The findings indicated that both high and low proficiency L2 learners make few tense/agreement errors in their speech, though they fail to produce appropriately inflected verbs on a consistent basis. The presence of appropriately inflected auxiliary be and few instances of tense/agreement mismatches provide compelling evidence for the pre-existence of functional categories and/or features. Thus, the study shows that the variable use of verb inflections by L2 learners does not necessarily indicate an absence or impairment of functional categories in L2 learners’ grammar, which confirms the Missing Surface Inflection Hypothesis. It is hoped that the findings of this study shed some light on our understanding of L2 learners’ interlanguage grammar and the underlying L2 acquisition processes.

Keywords
inflection, second language acquisition, interlanguage, variation, Turkish

Introduction
The acquisition of verb inflections in second language (L2) has been a matter of interest for researchers over the past two decades. Numerous studies have shown that L2 learners have protracted difficulty acquiring and producing verbal inflectional morphemes in their speech and they often exhibit variability in their L2 production of verbal inflectional morphology, either omitting or inappropriately using the inflections (Bailey et al., 1974; Zobl & Liceras, 1994; Gavruseva & Lardiere, 1996; Haznedar & Schwartz, 1997; Lardiere, 1998). Specifically, they produce utterances such as he play, she going or they are run. Despite the fact that variation is uncontroversial, there is relatively little consonance among researchers

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with regard to what such optionality implies; in particular, whether it indicates a defective syntactic representation in the L2 learners’ interlanguage grammar (Meisel, 1997; Beck, 1998; Eubank, 1993, 1994) or whether it is the consequence of a problem with the overt realization of verbal inflectional morphology (Haznedar & Schwartz, 1997; Prévost & White, 2000). The present study investigates the variable use of verb inflections by adult Turkish L2 learners of English in oral production, considering the incidence of finite and non-finite morphology and the contexts in which each is found, as well as tense/agreement, and seeks to find out what can account for the inconsistent use of verb inflections in L2 learners’ interlanguage grammar.

Based on previous research findings, there are two possible explanations regarding the variable use of verb inflections in L2 acquisition. One of them is that functional categories or features are absent or impaired in the learners’ grammar (Meisel, 1997). This deficient syntactic representation causes the omission or variable use of verb inflections in child or adult L2 learners, which is known as the Impaired Representation Hypothesis (Meisel, 1997; Hawkins, 2000, 2001). Meisel (1997) argues that L2 grammars lack agreement – thus, functional categories – on the grounds that infinitives and bare stems are commonly used in place of finite forms. However, it should be noted that, in his study, Meisel looks at whether a subject is found with an agreeing verb form, rather than whether an agreement is accurate when it is used (Prévost & White, 2000). Similar to Meisel (1997), Beck (1998), Eubank (1993, 1994) and Eubank et al. (1997) assert that L2 learners suffer from a more local impairment, under which functional categories such as Tense are present but their feature strengths are impaired. Accordingly, Eubank (1993, 1994) proposes a defective L2 initial grammar by maintaining that functional categories can transfer from L1; however, they have underspecified values. He argues that this syntactic knowledge is acquired, perhaps gradually, as the rate of production of verbal morphology reaches some criterion. Likewise, Vainikka and Young-Scholten (1996) examined longitudinal data from adult L2 learners (with Turkish and Korean as L1) learning German to argue for the development of a gradual structure-building of functional categories in L2 learners’ grammar. They suggest that the initial interlanguage grammar overtly lacks functional categories that may develop at a subsequent stage and that native language lexical categories and headedness can transfer to the L2. Yet, Hawkins (2000) claims that, once uninterpretable feature values are activated for functional categories in L1, those feature values constrain the L2 grammar. Accordingly, he proposes that certain feature values cannot be changed or activated in L2 acquisition and, thus, there is a ‘critical period for the selection of parameterized formal features’ (ibid.: 80).
It is noteworthy that variability in the suppliance of functional morphology is not only observed in individuals who are still in the process of L2 acquisition but, also, in the speakers whose interlanguage grammars have reached a steady state. In two case studies of fossilized speakers, Lardiere (1998) and White (2003) provide evidence for the continuity of the omission of certain verb inflections. White reports 60% suppliance of indefinite articles in the case of SD, an L2 English speaker whose L1 is Turkish, while Lardiere reports 34.5% suppliance of past tense and 4.5% suppliance of agreement in the L2 English of Patty, a native speaker of Mandarin and Hokkien. Moreover, these proportions do not change considerably over time – a nine-year interval between data gathering sessions in the case of Patty and eighteen months in the case of SD – which leads the researchers to suggest that native-like ultimate attainment in this domain is by no means assured.

The other explanation pertaining to the variable use of verb inflections by L2 learners is that L2 grammar is complete and the omission of verb inflections results from a problem in mapping existing features to their surface forms, possibly due to processing or communication pressures (Haznedar, 2001, 2003; Prévost & White, 2000; Prévost, 2003), which is known as the basis of the Missing Surface Inflection Hypothesis (Prévost & White 1999, 2000). As opposed to Meisel (1997), Prévost and White (2000) argue that, if there were lack of agreement in L2 grammars, finite verbs would presumably be expected to occur in not only finite positions but also non-finite ones. In other words, finite verbs would occur after auxiliaries or modal verbs (e.g., *He can/is goes), as there is no feature-checking mechanism at work. However, Prévost and White found that L2 learners rarely placed finite verbs in non-finite positions, although they frequently placed non-finite verbs in finite positions. They also found that, when overt/tense agreement morphology was used by the L2 learners, it was mostly used accurately, which led them to argue that, if the omission of verb inflections results from the absence or impairment of functional categories or features, then tense/agreement errors (e.g., *They likes chocolate) would frequently occur as feature-checking mechanisms are not available to the L2 learner. Therefore, they concluded that L2 learners ‘have abstract features for finiteness and agreement in their interlanguage representation, as evidenced by the syntactic and morphological behavior of finite verbs’ (*ibid.: 127) and they use non-finite forms as “default” forms in place of finite forms. A similar result was also obtained in Ionin and Wexler’s (2002) study where L2 learners of English, whose L1 was Russian, almost never produced incorrect tense/agreement morphology, though they frequently omitted inflections in their spontaneous production. On similar grounds, Herschensohn’s (2001) longitudinal study of two intermediate learners of French showed that,
although inflections were often omitted, when they were supplied, learners mainly used them in a target-like way. Therefore, the researcher claimed that the errors attested in the oral production data of L2 learners do not indicate impairment in the functional categories; rather, they signify a problem with morphological mapping, following Prevost and White (2003).

Arguing against the absence or impairment of functional categories and/or features, Haznedar (2001) examined the acquisition of the inflectional system by a Turkish child learning English, Erdem. She found that Erdem was able to perform other morphological and syntactic operations, such as auxiliary raising in negative constructions and subject raising in utterances with overt subjects, although he lacked tense and agreement morphology in the early stages of L2 development. Hence, she attributes the absence of an overt auxiliary be form in some of the child’s utterances to a mapping problem between syntax and morphology, rather than a syntactic deficit in his grammar.

As mentioned earlier, Lardiere (1998a, 1998b) examined the occurrence of past-tense marking on verbs in obligatory past finite contexts relative to pronominal case marking for Patty, an adult Chinese-speaking learner of English. She found that, despite a very low production rate of only about 34% past-tense marking on verbs, pronoun case-marking was perfect, which implies that the feature specification for finiteness associated with a functional category tense is, indeed, present in the L2 grammar. As such, under the Missing Surface Inflection Hypothesis, she concluded that L2 grammar is complete in terms of functional projections but incomplete in terms of morphology and proposes that the omission of agreement morphemes may be due to phonological constraints imposed on the target features by a learner’s L1 (Lardiere, 2007; Goad & White, 2004).

Although the variable use of verb inflections has been extensively studied in both child L2 learners (e.g., Haznedar, 2001; Ionin & Wexler, 2002) and adult L2 learners (e.g., Haznedar, 2003; Prévost & White, 2000) with various L1 backgrounds, we find few studies conducted on Turkish-speaking adult learners of English as a foreign language (EFL) in a classroom setting with respect to their use of verb inflections in spontaneous oral production. Hence, a study on the acquisition of verb inflections by Turkish-speaking adult EFL learners is worthy of study, since it may shed light on our understanding of interlanguage grammar and the influence of native language on L2 acquisition. The current study aims to investigate the acquisition of verbal functional categories of T (tense) and Agr (agreement), and the formal features of [+finite, -past] with auxiliary be and thematic verbs. In particular, the relevant morphemes which will be examined are the third person singular agreement morpheme –s and the be auxiliary forms which are is, am and are.
Research Questions

The research questions addressed in this study are the following:

- What are the difficulties and errors that L2 learners display in the oral production of auxiliary *be* and thematic verb constructions; in particular, the third person singular *–s* in non-past contexts?
- Do such difficulties and errors disappear in the L2 oral production data as the general proficiency of the L2 learner increases?
- What causes L2 learners to make errors in the use of Auxiliary *be* and third person singular *–s* in non-past contexts?
- Could the Missing Surface Inflection Hypothesis account for the variable use of verb inflections by adult Turkish L2 learners?

Hypotheses

In accordance with the Missing Surface Inflection Hypothesis, I have made the following predictions:

- When finite forms are used, there will be little or no misuse of tense and agreement morphology by L2 learners, as the abstract categories and feature-checking mechanisms are assumed to be present in L2 learners’ grammars.
- L2 learners are expected to use non-finite forms as default forms in place of finite verbs. Accordingly, if a verb is finite, it should not be used after a *be* auxiliary form or modal verb.
- If non-finite forms occurring in finite positions are the default forms of finite verbs, then the overuse of non-finite verbs is also expected to be higher than the overuse of finite verbs.
- Based on the developmental sequence of morphemes in L2 acquisition (e.g., Dulay & Burt, 1974; Freeman, 1975; Rosansky, 1976; Makino, 1979), the accurate use of auxiliary *be* will be higher than the accurate use of third person singular *–s* in both elementary and upper intermediate groups’ oral production data.
- Upper intermediate L2 learners of English will use verb inflections in their speech production more accurately than elementary L2 learners of English.

If predictions (1) and (2) are borne out, it will suggest that the variable use of verb inflections does not necessarily mean that functional categories do not exist in L2 learners’ grammars. In other words, L2 learners have functional categories and abstract features in their interlanguage representation; however, they may have difficulty retrieving the relevant morpheme due to ‘performance limitations resulting from communication pressure’ (Prévost & White, 2000: 129).
In the rest of this paper, we will see that data obtained in this research do not exhibit optionality and, thus, are compatible with the Missing Surface Inflection Hypothesis. Although L2 learners frequently omit verb inflections in their spontaneous production, they make only a few tense/agreement errors, suggesting that the frequent omission of verbal inflections does not indicate that functional categories are absent or impaired in L2 learners’ grammar. Surprisingly, the findings also show that upper intermediate and elementary L2 learners do not differ significantly in their use of verbal inflectional morphology. The paper discusses the underlying reasons of these findings based on previous research.

**Methodology**

**Participants**

Fifty-two Turkish-speaking adult L2 learners of English, enrolled in preparatory classes at Hacettepe University, participated in this study on a voluntary basis. Thirty of them are female while twenty-two of them are male, with an age range of 19 to 25. Since one of the research questions of this study is to find out whether the difficulties and errors in the oral production of verbal inflectional morphology are overcome with the increase of general proficiency, the learners were subdivided into two groups on the basis of their general language proficiency. One of the groups consists of twenty-six elementary L2 learners of English, while the other includes twenty-six upper intermediate L2 learners of English.

**Instruments**

In line with the purpose of this study, an oral production task was designed to elicit the target morphemes (i.e., auxiliary *be* and third person singular *–s*) from learners on a par with their regular activities in class. The task consisted of two parts. In the first part, each learner was engaged in a conversation with the researcher and encouraged to talk about their best friends or family members in an effort to elicit third person singular *–s*. In the second part, s/he was provided with a picture and requested to describe the actions of the people in the picture with the purpose of eliciting auxiliary *be* forms from learners (Appendix).

**Procedure**

The oral production task was carried out in a quiet classroom to avoid interruptions. The time allocated for each learner was four minutes. The conversations were recorded on a tablet (Asus TF101G-Transformer) for transcription and analysis.
Data Analysis

The study collected data rich with the information to be analyzed. First, the recorded conversations were transcribed for the analysis. Irregular third person forms (e.g., has) and formulaic expressions (e.g., I don’t know, see) were excluded from the data to ensure that only the forms with –s without any change to the root were compared to the forms of auxiliary be in non-past contexts. Next, the use of target verbal inflectional morphemes in obligatory contexts was examined to code the data. Obligatory contexts are those in which the morphemes would normally be used in adult English. After examining the transcriptions of the L2 learners’ oral production, the data was coded and analyzed, as demonstrated in Table 1.

Table 1 The codes used for the analysis of the data

<table>
<thead>
<tr>
<th>Wrongly Tensed</th>
<th>Double Tensed</th>
<th>e.g., *She is/must goes. (A finite verb in a non-finite context)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bare Verb in PS/PC</td>
<td>e.g., * She is go. (PS) (A finite verb in a finite context)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>e.g., *She is go. (PC) (A non-finite verb in a non-finite context)</td>
<td></td>
</tr>
<tr>
<td>Not Tensed</td>
<td>Omission of 3.sg –s</td>
<td>e.g., *She go/going. (A non-finite verb in a finite context)</td>
</tr>
<tr>
<td></td>
<td>Omission of Aux be</td>
<td>e.g., *She going/go. (A non-finite verb in a finite context)</td>
</tr>
<tr>
<td>Correctly Tensed</td>
<td>Correct Use of 3.sg –s</td>
<td>e.g., She goes.</td>
</tr>
<tr>
<td></td>
<td>Correct Use of Aux be</td>
<td>e.g., She is going.</td>
</tr>
</tbody>
</table>

The categorization of each error attested in the oral production data was undertaken based on what was intended by the L2 learners. Additionally, each error category was labeled on the basis of the finite and non-finite morphology, following Prévost and White (2000). Within the category of wrongly tensed verbs, double tensed verbs (e.g., she is/must goes) were treated as an incidence of a finite verb appearing in a non-finite context, while bare verb forms used in
Present Simple contexts were taken as an incidence of finite verb appearing in a finite context, since, in such instances, tense/agreement is still marked, however in an erroneous form. Similarly, a bare verb form in the Present Continuous context was taken as an incidence of a non-finite verb appearing in a non-finite context, as both verbs (i.e., going and go) are non-finite.

Secondly, numbers and percentages of the instances of the correct usage of third person singular –s and auxiliary be in obligatory contexts, the omissions of relevant morphemes, the bare verb forms in present simple and continuous tense contexts and the double tensed forms in each learner’s oral production were calculated to find out the errors and difficulties L2 learners display in the oral production of target morphemes. Furthermore, the data was coded for tense/agreement errors; that is to say, the use of auxiliary be and third person singular –s with inappropriate person, number or tense (e.g., *They likes chocolate).

In addition to the qualitative analysis of the learners’ oral production data, a number of statistical tests were performed on the data using SPSS Version 20. To compare the performances of learners in both elementary and upper intermediate groups across different categories (e.g., omissions of auxiliary be and third person singular –s, finite verbs appearing in non-finite contexts, non-finite verbs appearing in finite contexts), paired samples t-tests were run on the percentages of the data. Finally, to see whether there was a significant difference between elementary and upper intermediate group with respect to their variable use of verb inflections, independent samples t-tests were conducted on the percentages of the data.

Results

Tense/Agreement Errors

My first hypothesis was that, when finite forms are used, there will be little or no misuse of tense and agreement morphology by L2 learners, as the abstract categories and feature-checking mechanisms are assumed to be present in L2 learners’ grammars. This section analyzes tense and agreement errors in the use of third person singular –s and auxiliary be by elementary and upper intermediate L2 learners. Tense/agreement errors in the use of third person singular –s are those used with a subject other than third person singular (e.g., They likes chocolate), while errors in the use of auxiliary be are those used with inappropriate person, tense, and number (e.g., I is eating). The percentage of inappropriate usage is given over all instances of use (thus, excluding the instances of omission). As demonstrated in Table 2, there were very few tense/agreement errors attested in the data, which suggests that, when
finite forms are used by L2 learners, they are almost always used with the appropriate tense/person/number specifications. Thus, my first hypothesis is supported.

Table 2 Tense/agreement errors

<table>
<thead>
<tr>
<th></th>
<th>Auxiliary be</th>
<th>%</th>
<th>Third person singular –s</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Elementary</td>
<td>1/143</td>
<td>0.7</td>
<td>1/67</td>
<td>1.5</td>
</tr>
<tr>
<td>Upper Intermediate</td>
<td>7/120</td>
<td>5.9</td>
<td>4/70</td>
<td>5.7</td>
</tr>
<tr>
<td>Total</td>
<td>8/260</td>
<td>3</td>
<td>5/137</td>
<td>3.6</td>
</tr>
</tbody>
</table>

_Morpheme Omission (Non-finites Appearing in Finite Positions)_

My second hypothesis was that L2 learners are expected to use non-finite verbs as default forms in place of finite verbs. As illustrated in Table 3, the percentages of the omission of morphemes in obligatory contexts were high across all data as compared to the total percentages of other types of errors (i.e., tense/agreement, bare verb forms used in Present Simple and Continuous contexts), which provides evidence for my second hypothesis. In order to compare the instances of the omission of auxiliary _be_ and third person singular _–s_ in both groups’ (i.e., elementary and upper intermediate) oral production data, a paired sample _t_-test was conducted. The results revealed that the omission of third person singular _–s_ (M=53.01, _S.D._=34.06) was significantly more than the omission of auxiliary _be_ (M=18.02, _S.D._=26.41); _t_(51)=6.385, _p_=.000. These results suggest that L2 learners omit third person singular _–s_ more frequently than auxiliary _be_ in their spontaneous speech.

Table 3 Omission of morphemes in obligatory contexts

<table>
<thead>
<tr>
<th></th>
<th>Omission of auxiliary <em>be</em></th>
<th>%</th>
<th>Omission of third person <em>–s</em></th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Elementary</td>
<td>20/163</td>
<td>12.2</td>
<td>62/129</td>
<td>47.6</td>
</tr>
<tr>
<td>Upper Intermediate</td>
<td>37/157</td>
<td>23.5</td>
<td>117/187</td>
<td>62.5</td>
</tr>
<tr>
<td>Total</td>
<td>57/320</td>
<td>17.8</td>
<td>179/316</td>
<td>56.6</td>
</tr>
</tbody>
</table>

To find out whether elementary learners differ significantly from upper intermediate learners in their percentages of the omissions of relevant morphemes, an independent samples _t_-test
was performed on the data. As presented in Table 4, no significant difference was found between groups in terms of the rate at which third person –s and auxiliary be were omitted in obligatory contexts.\(^2\) Thus, it can be concluded that both elementary and upper intermediate learners are identical with respect to their omission of third person singular –s and auxiliary be in oral production.

Table 4 Comparison of morpheme omissions between groups

<table>
<thead>
<tr>
<th>Error Types</th>
<th>Elementary Mean</th>
<th>Elementary S.D.</th>
<th>Upper Intermediate Mean</th>
<th>Upper Intermediate S.D.</th>
<th>t</th>
<th>d.f.</th>
<th>Sig. (2-tailed)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Omission of Third Person –s</td>
<td>47.61</td>
<td>34.9</td>
<td>58.40</td>
<td>33.51</td>
<td>-1.136</td>
<td>50</td>
<td>.261</td>
</tr>
<tr>
<td>Omission of Auxiliary be</td>
<td>11.64</td>
<td>22.66</td>
<td>24.40</td>
<td>28.72</td>
<td>-1.778</td>
<td>50</td>
<td>.081</td>
</tr>
</tbody>
</table>

**Overuse of Finite and Non-finite Verbs Compared**

My second hypothesis was also that, if non-finite verbs occurring in finite positions are the default forms of finite verbs, then the overuse of non-finite verbs is expected to be higher than the overuse of finite verbs. Table 5 shows a comparison of the incidence of finite verbs in non-finite contexts to the incidence of non-finite verbs in finite contexts. A paired samples t-test was also conducted to see if the difference between the overuse of finite (i.e., double tensed) and non-finite verbs (i.e., omissions of relevant morphemes) was significant. Results showed that the overuse of non-finite verbs (\(M=35.51, S.D.=23.42\)) was significantly higher than the overuse of finite verbs (\(M=2.14, S.D.=8.35\)); \(t(51)=-9.32, p=.000.\) These results indicate that L2 learners overuse non-finite verbs more frequently than finite-verbs, which provides further evidence for my second hypothesis.

Table 5 Overuse of finite verbs vs. overuse of non-finite verbs

<table>
<thead>
<tr>
<th></th>
<th>Overuse of finite verbs %</th>
<th>Overuse of non-finite verbs %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Both Groups</td>
<td>6/316</td>
<td>236/636</td>
</tr>
</tbody>
</table>

\(^2\) The minor inconsistency between the mean of the omission of third person singular –s (\(M=58.40\)) and the percentage (62.50%) of relevant morpheme presented in Table 2 for the upper intermediate group is due to the complete absence of the instances of the omission of third person singular –s in two learners’ oral production data. The percentage in question would not differ significantly if I excluded the data of those learners from the count.
Taken together, these results also suggest that the variable use of verb inflections does not necessarily mean that functional categories do not exist in L2 learners’ grammar, confirming my fifth hypothesis.

**Correct Use of Target Morphemes**

Table 6 illustrates the correct use of auxiliary be and third person singular –s in obligatory contexts in both groups’ oral production. A paired samples t-test indicated that the correct use of auxiliary be ($M=75.44$, $S.D.=27.96$) was significantly greater than the correct use of third person singular –s ($M=30.14$, $S.D.=31.62$); $t(51)=-8.062$, $p=.000$ in both groups’ oral production. These results show that the accurate use of auxiliary be is higher than the accurate use of third person singular –s in both elementary and upper intermediate groups, which supports my fourth hypothesis.

<table>
<thead>
<tr>
<th>Table 6 Correct use of target morphemes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Correct use of third person –s</td>
</tr>
<tr>
<td>Elementary</td>
</tr>
<tr>
<td>Upper Intermediate</td>
</tr>
<tr>
<td>Total</td>
</tr>
</tbody>
</table>

Additionally, to compare the percentages of the correct use of third person singular –s and auxiliary be in obligatory contexts between elementary and upper intermediate L2 learners, an independent samples t-test was employed on the data. The results showed that elementary learners ($M=50.69$, $S.D.=20.83$) and upper intermediate learners ($M=54.89$, $S.D.=23.17$) did not differ significantly in their correct use of target inflectional morphemes; $t(50)=.686$, $p=.496$. In other words, the upper intermediate group did not perform better than the elementary group in the correct use of verb inflections. Thus, there is little evidence to support my fourth hypothesis.

**Finite Verbs in Finite Positions vs. Non-finite Verbs in Non-finite Positions**

Those types of errors include the use of bare verbs in Present Simple and Continuous contexts. Specifically, tense/agreement is marked in an erroneous form in such kinds of errors. For instance, the learner attempts to produce “He goes”, but utters “*He is go” (i.e., a finite verb in a finite position) or she attempts to produce “He is going” but utters “*He is go”
(i.e., a non-finite verb in a non-finite position). Table 7 demonstrates the incidences of the use of finite verbs in finite positions and non-finite verbs in non-finite positions in both groups’ oral production data.

Table 7. Finite verbs in finite positions vs. non-finite verbs in non-finite positions

<table>
<thead>
<tr>
<th></th>
<th>Finites in finite positions</th>
<th>%</th>
<th>Non-finites in non-finite positions</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Elementary</td>
<td>24/129</td>
<td>18.6</td>
<td>14/163</td>
<td>8.5</td>
</tr>
<tr>
<td>Upper Intermediate</td>
<td>7/187</td>
<td>3.7</td>
<td>4/157</td>
<td>2.5</td>
</tr>
<tr>
<td>Total</td>
<td>31/316</td>
<td>9.8</td>
<td>18/320</td>
<td>5.6</td>
</tr>
</tbody>
</table>

Moreover, a paired samples $t$-test confirmed that the use of finite verbs in finite positions ($M=12.77$, $S.D.=20.24$) was significantly greater than the use of non-finite verbs in non-finite positions ($M=6.53$, $S.D.=13.72$); $t(51)=2.054$, $p=.045$. In other words, L2 learners use bare verb forms in Present Continuous contexts more often than the bare verb forms in Present Simple contexts. For further analysis, another set of paired samples $t$-tests were performed separately on the data of each group to see whether there was a significant difference within groups in terms of the percentages of usage of finite verbs in finite positions and non-finite verbs in non-finite positions. However, the test failed to reveal a statistically significant difference between the mean percentages of usage of finite verbs in finite positions ($M=21.16$, $S.D.=24.88$) and non-finite verbs in non-finite positions ($M=10.51$, $S.D.=17.63$) by elementary learners; $t(25)=1.797$, $p=.084$. Similarly, there was not a significant difference in the inaccurate use of finite verbs in finite positions ($M=4.39$, $S.D.=8.3$) and non-finite verbs in non-finite positions ($M=2.24$, $S.D.=5.91$) by upper intermediate learners; $t(25)=1.194$, $p=.244$. Therefore, it can be concluded that there was not a significant difference within elementary and upper intermediate groups in their inaccurate use of finite verbs in finite positions and non-finite verbs in non-finite positions; that is to say, they used finite verbs in finite positions and non-finite verbs in non-finite positions at similar rates.

To find out whether those types of errors disappear in L2 learners’ oral production as their general proficiency level increases, an independent samples $t$-test was conducted on the
data. As shown in Table 8, the results revealed that those types of errors vanish in L2 learners’ oral production as they become more proficient in the language.

Table 8 Performance comparison between elementary and upper intermediate groups

<table>
<thead>
<tr>
<th>Error Types</th>
<th>Elementary</th>
<th>Mean</th>
<th>S.D.</th>
<th>Upper Intermediate</th>
<th>Mean</th>
<th>S.D.</th>
<th>t</th>
<th>d.f.</th>
<th>Sig. (2-tailed)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Finites in Finite Positions</td>
<td></td>
<td>21.16</td>
<td>24.88</td>
<td></td>
<td>4.39</td>
<td>8.38</td>
<td>3.256</td>
<td>50</td>
<td>.002*</td>
</tr>
<tr>
<td>Non-Finites in Non-Finite Positions</td>
<td></td>
<td>10.81</td>
<td>17.63</td>
<td></td>
<td>2.24</td>
<td>5.9</td>
<td>2.350</td>
<td>50</td>
<td>.023*</td>
</tr>
</tbody>
</table>

*p<.05

Discussion

The results show that, although adult Turkish L2 learners of English frequently tend to omit the verb inflections in their spontaneous speech, they rarely make tense/agreement errors, which appears to cast doubt on the view of the absence of functional categories in L2 grammar. The L2 learners also use auxiliary be forms more accurately than the third person singular –s. The results surprisingly reveal that the elementary and upper intermediate learners do not perform significantly differently with regard to their correct use of auxiliary be and third person singular –s.

I first start with Meisel’s (1997) premise that missing functional elements suggest missing functional categories in the L2 learners’ interlanguage grammar. Thus, Meisel’s approach predicts a high incidence of faulty agreement because all features are held to be missing. This prediction, however, is evidenced in the present study. In previous sections, the L2 learners’ oral production data on the use of third person singular –s and auxiliary be demonstrates that there are few instances of tense/agreement mismatches, although the L2 learners frequently fail to supply verbal inflectional morphology on a consistent basis in their spontaneous speech. Prévost and White (2000) argue that relatively rare instances of faulty tense and agreement indicate the presence of a feature-checking mechanism in L2 learners’ grammar since, if feature-checking mechanisms were not available to L2 learners, then there would be more tense/agreement errors in the data as a result of impaired categories and features. Likewise, Ionin and Wexler (2002) found that child L2 learners make few tense/agreement errors in their spontaneous speech, suggesting the pre-existence of functional categories in their grammar. Although Eubank (1993, 1994) and Beck (1998) do not make the same predictions as Meisel (1997) on the accuracy of agreement, it is not clearly explained
under their approach why certain features related to finiteness are subject to inertness and others not.

Another piece of evidence for the presence of functional categories in L2 learners’ interlanguage grammar comes from the usage of non-finite and finite verbs. Assuming that features are lacking in L2 learners’ interlanguage grammar (Meisel, 1997) and feature-checking mechanisms cannot apply (Eubank et al., 1997; Beck, 1998), then finite verbs should appear not only in finite positions but also in non-finite positions (e.g., after an auxiliary or a modal verb construction) (Prévost & White, 2000; White, 2003). The data obtained in this study show that, with a few exceptions, finite forms do not occur in non-finite contexts; they are not found after a modal verb or an auxiliary in the same clause, which supports the Missing Surface Inflection Hypothesis (Haznedar, 2001, 2003; Prévost & White, 2000). These results suggest that adult Turkish L2 learners of English do, in fact, distinguish between finite and non-finite morphology and they are aware that finite forms do not substitute for non-finite ones.

An interesting finding of this study is the overuse of auxiliary be forms in Present Simple contexts (e.g., I am like chocolate). The suppliance of auxiliary be forms in Present Simple contexts cannot be the effect of direct transfer from Turkish because Turkish is an agglutinative language, in which modals and auxiliaries are used as suffixes and they cannot be separated from the predicate (e.g., verb, noun or adjective). The relevant feature that the L2 learners are acquiring first is entirely the one which is not fully available in their native language. As Lardiere (1999) has pointed out, the use of auxiliary be forms indicates the presence of a corresponding functional category in L2 interlanguage grammar. Thus, it is reasonable to argue that the omission of auxiliary be in some utterances does not imply a deficit in L2 learners’ syntactic knowledge (Haznedar, 2001). Following Ionin and Wexler (2002), I would like to suggest that the L2 learners may sometimes use auxiliary be forms to instantiate tense/agreement in a non-progressive clause. The fairly frequent usage of accurately inflected auxiliary be forms, as compared to the third person singular –s, in the data shows that the L2 learners have mastered the feature specifications of auxiliary be earlier than the feature specifications of third person singular –s, which is compatible with Zobl and Liceras’ (1994) findings.

Closely related to the correct suppliance of auxiliary be forms in the data is the accurate use of both auxiliary be and third person singular –s by elementary and upper intermediate learners. The findings of the present paper show that elementary and upper intermediate learners do not differ significantly in terms of their correct suppliance of target
inflectional morphemes. It has also been found that both elementary and upper intermediate learners omit verb inflections in their speech at similar rates. Based on this result, it is plausible to argue that the omission of verb inflections is not sensitive to the proficiency level of L2 learners. This finding is supported by Lardiere (1998a, 1998b) who shows that tense and agreement morphology may remain variable, even in a steady state L2 English grammar. As for the underlying reason of such underspecified forms, she suggests that, even when L2 learners have acquired more fully specified forms, they may resort to default forms due to mapping problems between surface forms and abstract features. Prévost and White (2000) further speculate on this issue within the scope of the Distributed Morphology Approach (DM) of Halle and Marantz (1993). In DM, although the features of a lexical item may not be an exact match for the features of a terminal node, they may form a subset of the features on the functional node. Accordingly, non-finite forms can be inserted into the node with [+finite] but the reverse is not possible because finite forms are specified as [+finite] and, thus, cannot be inserted into a node with [-finite]. Following Lardiere (1998a, 1998b), Prévost and White (2000) note that ‘even when a form specified for the relevant feature has been acquired, it becomes temporarily irretrievable from the lexicon […] this might be due to processing reasons or communication pressure’ (p. 129).

Although the main reason for such access difficulties is beyond the scope of this paper, on a final note, I would like to suggest that what Prévost and White (2000) maintain as ‘processing reasons or communication pressure’ may be accounted for within an Integrated Model of Oral Production building on the work of Levelt (1989) and Levelt et al. (1999). The basic levels in this model are discourse modeling, message conceptualization, message formulation and message articulation. Among these levels, it is the phase of message formulation where learners form a rough syntactic frame on the basis of the initial awareness of the word classes needed (Kaplan, 2010). Following this stage, articulation includes the execution of pre-articulatory plans prepared in the earlier stage. In this phase, those plans are usually manifested with minimal conscious attention, for the articulation is generally a relatively automated phase. Thus, the optionality in the use of verb inflections may be explained in terms of the minimal conscious attention paid to the form as a result of the automaticity in articulation stage.

**Conclusion**

In this paper, I have investigated the variable use of verb inflections by adult Turkish L2 learners of English in an instructed context. Specifically, the study has attempted to find out
what can account for variable use of verb inflections by L2 learners in their spontaneous production, in light of previous research. Findings indicated that L2 learners make few tense/agreement errors in their speech, though they often fail to produce appropriately inflected verbs on a consistent basis. The presence of appropriately inflected auxiliary *be* and few instances of tense/agreement mismatches provide evidence for the pre-existence of functional categories and/or features. Thus, the data investigated in this study confirms the Missing Surface Inflection Hypothesis. Although, it fails to provide evidence for the Impaired Representation Hypothesis, since, under an impairment account, a higher rate of agreement mismatches would be expected. Hence, the study shows that the variable use of verb inflections by L2 learners does not necessarily indicate an absence or impairment of functional categories in L2 learners’ grammar and L2 learners do have access to at least some aspects of Universal Grammar. It is hoped that the findings of this study shed some light on our understanding of L2 learners’ interlanguage grammar and the underlying L2 acquisition processes.

**Limitations**

Due to the constraints of time, this study employed only an oral production task as an instrument for data collection; however, it would yield more informative results if there were more than one tool to collect data. It would also be interesting to analyze the data in terms of the use of other inflectional morphemes (e.g., past tense –*ed*, copula *be*) and to investigate the influence of L1 prosodic representations on interlanguage grammars, which may provide an answer to the question of why suppliance of inflectional morphology is frequently variable.

**References**


Appendix: Sample of pictures used in oral production task
The Influence of Neighborhood Density on Word Learning

Skott Freedman

ARTICLE INFO

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Abstract
Previous studies exploring the role of neighborhood density (ND) in word learning have been predominantly conducted as co-investigations with phonotactic probability (PP) and, typically, only with children. In order to more clearly delineate whether lexical competition or facilitation operates during word acquisition across development, the sole influence of ND on word learning was examined for children and adults using the same task. Thirty-nine typically-developing children and 46 typical adults were presented with a narrative containing eight nonwords which varied in ND but were controlled for PP. Learning of phonological and lexical representations was measured at four points in time: at baseline, following one and four exposures, and 10 minutes following task completion. Findings indicated that, at baseline, both groups more accurately repeated nonwords with high versus low ND. However, during learning, children more accurately learned nonwords with low versus high ND; no differences emerged for adults. Results are interpreted under an account of lexical competition for child participants.

Keywords
neighborhood density, word learning, lexical competition, phonology, acquisition

Introduction
Considering the average adult possesses a root vocabulary of roughly 17,000 words (Goulden, Nation & Read, 1990), it is unsurprising that children begin the arduous task of lexical acquisition during the first year of life. Moreover, the rate at which words are learned must be fairly rapid and efficient. The ease with which words are acquired can be impacted by a multitude of lexical and sublexical variables including word frequency (Landauer & Streeter, 1973; Storkel, 2004), word length (Bard & Shillcock, 1993), and, even, the probability of a word’s sounds occurring together. This latter variable, dubbed phonotactic probability (PP), has been explored at length in a series of word-learning studies conducted by Storkel and colleagues (Storkel & Rogers, 2000; Storkel, 2001, 2003). Results have repeatedly shown that nonwords with high PP are learned more accurately (i.e., correct associations with novel

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object referents) relative to nonwords with low PP. This finding is true both for children and adults despite significant differences in lexicon size.

In contrast, findings of a related variable termed neighborhood density (ND) have been more inconsistent in identical tasks in which PP has been explored. ND refers to the number of words, or neighbors, that can be formed from a target word when substituting, deleting, or adding a sound in any word position (Luce & Pisoni, 1998; Vitevitch & Luce, 1998, 1999). For example, the word trap /tæp/ has many neighbors including track /tææk/ (a word-final substitution), trip /tɪp/ (a word-medial substitution), and wrap /ræp/ (a word-initial deletion). Words with many neighbors, such as the above example of trap /tæp/, are said to have high ND and reside in a dense neighborhood. Words with few neighbors, such as carve /kɑːv/ (e.g., car /kær/, cart /kɑːt/), are considered to have low ND and reside in a sparse neighborhood.

Differentiating effects of PP and ND during word learning is difficult because words with high ND tend to contain sound sequences that frequently occur in a language. Hence, a positive correlation exists between PP and ND; words with high ND are usually high in PP and words with low ND are usually low in PP. Given the aforementioned robust findings of PP, it becomes even more important, then, to explore ND independently of PP during word learning. Otherwise, the nature of the lexicon as being competitive or facilitative (or neither) during word acquisition remains unclear. In order to highlight the complicated nature between these two variables, the following literature review focuses exclusively on word-learning studies that have manipulated both PP and ND.

**Literature Review**

**Adult Word Learning**

While the majority of word-learning studies involving ND have focused on young children, who learn new words on a daily basis, adults also continue to acquire new words, such as neologisms (e.g., chillax, a combination of chill and relax). Storkel, Armbuster and Hogan (2006) acknowledged this possibility and conducted a word-learning study with typical adults. Novel objects were paired with nonwords varying both in ND and PP, and presented in a narrative context. Learning of phonological and semantic representations was assessed via a picture-naming task after one, four, and seven exposures. Both partially and completely correct responses were analyzed to determine influences of PP and ND on both early and later stages of word learning. Overall results indicated that adults learned a higher proportion of nonwords with high ND rather than low ND. However, when response accuracy was analyzed
separately (partially correct, completely correct), no effect of ND was found on partially correct responses. Instead, a facilitative effect of high ND was revealed on completely correct productions only for words containing high PP.

Although Storkel et al.’s (2006) findings point to a learning advantage for words with high ND, these results have yet to be replicated using a similar design. Stamer and Vitevitch (2012) conducted an adult word-learning task exploring the impact of ND, except stimuli in the task were real words in a second language that participants were already in the process of learning (Spanish). This is notably different from learning phonologically non-existent forms, as in Storkel et al. (2006), since it cannot be ruled out that participants in Stamer and Vitevitch (2012) had prior exposure to the stimuli. Stamer and Vitevitch (2012) also paired Spanish words with pictures already containing a semantic concept and label in English (e.g., boot), unlike novel visual stimuli presented in Storkel et al. (2006). Stamer and Vitevitch (2012) found an advantage for learning words with high ND versus low ND, as measured via a picture-naming task, referent identification task, and perceptual identification task. Given the significant differences in design between Storkel et al. (2006) and Stamer and Vitevitch (2012), the two studies are difficult to compare.

**Children’s Word Learning**

As a follow-up study to Storkel et al. (2006), Hoover, Storkel and Hogan (2010) sought to differentiate influences of PP and ND on preschool children’s word learning. The same task administered to adults in Storkel et al. (2006) was used, though children received significantly more exposures to the stimuli than the adults in the original study. Nonwords were also reviewed via an elicited production task, while adults did not benefit from the same opportunities. Hoover et al. (2010) reported a complex interaction between PP, ND, and type of exposure to nonwords (i.e., pairing words with contrasting ND either within or across stories). Nonwords with low PP and low ND best “triggered” the word learning process for children (i.e., correct associations with novel object referents), while nonwords with high PP and high ND were deemed most optimal for word learning. This last finding was qualified further as being significant only when paired nonwords that contrasted in ND were presented across different narratives; when paired in the same narrative, novel forms with low ND were learned best.

Finally, in a further effort to isolate effects of PP and ND on 4-year-old children’s word learning, Storkel and Lee (2011) manipulated ND while holding PP constant. In order to ensure a minimum amount of learning, training extended over two days for nearly all
participants and a criterion of 50% accuracy was required before training was discontinued (or a maximum training of six training-testing cycles, whichever occurred first). Due to floor effects on a picture-naming task, results were reported from a comprehension measure administered immediately after training as well as one week later. Findings revealed an advantage for identifying referents of nonwords with low ND relative to high ND immediately after training; yet, no difference was found between conditions a week later. In their discussion, the authors address how the study differs from Storkel et al. (2006), in which adult learning and testing occurred on the same day. Considering these important distinctions, including a lack of production results, it is difficult to make a direct comparison of how ND may affect children and adults during word learning on the same task.

In conclusion, the joint manipulation of PP and ND in word-learning studies has often resulted in an unclear picture of which variable is causing the observed effects (and when). It is, therefore, difficult to discern the degree of lexical competition or, alternatively, lexical facilitation that may function for children and adults during word acquisition. A summary of previous results by age and stage of learning is presented in Table 1.

Table 1 Selected word-learning studies of ND and PP by group and learning stage

<table>
<thead>
<tr>
<th>Group</th>
<th>Early Learning</th>
<th>Later Learning</th>
</tr>
</thead>
<tbody>
<tr>
<td>Children</td>
<td>Low PP, low ND &gt; high PP, high ND (Hoover et al., 2010)</td>
<td>Different narratives: high PP, high ND &gt; low PP, low ND (Hoover et al., 2010)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Same narrative: low PP, low ND &gt; high PP, high ND (Hoover et al., 2010)</td>
</tr>
<tr>
<td></td>
<td>Low ND &gt; high ND (Storkel &amp; Lee, 2011)</td>
<td>Low ND = high ND (Storkel &amp; Lee, 2011)</td>
</tr>
<tr>
<td>Adults</td>
<td>Low ND, low PP = high PP, high ND (Storkel et al., 2006)</td>
<td>Low ND, low PP &lt; high ND, high PP (Storkel et al., 2006)</td>
</tr>
<tr>
<td></td>
<td>Low ND &lt; high ND (Stamer &amp; Vitevitch, 2012)</td>
<td></td>
</tr>
</tbody>
</table>

The Present Study
In light of the paucity of research exploring the sole influence of ND on word learning in children and adults on the same task, coupled with the aforementioned mixed results, it
currently remains uncertain how ND alone may influence word learning. The purpose of the present study, therefore, was to examine the effects of ND alone during word learning. By controlling for PP (in addition to other lexical and sublexical variables), we can better understand the interactive nature of the lexicon during word acquisition. If words compete with one another, an advantage should be observed for learning the phonological and semantic representations of novel words with low ND, since these forms resemble fewer existing items in the lexicon. In contrast, if words facilitate one another, the opposite advantage might be observed. Importantly, nonword stimuli must differ only in ND to minimize other sublexical and lexical influences. Additionally, the current task measured word acquisition during early and later stages of learning (e.g., following one and four exposures with a subsequent 10-minute break and additional probe). By examining different stages of learning novel phonological and semantic representations, insight can be gained into how ND operates during the learning process for children and adults. For example, while Storkel et al. (2006) found an effect of ND for adults, this was only during late stages of learning. Also, measuring effects of ND on production following the very first exposure is warranted, since this has not been done previously with children.

**Formulation of Research Hypothesis**

On the baseline repetition task, it is predicted that children and adults will repeat words with high ND more accurately than those with low ND. Prior research has found that words with high ND are held more accurately in working memory than forms with low ND (Roodenrys & Hinton, 2002; Thorn & Frankish, 2005). This, presumably, might lead to more accurate productions upon initial exposure. Regarding word learning, Hoover et al. (2010) found that words with low ND best triggered the word-learning process, potentially due to increased saliency of forms that do not resemble many existing items in the lexicon. As well, Coady and Aslin (2003) found that children possess sparser neighborhoods than adults (i.e., they have fewer similarly-sounding words). This appears to indicate a preference for learning words with low over high ND. Thus, if lexical competition exists in the lexicon, an advantage should be found for learning nonwords with low versus high ND, since nonwords with low ND would have fewer neighbors (i.e., competitors). In summary, based on previous research of lexical neighborhoods and word learning (Hoover et al., 2010), in line with an account of lexical competition, it is expected that children in the current experiment will better learn the phonological and semantic representations of novel words with low versus high ND.
Regarding adult participants, findings from perceptual studies have revealed an inhibitory effect of ND due to lexical competition constraints (Luce & Pisoni, 1998; Vitevitch & Luce, 1998, 1999); words with low ND are perceived more accurately and responded to more quickly than those with high ND. Increased perceptual accuracy would likely result in more accurate phonological representations of novel words upon initial exposure, thereby leading to better productive learning. As such, it is predicted that adults in the study will productively learn more words with low ND rather than high ND.

**Methodology**

**Participants**

Thirty-nine children (22 females, 17 males) and 46 adults (44 females, 2 males) (n=85) were recruited to participate in the current study. The average age of children participating in the study was 4;6 (years; months) (s.d.=0;8; range=3;0-5;11), similar to prior research of this nature. The average age of adults participating in the study was 22;8 (s.d.=2;7; range=20;5-32;5). Following approval to conduct research via human subjects review, children were recruited to participate in the study through public announcements and distribution of flyers to area preschools. Once parents indicated an interest in having their child participate, they filled out an in-depth questionnaire about their child’s development of speech, hearing, and language, similar to Storkel and Lee (2011). Adult participants were undergraduate students recruited to participate in exchange for extra course credit. Once adult participants provided written permission, they completed an in-depth questionnaire addressing their speech, language, hearing, and overall development. Child and adult participants who were monolingual in English, and typically developing according to parent report or self-report (for adults), were eligible to participate in the experiment. These inclusionary criteria and procedures are similar to prior work of this nature.

Given that ND is presumably based on a sufficiently developed lexicon, the Peabody Picture Vocabulary Test-III (PPVT-III; Dunn & Dunn, 1997) was administered to all participants in order to verify that their receptive vocabulary was within typical limits. The PPVT-III additionally served as an index of overall cognition, given its positive and significant correlation (p<.05) with the Wechsler Abbreviated Scale of Intelligence (WASI; The Psychological Corporation, 1999; Freeman, Gregory, Turner, Blasco, Hogarth & Hayflick, 2007). The mean standard score of children participating in the study was 105 (s.d.=10; range=89-124); the mean standard score for adults in the study was 106 (s.d.=10; range=88-129), verifying that receptive vocabulary was typical for all participants.
**Stimuli**

Eight monosyllabic CVC nonwords (displayed in Table 2) were selected as stimuli in the experiment. In order to avoid confusion, nonwords were phonologically dissimilar from one another (Storkel, 2001). Half of the nonwords had low ND and the other half had high ND. Consistent with previous investigations (e.g., Storkel et al., 2006), ND was determined by the number of words that could be created by deleting, substituting, or adding a single phoneme to a target item, and was calculated using the Hoosier Mental Lexicon (Nusbaum, Pisoni & Davis, 1984). While this database is based on an adult lexicon, prior studies have reported that using adult lexicons provides comparable measures of ND with children (Hoover, Storkel & Kieweg, 2008). That is, words that are considered to be high in ND for adults are also high in ND for children.

<table>
<thead>
<tr>
<th>Word</th>
<th>ND</th>
<th>Condition</th>
<th>Semantic Group</th>
</tr>
</thead>
<tbody>
<tr>
<td>/nep/</td>
<td>10</td>
<td>low</td>
<td>animal</td>
</tr>
<tr>
<td>/detk/</td>
<td>26</td>
<td>high</td>
<td>animal</td>
</tr>
<tr>
<td>/mug/</td>
<td>7</td>
<td>low</td>
<td>tool</td>
</tr>
<tr>
<td>/poot/</td>
<td>32</td>
<td>high</td>
<td>tool</td>
</tr>
<tr>
<td>/kib/</td>
<td>8</td>
<td>low</td>
<td>toy</td>
</tr>
<tr>
<td>/barm/</td>
<td>16</td>
<td>high</td>
<td>toy</td>
</tr>
<tr>
<td>/jot/</td>
<td>3</td>
<td>low</td>
<td>vehicle</td>
</tr>
<tr>
<td>/gin/</td>
<td>18</td>
<td>high</td>
<td>vehicle</td>
</tr>
</tbody>
</table>

Experimental stimuli were divided at the median value for ND: Words below the median were considered to have low ND, while words above the median value were considered to have high ND. This is consistent with similar studies of this nature (e.g., Storkel, 2001). Nonwords with low ND had a mean ND of seven neighbors (s.d.=2.94; range=3-10) and nonwords with high ND had a mean ND of 23 neighbors (s.d.=7.39; range=16-32). An independent-samples t-test revealed that the high ND condition had a significantly larger number of neighbors than the low ND condition, t(6)=4.02, p<.01, d=2.84.

In order to control for a multitude of other sublexical and lexical factors that have been shown to influence word learning, the following variables were not significantly different (all p values >.05; see Appendix: Stimuli Control) between words with low and high ND:

- neighborhood frequency (the word frequencies of a word’s neighbors),
- stress-weighted phonotactic probability (positional segment frequency; biphone frequency),
phonological composition (early acquired sound classes), and
duration (described in detail below).

Stimuli were recorded directly to a Roland Edirol R-09 digital recorder at a sampling rate of 44.1kHz using a high-quality, bidirectional microphone. All stimuli and the narrative were recorded in an IAC Controlled Acoustical Environment sound-treated booth by a female native speaker of English, who uses a General American English dialect. All stimuli and the narrative were normalized using Adobe© Audition recording software. A different native speaker of English identified the nonwords in isolation with 100% accuracy, indicating that the recordings were intelligible and of high quality.

In order to ensure that durations were similar between words with low and high ND, stimuli were measured both in isolation and during the narrative. In isolation, words with low ND had a mean duration of 554 milliseconds (s.d.=77); words with high ND had a mean duration of 603 milliseconds (s.d.=79). During the narrative, words with low ND had a mean duration of 512 milliseconds (s.d.=73); words with high ND had a mean duration of 518 milliseconds (s.d.=66). Differences in duration between conditions were not significant, F(1,38)=0.39, p=.53, d=.09.

Next, semantic information was assigned to each nonword by randomly pairing it with a picture of a novel visual object. Objects were designated to one of four semantic categories: tools, animals, toys, or vehicles. Each category contained one nonword with low ND and one with high ND. In other words, there were two tools presented in the narrative (one with low ND, one with high ND), two animals (one with low ND, high ND), and so forth. Pictures of visual objects were piloted to five native speakers of English, who were unable to name the objects with one word. Given that certain objects might be more visually salient (e.g., color, familiarity), pairing of nonword stimuli was counterbalanced across two versions of the narrative. For example, a particular vehicle was associated with low ND nonwords in one version and high ND nonwords in the other version. All other aspects remained identical between narrative versions.

There were two episodes in the narrative. The first two visual scenes and accompanying narrative introduced the participants to two main characters and a central problem (i.e., a ship was stranded on an island). In subsequent scenes, characters were depicted interacting with the novel visual objects while the narrative simultaneously presented target nonwords. Two visual objects never appeared in the same scene in order to avoid confusion. Nonwords in each semantic pair were always presented in sentence-final position.
following identical syntactic constructions and were counterbalanced for presentation (first, second). For example, participants heard “Maybe a [jʊt]!” by one character labeling a vehicle with a low ND nonwords label, followed by a scene with the other character labeling “Maybe a [gin]!” for a vehicle with a high ND nonwords label. The final two scenes provided a resolution to the story (i.e., fixing the ship and sailing away) in order to provide narrative cohesion.

Since one of the goals in the current study was to investigate how ND influences word learning at different stages, exposure to the nonwords gradually increased during the task. Before the narrative began, a baseline repetition task was administered in which participants repeated each nonword. Thus, one auditory exposure for each nonword was initially presented. This served to examine any potential influences of ND prior to assignment of semantic information. Following the baseline task, one full exposure was provided per nonword during Episode 1 and three additional exposures were provided during Episode 2. Thus, all participants heard a total of four exposures per nonword, consistent with procedures of Storkel et al. (2006).

In order to assess learning of the nonwords, a picture-naming task was administered following Episodes 1 and 2. During the task, visual objects from the narrative appeared one at a time and participants were asked to name them. Participants were strongly encouraged to guess if they were unsure of a target, given that production errors were also of interest. Probe items were randomized and did not appear in the same order during subsequent testing. Lastly, retention was tested via the same task 10 minutes following the second probe. In summary, overall learning was tested at four points in time: following one auditory exposure (prior to semantic assignment), following one exposure with semantic assignment (Episode 1), following four exposures (Episode 2), and 10 minutes post-exposure. No feedback on production accuracy was provided at any time.

**Design and Procedure**

The study employed a within-participants 2x3 factorial design with ND (low, high) and time (1, 4, retention) serving as the independent variables, and production accuracy as the dependent variable. All participants attended one experimental session and were tested individually.

Participants were seated at a laptop computer, which presented auditory stimuli with Microsoft PowerPoint over Sony MDR-7506 headphones at a comfortable listening level. A high-quality, bidirectional microphone was positioned in close proximity to a participant’s
lips. First, the repetition task was administered. Participants were told that they would be hearing some made-up words and asked to repeat them as quickly and accurately as possible. A practice item was provided to ensure task comprehension. After each nonword was presented, participants had exactly three seconds to repeat the item, consistent with previous work (Vitevitch & Luce, 1999). Otherwise, the next item was automatically presented and a “no response” was scored.

Following completion of the repetition task, participants were told that they would be hearing a story. Visual pictures and the auditory narrative for Episodes 1 and 2 were presented with Microsoft PowerPoint. Child participants who demonstrated attentional drift during the narrative (i.e., looking away from the screen) were redirected to the story; adult participants needed no such feedback. A picture-naming probe was administered after Episode 1 (e.g., “Do you remember what this was called in the story?”). Participants were then presented with Episode 2 and a subsequent picture-naming probe. After finishing the second probe, a final picture-naming probe was administered 10 minutes later in order to assess retention.

**Speech Sample Recording, Transcription, and Reliability**
All single-word speech samples were recorded directly to a Roland Edirol R-09 digital recorder at a sampling rate of 44.1kHz. Responses were phonetically transcribed by the investigator, a native English speaker and a speech-language pathologist trained in English phonetics and phonology. Inter-rater transcription reliability was calculated for approximately 15% of speech samples by a research assistant trained in English phonetic transcription. Mean point-to-point transcription agreement reached 93% between listeners for children (s.d.=6%; range=87%-100%) and 98% for adults (s.d.=4%; range=87%-100%).

**Data Analysis**
Production accuracy was measured by analyzing featural properties of the sounds in target words. Following Edwards, Beckman and Munson (2004), each consonant in a participant’s production was analyzed for accuracy on a three-point scale: place of articulation, manner of articulation, and voicing. Each vowel was also coded for accuracy on a three-point scale: dimension (front, middle, back), height (high, mid, low), and length (lax, tense). One point was awarded for each correct feature; therefore, each phoneme could receive a maximum of three points. Since each CVC nonword in the task had a total of three phonemes, participants could be awarded a maximum of nine points per production (three phonemes × three points per phoneme). Dialectal and common variations were not penalized. Lastly, one point was
deducted from a phoneme if an epenthetic segment occurred directly before it (or in the case of a word-final addition, directly after it). Two accuracy scores were calculated for each participant: segmental accuracy for words with low ND, and segmental accuracy for words with high ND.

Considering previous studies have reported contrasting findings for children and adults (e.g., low ND > high ND, Hoover et al., 2010; high ND > low ND, Storkel et al., 2006), the two groups were analyzed separately in order to clearly understand any observed effects.

Results
Consistent with earlier work (Storkel et al., 2006; Hoover et al., 2010), an alpha level of .05 was used for all statistical tests. Effect sizes were calculated for all analyses. Using Cohen’s d (1988), effect sizes were considered to be small (0.2-0.3), medium (0.5), or large (0.8).

Production Accuracy
Each nonword was assigned a total possible number of nine points (three phonemes x three points per phoneme). Average scores were then calculated by dividing the total number of points a participant received at each point in time (one, four, retention) in each condition (low ND, high ND) by the total number of possible points. Productions at baseline were analyzed in a paired samples t-test. During and after word learning, productions were analyzed in 2 (ND) x 3 (time) repeated-measures ANOVAs.

Results will be presented for children first. All participants were able to perform the baseline repetition task. Prior to assignment of semantic information, children more accurately repeated words with high versus low ND, t(38)=2.43, p=.02, d=.51. Regarding the picture-naming task, as mentioned earlier, the difficult nature of such a task with young children can result in floor effects (Storkel & Lee, 2011). Given that the main objective of this study was to analyze productive performance of children and adults on the same task, children who were less than 5% accurate on overall segmental detail were excluded from the learning analysis. Importantly, this criterion ensured a sample size that is comparable to similar existing work (n=27). Also, it should be noted that the average age and range of children in the learning analysis was nearly identical to the original sample, M=4;4 (years; months) (s.d.=0;9; range=3;0-5;11).

During and after learning, a main effect of ND was found, F(1,52)=5.38, p=.02, d=.64. Consistent with predictions, children learned words with low ND more accurately than those with high ND. A significant effect of time was also found, F(2,104)=20.92, p<.01, d=.90. Post
hoc analysis using Fisher’s LSD procedure revealed that accuracy increased between one and four exposures, as well as between one exposure and retention testing. No differences in accuracy between four exposures and retention were found. Finally, there was a significant interaction of time and ND, $F(2,104)=4.50$, $p=.01$, $d=.42$. Words with low ND were learned to a greater degree following four exposures compared to the first exposure, as well as during retention compared to the first exposure; in contrast, words with high ND did not show any significant improvement over time.

Turning now to adult participants, words with high ND were repeated with greater segmental accuracy than those with low ND at baseline, $t(45)=5.14$, $p<.01$, $d=1.05$. Contrary to predictions and prior research, there was no effect of ND during and after word learning, $F(1,90)=0.09$, $p=.77$, $d=.06$. A main effect of time was found, $F(2,180)=72.95$, $p<.01$, $d=1.07$. Post hoc analysis using Fisher’s LSD method revealed that production accuracy increased from one to four exposures, as well as from one exposure to retention. Similar to child participants, accuracy did not increase between four exposures and retention. The interaction of time and ND was not significant, $F(2,180)=0.85$, $p=.43$, $d=.41$. That is, words with low ND and high ND improved similarly over time. Figure 1 illustrates segmental production accuracy by group, condition, and point in time.

**Summary of Results**

Children and adults repeated novel words with high ND more accurately than those with low ND. This effect was not found during word learning, however. Adults learned the phonological and semantic representations of novel words with low and high ND to a similar degree, whereas children learned words with low ND best.

![Figure 1 Mean production accuracy for word learning by age, condition, and time](image-url)
Discussion
The goal of the present experiment was to determine how existing items in the developing and fully developed lexicon interact with the acquisition of nonwords: competitively, facilitatively, or neither. Prior studies of this nature have consistently investigated ND in tandem with another robust variable, PP. Therefore, the current study, which controlled for a variety of factors including PP, sought to investigate independent effects of ND on word learning in children and adults, using the same task. This information can expand our understanding of the lexicon, as well as increase our knowledge of which variables might affect the learning of novel phonological and semantic representations. Results will, first, be discussed for the baseline repetition element of the task, followed by the learning components.

Baseline: High ND > Low ND
In order to assess the initial production status of a word prior to assignment of semantic information, a baseline repetition task was administered. Despite notable differences in lexicon size, children and adults appeared to treat ND similarly. Both groups repeated nonwords with high ND more accurately than those with low ND, suggesting that phonological representations after a single exposure were learned better for nonwords with high ND versus low ND. It appears that items in the lexicon facilitate repetition of a nonword, since nonwords with many similar-sounding forms were produced most accurately. This may also relate to working memory contributions, as mentioned earlier.

Developmental Differences: ND during Learning
Although children and adults demonstrated similar baseline effects of ND, learning performance differentiated the two groups. Adults in the current study learned words in each condition (low ND, high ND) to a similar degree, contrary to previous work (Storkel et al., 2006). This result was consistent at each point in time. Hence, items in the lexicon did not appear to act as competitors or facilitators for a novel word. Rather, adults appeared to be unaffected by the experimental manipulation; the phonological representations for nonwords with low ND and high ND were learned to a similar degree. One possible reason for the differing results found in this study may relate to controlling for PP. Recall that Storkel et al. (2006) found facilitative effects of high ND only on words also containing high PP. In the present study, PP was not significantly different between words with low ND and high ND, thereby removing this interaction. It appears, then, that ND may not be a robust variable on its own for adult word learning, once other variables are controlled.
Children, in contrast, were affected by the ND of the stimuli. Words with low ND were learned better than those with high ND, suggesting that phonological representations for novel forms with low ND are learned faster than those with high ND. This finding was most evident in later stages of learning (following four exposures). This is a novel finding for child participants, given that productive learning has not yet been reported following a single exposure. Lexical competition may account for this better performance on words with low ND. Nonwords with fewer existing competitors might be more perceptually salient, triggering word learning earlier, as found in Hoover et al. (2010). Nevertheless, this would not explain the initial productive advantage for words with high ND during repetition. This discrepancy is considered next.

Based on the current results, children and adults treat ND differently from one another during novel word learning. Aspects of vocabulary size might be relevant, given that the adult lexicon is nearly twice as large as a developing lexicon (Goulden, Nation & Read, 1990). This quantitative difference could have influenced how ND affected learning. Perhaps larger lexicons are not affected by lexical competition during word learning. Likewise, the nature of a system that has acquired 17,000+ words (Goulden et al., 1990) is worth considering. Adults possess an impressive toolbox of considerable memory capacity, speech production mastery, and conscious learning strategies (i.e., mnemonic devices). Children, on the contrary, are in the process of mastering lexical acquisition and may still be developing their word-learning abilities; moreover, word learning may remain a relatively tacit process during language acquisition. Perhaps once the lexicon reaches a critical size (e.g., in adulthood), the influence of ND is no longer discernible.

**Children’s Repetitions vs. Learning: Opposite Effects of ND**

While children showed an initial advantage for repeating words with high rather than low ND at baseline, the opposite was found for the learning of these words over time. Is it possible that effects of ND could be task-dependent? Lexical competition potentially does not occur during nonword repetition, since such forms do not yet exist in the lexicon. Hence, there may not be any “threat” resulting in competition. Indeed, Vitevitch and Luce (1998) found that inhibitory effects of ND (low ND > high ND) were only found in tasks using real words, not nonwords. Nonetheless, incorporating the same form into the lexicon via semantic association could result in lexical competition. Assigning semantic information to a high ND nonword arguably makes the nonword more “wordlike”, which, in turn, might delay its acquisition relative to low ND nonwords. If this is true, then novel words that are phonologically similar
to few other existing forms would have less competition. Phonological representations of novel words with low ND might then be learned sooner than words with high ND. This could explain the contrasting findings of repetition and learning.

**Clinical Implications**
Apart from the theoretical contributions of the present findings, there are also clinical implications related to lexical acquisition. For children with impoverished vocabularies, targeting more words with low versus high ND could increase expressive vocabulary in a relatively timely manner. Also, based on the current results, it is likely that words with high ND may require additional exposures for a child to learn them. This information can also guide vocabulary treatment in selecting optimal amounts of exposure. Since words with high ND phonologically resemble many other items in the lexicon, their acquisition may be delayed compared to forms with fewer competing items.

**Limitations**
Given the relative complexity of the task for young children, it is difficult to extract how ND might have impacted learning for some children upon additional exposures. Twelve children specifically were unable to learn any of the words, regardless of condition. Note that this was unrelated to chronological age or vocabulary size (as indexed by the PPVT, Dunn & Dunn, 1997). A second limitation relates to the age of the child participants. Unlike adults, this group was illiterate. It remains possible that orthographic influences (e.g., spelling) may have altered effects of ND during word learning for adults, despite the absence of written cues in any part of the task. In conclusion, the present findings must not be generalized to all children but, rather, to a developmental age group of preschoolers with typical language development.

**Conclusions**
The current study found a main effect of ND during repetition in both children and adults, as well as an effect of ND during children’s word learning. At baseline, novel words with high ND were repeated more accurately than those with low ND. This revealed a facilitatory influence of the lexicon during nonword repetition. Once semantic association occurred, however, children learned more words with low versus high ND, suggesting an inhibitory influence of ND on word learning. Items in the lexicon appeared to act as competitors to a novel word.
**Future Directions**

Further investigations of this nature should include clinical populations, such as children and adults with language impairment and/or phonological deficits. If similar results are found as reported here, ND might be considered as a treatment factor. Research should also be conducted with different age groups, such as school-aged children. If ND ceases to influence word learning at a certain point during development, as was suggested here based on the adult results, it would be informative to know when this occurs and why.

**Acknowledgements**

Thank you to the participants in the study, to Stephanie Burgener for lending her voice to the project, and to Alexandra Fish, Casey Alexander, Kelly Thorp, Kara Smith, and Adam Jacobson for lending their ears and eyes to the analyses.

**References**


## Appendix: Stimuli control

<table>
<thead>
<tr>
<th>Variable</th>
<th>Means and Standard Deviations of Low Neighborhood Density Stimuli</th>
<th>Means and Standard Deviations of High Neighborhood Density Stimuli</th>
<th>Statistic</th>
</tr>
</thead>
<tbody>
<tr>
<td>Neighborhood frequency</td>
<td>67.34 (69.76)</td>
<td>162.52 (187.93)</td>
<td>$F(1,6)=0.14$, $p=.38$</td>
</tr>
<tr>
<td>Positional segment frequency</td>
<td>0.11 (0.03)</td>
<td>0.16 (0.03)</td>
<td>$F(1,6)=3.28$, $p=.12$</td>
</tr>
<tr>
<td>Biphone frequency</td>
<td>0.002 (0.002)</td>
<td>0.005 (0.003)</td>
<td>$F(1,6)=2.37$, $p=.17$</td>
</tr>
<tr>
<td>Duration</td>
<td>Isolation: 554 (77)</td>
<td>Isolation: 603 (79)</td>
<td>$F(1,38)=0.39$, $p=.53$</td>
</tr>
<tr>
<td></td>
<td>Narrative: 512 (73)</td>
<td>Narrative: 518 (66)</td>
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</tbody>
</table>
Implications in Aizuchi Research: What Can Japanese L1 Participants Tell Researchers? Responses from a Pilot Study

Todd Allen

Abstract
The aim of this article is to explore the responses given by Japanese L1 participants in a pilot study on aizuchi and question whether or not these responses can aid in the research of aizuchi behaviour. This article defines aizuchi (‘listener response’) as a linguistic device that is utilised by the listener to send verbal and non-verbal cues to the speaker. These cues include ‘yeah’, ‘yes’ and head nodding. If participant responses about aizuchi are helpful to researchers, in what ways do they inform researchers’ understanding of aizuchi behaviour or the way in which aizuchi behaviour is analysed? This article draws upon insights gained through a pilot study where the responses made by participants are examined. Participant responses reveal that there are both sociocultural and conversation management strategies involved in the form, frequency, function and, more interestingly, intention of aizuchi behaviour. This article also suggests Interactional Sociolinguistics as a possible theoretical framework in order to analyse aizuchi behaviour. The findings of this research conclude that participant responses do, in fact, provide insights into aizuchi research and, also, signposts other important areas of aizuchi behaviour, such as ‘aizuchi etiquette’ training found in some Japanese companies, the definition of aizuchi itself, the role of the listener and the cultural perceptions of communication in Japanese.

Keywords
aizuchi, awareness, interactional sociolinguistics, pilot study

Introduction
This paper investigates current research completed in the area of what is known as aizuchi (‘listener response’) in Japanese, and compares this research with participant responses made during a pilot study, undertaken as part of a research higher degree thesis. Drawing comparisons between what participants say and previous research,
this paper will highlight the issues and implications of this research, and provide future direction for those wishing to investigate *aizuchi* behaviour.

The first aim of this study is to investigate responses made by Japanese L1 speakers during an interview in which questions regarding *aizuchi* behaviour were asked. The second aim is to determine whether or not these responses can inform researchers about *aizuchi* behaviour. Specifically, to determine whether or not these responses extend researchers’ understanding about participants’ intentions and orientations in utilizing *aizuchi* in interaction.

The research questions for this study are:

- What do participants report when interviewed about *aizuchi* behaviour?
- What value do these responses have for researchers?

It is hypothesised that participants will provide insights into *aizuchi* behaviour that have not been explored. The responses made about *aizuchi* and associated behaviour will demonstrate the importance of a multi-faceted approach in methodology in *aizuchi* research and the perceptions of communication in the Japanese context more generally. This multi-faceted approach comes from the Interactional Sociolinguistic framework, which combines an ethnographic approach to interaction along with participant interviews. This framework highlights the importance of meta-linguistic data on analysing interactional behaviour.

This paper will provide an overview of *aizuchi* behaviour from previous research in two areas. Firstly, this paper will explore the general measurement of *aizuchi* behaviour. Secondly, this paper will demonstrate the two approaches to *aizuchi* behaviour (i.e., the conversation analytic perspective and the emic perspective). The methodological framework and procedures are discussed in section three. Data analysis and the discussion are found in section four. Lastly, section five concludes the paper by providing answers to the research questions and suggestions for future directions of the research.

Before moving on to the definition and translation of *aizuchi*, it is necessary to discuss the use and value of interview data (or metadata) from an Interactional Sociolinguistic (IS) perspective, as this paper relies on self-report data similar to IS. The Interactional Sociolinguistic method was introduced by Gumperz (1982) and combines interactional data with metalinguistic data. According to Gumperz (2001),
‘[Interactional Sociolinguistics] is an approach to discourse analysis that has its origin in the search for replicable methods of qualitative analysis that account for our ability to interpret what participants intend to convey in everyday communicative practice’ (p. 215). What is more motivating is what Figueroa claims in her book on IS and meta-theory:

[…] it is based on a social theory of language which rejects the separation of language from social context. In addition, it is a sociolinguistic theory which is concerned primarily with knowledge – how linguistic behaviour creates interpretation, how intention leads to linguistic behaviour, how successful communication is related to sociolinguistic knowledge (1994: 113)

Self-report data (metadata), then, becomes important because, as noted by Figueroa, it provides sociolinguistic knowledge, which expresses how the interlocutors interpret the interaction and how actual linguistic action performed by the interlocutors may be the result of intention.

**Definition & Translation of Aizuchi**

The term *aizuchi* is one that is difficult to define, with scholars continuing to struggle with a suitable and consistent definition. It is difficult to translate the word *aizuchi* accurately into the English language and associated linguistic and cultural behaviours because English does not have a commonplace word for *aizuchi* (Kita & Ide, 2007). Instead, scholars working in both the Conversation Analysis (CA) and emic approaches to interaction have developed linguistic terminology to help explain *aizuchi*. For example, *aizuchi* has been termed ‘backchannel’ (Yngve, 1970), ‘reactive token’ (Clancy, Thompson, Suzuki & Tao, 1996), and ‘response token’ (Gardner, 2001). It is interesting, however, that the word *aizuchi* is known by all Japanese speakers and is used in everyday conversations in Japan (Kita & Ide, 2007).

This paper will continue to use the term *aizuchi* to distinguish it from other terminology that western scholars have coined in linguistic terms. The author defines *aizuchi* here as the Japanese communicative act of active listening and engagement with the speaker. By doing so, this paper will attempt to capture the sociocultural implications of *aizuchi*, insofar that it captures the culturally shaped perception of communication or the fostering of the “idealized” behaviours of the listener, rather than the semiotic cues a listener sends in response to the speaker in interaction.
As mentioned, the various definitions found in previous literature suggest that there are considerable differences in what *aizuchi* is within a linguistic framework. This paper makes a distinction here that there are two ways of viewing *aizuchi*: from a linguistic sense, i.e., *aizuchi* is a conversation management device; and from the everyday use of the word, i.e., that it shows attention, encourages the speaker to continue and signals that you are being a polite listener. For example, in the Tobira Gateway to Advanced Japanese (Oka, Tsutsui & Kondo, 2009) *aizuchi* is defined as:

日本語では会話をスムーズに進めるために「あいづちをうつ」ということをします。 「はい／ええ」「うん」「そうですか」など色々ありますが、これらは“yes I’m following you; please continue.”という意味で、“yes I agree.”という意味ではありません.(In the Japanese language, in order to carry on the conversation smoothly you use what is called ‘aizuchi’. ‘Yes/yeah’, ‘yep’ and ‘is that so?’ and various other *aizuchi* forms, which means ‘yes I’m following you’ and ‘please continue’. However it does not mean ‘yes, I agree’. (author’s translation, p. 23)

Linguistic frameworks have provided other, more detailed, definitions for the term *aizuchi*. *Aizuchi* occurs when the listener utters or gestures short semiotic cues in reaction or response to the speaker and does not take the floor during interaction with the speaker (Maynard, 1986, 1987; Kita & Ide, 2007). Within the Conversation Analysis framework, *aizuchi* has been labelled as ‘listener response tokens’ with further sub-categories of ‘minimal response tokens’ (Gardner, 2001; Hayashi & Yoon, 2009).

In recent years, the term ‘backchannel’ has received criticism from scholars investigating listener responses in both English and Japanese. In particular, criticism has arisen in the translation of *aizuchi* as a ‘backchannel’ in English. Scholars are now suggesting that backchannel be avoided on the grounds of ambiguity (Drummond & Hopper, 1993; Sacks, Schegloff & Jefferson, 1974) and avoiding the confusion of sociocultural concepts from one language and translating them into another (Fujimoto, 2007). Generally speaking, however, non-specific terminology such as ‘listener response’ or ‘listener behaviour’ should be used in place of the term ‘backchannel’, as it places emphasis on the listener and the actions of the listener in interaction. Fujimoto (2007) states that:
It is even more disappointing that many have taken up the Japanese word, *aizuchi*, and then used it interchangeably with *backchannel*. This act has effectively masked some very interesting qualitative differences between the listener behaviour in English and that in Japanese (p. 49).

As this paper is only concerned with the Japanese language, it will continue to use the term *aizuchi*. This is also because of Fujimoto’s (2007) suggestion that, if other researchers investigating listener behaviour in Japanese have used the term *aizuchi*, there is no reason why future researchers cannot retain the same term.

**Overview of *Aizuchi* Research**

In this overview of *aizuchi* behaviour, the author explores *aizuchi* in two ways. Firstly, the general measurement of *aizuchi* will be explored. Secondly, the two approaches to *aizuchi* research (i.e., the conversation analytic perspective and the emic perspective) will be discussed.

**General Measurement of Aizuchi**

This section will focus on general *aizuchi* research, such as the location, form, frequency and function of *aizuchi* behaviour and the associated studies, which investigated the measurement of this linguistic phenomenon in the Japanese language.

| Table 1 Example of phrasal and non-lexical *aizuchi* (LoCastro, 1987: 108) |
|---------------------------------|-----------------|-----------------|
| **Japanese**                   | **Phrasal**     | **Non-Lexical** |
| *Sou desu ka?*                 | *Yappari*       | *(Ne, Na, Ka, Yo)* |
| *Hontou ni*                    | *Usou!*         | *(Un, Ee, Fuun)* |
| **English**                    | **Oh really?**  | **Discourse (particles) markers.** |
| *As I thought*                 | *Truthfully?*   | *Yeah, Uh-huh, Mm.* |
| *You lie!*                     |                 |                 |

*Aizuchi* can occur in two positions within an utterance. The first place is intersentential (i.e., within the utterance or sentence) and sentence-final (i.e., at the end of the utterance or sentence). Further, scholars have categorised *aizuchi* as phrasal (whole words or short statements which carry semantic meaning) and non-lexical (non-meaning words or discourse/particle markers). Table 1 describes the types of
phrasal and non-lexical *aizuchi* (with English translation), in which LoCastro (1987) provides examples of 37 different phrasal and non-lexical *aizuchi* tokens in her study.

Moving forward, it is important that this paper outlines the functions *aizuchi* plays in conversational interaction. In addition to discussing verbal *aizuchi* behaviour, this paper will also outline the functions of non-verbal *aizuchi*. Forms of non-verbal *aizuchi* include head nods, eye gaze, smiling, silence and other facial expressions. Table 2 outlines the functions of verbal and non-verbal *aizuchi* in interaction:

<table>
<thead>
<tr>
<th>Functions of Verbal <em>Aizuchi</em></th>
<th>Functions of Non-Verbal <em>Aizuchi</em></th>
</tr>
</thead>
<tbody>
<tr>
<td>Continuer</td>
<td>Affirmation</td>
</tr>
<tr>
<td>Display of Understanding</td>
<td>Pre-Turn and Turn Claim</td>
</tr>
<tr>
<td>Support towards the Speaker</td>
<td>Claim for Turn-End and Turn Transition</td>
</tr>
<tr>
<td>Agreement</td>
<td>Turn Transition and Period Filter</td>
</tr>
<tr>
<td>Strong Emotional Response</td>
<td>Backchannel</td>
</tr>
<tr>
<td>Minor Addition, Correction or Request for Information</td>
<td>Rhythm Taking</td>
</tr>
</tbody>
</table>

It should be noted that these functions relate to both the conversation management and sociocultural perspectives. From previous literature (i.e., Clancy et al., 1996; Kita & Ide, 2007; White, 1989), these functions seem consistent and, as such, have been included here.

<table>
<thead>
<tr>
<th>English</th>
<th>Japanese</th>
</tr>
</thead>
<tbody>
<tr>
<td>“Yeah”</td>
<td>“hai” “ee”</td>
</tr>
<tr>
<td>“Right”</td>
<td>“sou desune” “sou” “sou dane” “sou dana” “sou” “sou dane” “sou dayo”</td>
</tr>
<tr>
<td>“Uh-huh”</td>
<td>“ee ee” “un un” “aa aa” “aa aa” “ee ee” “un un”</td>
</tr>
</tbody>
</table>

Following the functions of verbal and non-verbal *aizuchi*, this paper will also outline the forms of *aizuchi* in interaction at the level of informal, formal, masculine and feminine, and gender-neutral forms. Masculine, feminine and gender-neutral forms are defined here as *aizuchi* behaviour typically uttered by a specific gender, as well as those that occur between both genders. Discussed in greater depth in a later
section, Tajima (2001) claims that interlocutors use *aizuchi* to mitigate their psychological distance, as a type of sociolinguistic strategy. In her paper, Tajima (2001) also provides Table 3, showing the register and gender scale of *aizuchi* behaviour.

The last point to be discussed concerning *aizuchi* behaviour is the frequency with which *aizuchi* occurs in interaction. Previous studies have noted that *aizuchi* is highly frequent in Japanese conversation and concluded that, when compared with the English language, *aizuchi* is 2.6 times more frequent (Maynard, 1986; Kita & Ide, 2007). Furthermore, studies have investigated either phrasal or non-lexical or both instances of *aizuchi* behaviour, as well as particular forms of *aizuchi* such as “un”, “ee”, “hai”, and non-verbal *aizuchi* instances, such as head nods. Previous research has also compared instances of *aizuchi* form and frequency between genders. To demonstrate the vast amount of research focusing on the frequency with which *aizuchi* occurs, Table 4 highlights the type of *aizuchi* analysed, the frequency with which it occurred and important notes regarding the study:

<table>
<thead>
<tr>
<th>Source</th>
<th>Aizuchi Type</th>
<th>Frequency</th>
</tr>
</thead>
<tbody>
<tr>
<td>Maynard, 1986</td>
<td>Turn internal verbal and non-verbal <em>aizuchi</em></td>
<td>227 <em>aizuchi</em> utterances 76 head nods functioning as <em>aizuchi</em> occurring alone</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Maynard, 1987</td>
<td>Head movement</td>
<td>Total number of head movements – 376. Males producing <em>aizuchi</em> head movement – 36% Females producing <em>aizuchi</em> head movement – 38%</td>
</tr>
<tr>
<td>White, 1989</td>
<td>Verbal <em>aizuchi</em> uttered by Japanese participants speaking English</td>
<td>Total number of <em>aizuchi</em> instances – 68.3 Mmhm occurred 43%, yeah occurred 19%, uh-huh occurred 18%, oh occurred 14%, hmm occurred 6% and short statement varieties occurred 26%</td>
</tr>
<tr>
<td>Clancy et al., 1996</td>
<td>Verbal <em>aizuchi</em> or ‘reactive token’</td>
<td>The mean of <em>aizuchi</em> produced by Japanese participants was 68.3%</td>
</tr>
</tbody>
</table>

This section has provided an overview of previous research with regard to general *aizuchi* behaviour. The following section will examine previous research relating to the conversation analytic perspective of *aizuchi* research.
**Approaches to Aizuchi Behaviour**

Two methodological perspectives have investigated the role of the listener and associated listener responses. These two perspectives are the conversation analytic perspective and the emic perspective. This article will report the findings of both perspectives. This article will not debate which method is superior. The reason for the debate, however, is that CA analysts claim that researchers cannot be sure whether or not interlocutors actually orient themselves toward sociocultural ideologies (Hayashi & Yoon, 2009). For CA analysts, orientation cannot be found within the interaction itself, which relates to the nature of CA (the nature of CA is explored below). Pomerantz (2012), in her response to an article by Waring, Creider, Tarpey and Black (2012) has discussed this very issue, and the author of this paper agrees that the type of methodological practice one selects in order to analyse data is determined by the research aim and research questions associated with the study. However, as this paper is examining interview data in relation to *aizuchi*, it is necessary to examine both perspectives.

Conversation Analysis (CA) is a methodology that examines interactional instances of particular aspects of talk *in situ* (Pomerantz & Fehr, 2011). Scholars using the method of CA analyse data within the local interaction, focusing on the mechanics of conversation, the basic structures of the interaction such as turn-organization (i.e., turn-taking and turn-construction units) and the sequence of talk (i.e., adjacency pairs) in a bottom-up fashion. The methodological practice of CA and *aizuchi* research has resulted in advances in the way in which researchers view the function of *aizuchi* in interaction as a conversation management device.

Particular studies have demonstrated how *aizuchi* works as a conversation management device. Mori (2006) comprehensively analysed the way in which “*hee*” (described by Mori (2006) as a ‘newsworthy’ token) is used in Japanese conversation, in addition to the prosodic values of “*hee*” found within the data. A ‘newsworthy’ token is described as a response ‘to the prior informing’ (p. 1184). In his study, Mori (2006) found that, concerning “*hee*”, ‘additional turn component accomplish two different actions within a single turn space […] a new sequence by shifting the topical focus’ (p. 1184).

In examining “*ehi*”, Hayashi (2008) found that this particular response token functioned by marking a noticing of departure and ‘is used by its producer to propose a noticing of something in the talk or in the interaction’s environment that departs
from his/her pre-existing knowledge, supposition, expectation, or orientation’ (p. 2101).

Lastly, Hayashi and Yoon (2009) detail how aizuchi functions in the construction of turns. More specifically, Hayashi and Yoon (2009) investigate minimal vocalizations, such as “un” (“yeah”), and describe their function in interaction. Hayashi and Yoon (2009) describe and term these vocalizations as ‘third-position deployment of minimal response tokens’ (p. 267). In their study, they provide two conversational activities achieved through minimal response tokens used in the third position: ‘to bring closure to the topic/activity-so-far by proposing the speaker’s imminent disengagement from it’ and ‘to bring closure to a syntactically incomplete turn by indicating that the speaker is not going to continue with the turn so far’ (p. 267).

In the emic approach to aizuchi, researchers suggest that the cultural notion of omoiyari (“consideration”) better describes the form, frequency and function of aizuchi behaviour (for example, see Maynard, 1986, 1987, 1990; LoCastro, 1987; Clancy et al., 1996; Kita & Ide, 2007). This emic cultural claim is justified by the Japanese concept of self; Markus and Kitayama (1991) describe how a Japanese interlocutor may see himself/herself ‘[…] as part of an encompassing social relationship and recognizing that one’s behaviour is determined, contingent on, and, to a large extent organized by what the actor perceives to be the thoughts, feelings, and action of others in the relationship’ (p. 1252).

In Kita and Ide’s (2007) comprehensive study on aizuchi, which focuses on general aizuchi behaviour and demonstrates the cultural perception of Japanese listener behaviour, they explain that a listener may pre-empt particular conversational constructions, such as a turn-holder’s desire to continue and use “considerate aizuchi” to permit the speaker to continue. Kita and Ide (2007) claim, as a result, aizuchi behaviour is a manifestation of such conversational rules and suggest that the ‘Japanese conversation puts emphasis on mutual coordination and social bonds’ (p. 1252).

Other studies have also suggested that aizuchi is constructed through the emic concept of omoiyari. For example, in their study on the development of a native Japanese-speaking child, Miyata and Nisisawa (2007) claim that intrasentential aizuchi allows the hearer to display ‘empathy [omoiyari] towards the speaker by showing consideration for the possibility of feelings of insecurity in trying to express
his or her thoughts or to tell a story’ (p. 1272).

In her study of aizuchi as a conversational routine, LoCastro (1987) argues that ‘the emphasis on maintaining group harmony and on having smooth relations would probably cause the speaker-listeners to use more aizuchi to show willingness to co-operate in the conversation and to show support of and attach value to the speaker on the part of the listener’ (p. 110). This claim highlights the relationship between language used in interaction and the emic cultural notions attached to language use such as omoi yari. LoCastro’s study also investigated politeness theory and the concept of aizuchi similar to Tajima (2001) and Cutrone (2011).

Tajima (2001) and Cutrone (2011) both claim that there are two functions of aizuchi in interaction utilized by native Japanese speakers. These functions are indexical presupposition and indexical creativity. ‘Indexical presupposition refers to the societal expectations that Japanese speakers choose certain backchannel forms based on age, gender, status of interlocutors, and the formality of the conversational settings’ (Cutrone, 2011: 55). Further, indexical creativity refers to the way in which native Japanese speakers mitigate face-threatening acts through the use of aizuchi in interaction.

This section has provided the discoveries made by both the conversation analytic and emic perspectives on aizuchi behaviour. The next section will focus on the methodology employed by this paper in examining aizuchi behaviour and drawing comparisons between previous research and participant responses regarding their aizuchi behaviour and methodological discussion.

Methodology
The data were collected in part during a pilot study conducted prior to the main data-gathering phase of a research higher degree project. Within the pilot study, two participants volunteered to be audio and video recorded engaging in casual conversation. The researcher was present during the casual interaction and made notes on particular aizuchi forms, functions and frequencies. This casual conversation was conducted for 17 minutes. After the casual interaction, participants were interviewed together and asked questions about behaviour exhibited during the casual interaction and aizuchi behaviour in general.

The interview data of the experiment will be used in this paper, in which responses regarding aizuchi and listening behaviour more generally will be analysed.
in section four. In the analysis, the paper will also compare and contrast these responses with previous literature to determine whether or not these responses match the current level of understanding – in particular, the role of the listener – in the Japanese context.

The participants were assigned as ‘Participant One’ and ‘Participant Two’. Participant One is a female born and raised in the Tokyo area and, at the time of the experiment, was 29 years old. Participant Two was also born and raised in the Tokyo area, is female and, at the time of the experiment, was 26 years old. Participant One has been in Brisbane for one and a half years and is currently studying at the University of Queensland in a program other than languages and linguistics. Participant Two has been in Brisbane for eight months studying at the University of Queensland in a program other than Languages and Linguistics. Both of these students are friends, which allowed for a casual conversation to occur.

Before progressing to the data analysis and discussion, it is important to note that possible changes to gender of the participants may produce different outcomes in the data. As the two participants in this study are female, their responses may not be the same as if male participants were interviewed. Studies that have attempted to assign gender to aizuchi forms suggested that this is a difficult task (see Tajima, 2001). Other studies have examined the differences in aizuchi behaviour in single and mixed gender dyads (see Kogure, 2003). The reason for investigating aizuchi and gender is because gender is an important variable that could have a direct effect on language use and different genders may have different sociocultural rules and expectations governing their behaviour.

Data Analysis and Discussion

In this section, the paper focuses on the questions asked by the researcher and the responses given by the participants. As the researcher was present during the interaction, notes were made on particular aspects of the conversation; in particular, the form, frequency and function of the participants’ aizuchi behaviour. Questions were then focused on the participants’ beliefs about their own and each other’s aizuchi behaviour.

Following each topic, this section will detail the questions asked by the researcher and why, in addition to the responses made by the participants and the relationship between these responses and previous literature. Each question was
directed at both participants. By asking both participants, this allowed the researcher to obtain information regarding aizuchi behaviour, and highlights both consistency and idiosyncrasy in their responses.

Five topics are discussed with the participants and their responses are provided below. These five topics were chosen because they target important concepts related to aizuchi research. For example, each topic discussed relates to the gaps in the literature (e.g., the definition and understanding of aizuchi, whether interlocutors use particular aizuchi as a conscious strategy, etc.).

**The Definition of Aizuchi**

The first question asked by the researcher was “what does aizuchi mean to you?” This question was asked for two reasons: to gain an understanding of what participants think aizuchi actually is, in order to highlight the differences compared to definitions presented above; and to highlight the idiosyncratic differences in the definitions the participants have provided. Participant One provided this answer: “I want to make her feel safe”.

This response highlights a slight difference compared with other definitions. Participant One does not use the words “smooth communication” or “short statements made by the listener while the speaker has the floor”. Instead, it points to a version of omoiyari (“consideration”), a reflection on the perception of communication in the Japanese context. It appears as if aizuchi, in the participant’s mind, is a type of cultural conversational strategy, whereby using aizuchi appropriately in conversation has the ability to make the other interlocutor “feel safe”.

This response provides a qualitative difference between what aizuchi is to the participant and the definitions provided by linguists. It highlights that aizuchi is not only a listener response but a positive listener response governed by sociocultural norms and values. This statement was followed by Participant Two responding with the Japanese adjective/noun 安心 (“peace of mind, relief”). In other words, the participant found that her definition and function of aizuchi was to ensure that the person felt comfortable and safe during the interaction, further adding to the argument that the definition of aizuchi should be specifically redefined to include a positive connotation.
Highlighting further the idiosyncrasy of definitions amongst participants, Participant One suggested that *aizuchi* means, “to show my understanding. I understand you. I will understand you” and “to make the conversation more fluent”. This was followed up by “to show that we have something in common, and we understand each other”.

In analyzing the statements made by Participant One, there is an element of mechanical understanding in the definition provided. Firstly, “to show my understanding […]” refers to the function of particular *aizuchi* working as acknowledgement tokens. It explains an attitudinal function of *aizuchi* that the participant employs to show the speaker that the listener will do their best to understand the speaker. Secondly, “to make the conversation more fluent” refers to both *aizuchi* functioning as continuers and relates to the definition of *aizuchi* (mentioned earlier). Thirdly however, there is a further shift away from the mechanical aspect with the statement “to show that we have something in common, and we understand each other”. This seems to refer to the concept of *omoiyari*, which, as Kita and Ide (2007) suggest, is the establishment and continuation of social bonds through the use of positive and coordinated *aizuchi*.

**Awareness and Socialization of Aizuchi Behaviour**

The second question put forward to the participants was “are you aware of your *aizuchi* behaviour?” This question was asked in order to determine how aware or conscious the participants thought they were of their own *aizuchi* behaviour and each partner’s *aizuchi* behaviour in the interaction. In response to this question, Participant Two answered with “actually I learnt at my office to make nods or like aizuchi, which shows that people will feel more comfortable, so maybe I am very conscious about that”. This statement emphasizes two important points: that interlocutors are somewhat aware or sensitive of their *aizuchi* behaviour in interaction; and the importance of *aizuchi* in the Japanese context through the teaching of such linguistic behaviours through company training. The participant indicated that she underwent explicit company training that involved politeness (honorific) and *aizuchi* instruction. For L1 speakers, it would be assumed that *aizuchi* behaviour is acquired naturally. However, the fact that there has been an attempt to tutor speakers about it, as well, is anecdotal evidence for the fact that it is a valued element in communication. The tutoring has raised the consciousness of the participant. It is worth pointing out that
this has influenced the participant’s ideas and, as the participant claims, probably her behaviour as well.

In terms of awareness, it was revealed that the participants were aware of their *aizuchi* behaviour as well as the other participant’s *aizuchi* behaviour. It was revealed that participants are only aware of the form and, to some degree, the sociocultural functions of *aizuchi*. For example, participants claim that they are aware of whether or not they are showing enough attention to the speaker’s utterances. They are not aware, however, of the frequency with which *aizuchi* occurs. A follow-up question regarding frequency was put forward to both participants and both agreed that they were not aware of the frequency with which *aizuchi* occurs.

Point two raises an important issue regarding the attention paid to *aizuchi* in a workplace setting. According to Participant Two, this *aizuchi* training taught the participant how to use *aizuchi* appropriately. Within business contexts, Participant Two revealed that head nodding would be much more common and more frequent than verbalising *aizuchi*.

To the author’s knowledge, there have been no studies that have investigated the teaching pedagogies in regard to *aizuchi* and native speakers or the success of such company etiquette training. This, however, points to further sociocultural influences on the interlocutor, where interlocutors were taught to be aware of their *aizuchi* behaviour and act in both linguistically and culturally appropriate ways within various business contexts.

**Contextual Influence**

The question raised by the researcher was “is your *aizuchi* behaviour dependent upon context or the relationship between other speakers/listeners?” This question was asked in order to gain an understanding of how context may or may not influence the participant’s *aizuchi* behaviour. This question was hinting at possible influences of sociocultural notions (such as *tachiba* “the place one stands”, *wakimae* “discernment” and *omoiyari* “consideration”) on the participant’s *aizuchi* behaviour. Participant Two replied with “we do not use “un” to *sempai* (“seniors”) or to the *sensei* (“teacher”), we say “hai” (“yes”) – we are aware of that”.

The statement by Participant Two gives us two possible insights into how the participant views *aizuchi* behaviour. The first possibility is that there is recognition or awareness of *tachiba* within interaction: “we do not use “un” to *sempai* (“seniors”) or
to the sensei (“teacher”). Secondly, the statement “we say “hai” (“yes”)” indicates some level of discernment or wakimae on the behalf of the participant during interaction. The participant stating that they are aware indicates that sociocultural notions do influence their aizuchi behaviour; in particular, the form.

Appropriate Aizuchi Use

The question asked by the researcher to address the topic of aizuchi and appropriate use was “what would happen if a person does not use aizuchi appropriately in interaction?” This question was asked in order to gain an understanding of how the participants would feel if aizuchi was not used appropriately or at all in interaction. This relates to the role of the listener and the value of aizuchi in interaction. In response to this question, Participant Two replied with “it would feel strange”.

A follow-up question was then asked about how the participants would feel if a non-native speaker of Japanese did not use aizuchi appropriately in interaction. Both participants responded by saying that it would be fine, as they would have different expectations of a non-native Japanese speaker. This highlights the role of the listener in interaction and, in particular, the sociocultural expectations Japanese interactants rely on during interaction. As has been argued above, there has been considerable research regarding linguistic politeness of the speaker and speech acts made by the speaker in interaction but very few studies investigating “listener politeness” and “listener acts” in interaction.

Aizuchi used as a Linguistic Strategy

The last question raised by the researcher in relation to whether participants believe their aizuchi is used as a linguistic strategy was “do you use aizuchi as a particular linguistic strategy?” This question was asked in order to gain an understanding of whether or not participants use their aizuchi as a type of conversational strategy and, if so, in what way would participants use it? Participant Two replied with, “I have something different in my mind here, but before saying that, I might say “wakaru, wakaru” and then move on to the next topic”.

As other studies have claimed (Hayashi, 2008; Hayashi & Yoon, 2009), aizuchi is used as a conversational strategy other than that of continuation, acknowledgement or to promote the fluidity of conversation. The participant claims that particular short statements, such as “wakaru”, “wakaru” (“I understand, I
understand”) are methods of negotiating topics and can be used as negotiating turns. These short statements are used to signpost to the speaker that the listener wants to either shift the topic or take the floor. Although “wakaru” (the verb “to understand”) is not a typical aizuchi form, it could function as a phrasal aizuchi which signals to the speaker explicit understanding, similar to other phrasal aizuchi, such as “naruhodo” (“I see”) or “yappari” (“as I thought”).

This section has provided participant statements regarding their own aizuchi behaviour, including individual definitions of aizuchi and whether the participants believe they orient themselves towards sociocultural notions or use aizuchi as a conversation management device. As exemplified above, both perspectives have been revealed. The author concedes the limitations of this study being based on a small amount of pilot study data, in which the pilot study was undertaken in order to test the efficacy of the research instruments and methodology. The next section will focus on the issues, implications and future directions of aizuchi research.

Conclusion
The first aspect requiring further research is the need for a clearer definition of aizuchi. This article presents the need for an alternative definition of aizuchi, as there seems to be a divide in what participants define as aizuchi and how researchers have termed listener responses as aizuchi. In other words, participants provided definitions of what they thought aizuchi was. Neither participant described aizuchi in a mechanical or technical sense; rather, it was a positive attribute to conversation and was bound by sociocultural norms and rules. Further research is needed on this subject involving the participants themselves to aid researchers in providing accurate terminology that encompasses not only what aizuchi does in conversation but, also, what participants themselves believe aizuchi to be. The research in this paper highlights the need for further studies involving more participants to gain more qualitative data. The data found in this study provides valuable insights into aizuchi behaviour and, as such, more data could demonstrate a consistency in responses, leading to dependable and replicable metadata analysis.

To answer the first research question (What do participants report when interviewed about aizuchi behaviour?), the data analysis and discussion section details what participants report when asked about their own aizuchi behaviour. This section provides insights into Japanese L1 participants’ thoughts about aizuchi behaviour and,
in a sense, provides what these participants believe they orient themselves to during interaction. Participants are aware of *aizuchi* form and sociocultural function of *aizuchi*. While this is not an important element, it suggests that the awareness of the form and function relates to the politeness behaviours of the listener and not the ‘syntactic structure inherent in Japanese [which] provides more backchannel opportunities’ (Cutrone, 2005: 247).

To answer the second research question (What value do these responses have for researchers?), the data analysis and discussion section, again, detailed the value of the analysis of metadata. Until scholars have the technology to view, in real time, a participant’s thoughts in interaction, this may be the closest step in capturing a participant’s mind while performing *aizuchi* behaviour. Through the data collected here, it highlights the need for a mixed-method approach to understanding *aizuchi* behaviour and comparing participant responses with their actual *aizuchi* behaviour in interaction.

In summary, participants have provided further insights into *aizuchi* research and have shown that, in examining *aizuchi* behaviour, a mixed method of inquiry would provide stimulating results. Participant responses have shown that there is still room for further research; in particular, in areas such as the definition of *aizuchi*. Participants in interactions of various contexts would also provide interesting insights. The combination of interactional data and stimulated-recall interviews (as proposed in the Interactional Sociolinguistic framework) could potentially confirm or disprove sociocultural explanations about the perception of communication in Japan. At the very least, this framework could provide further insights into *aizuchi* behaviour, which (to the author’s knowledge) is yet to be explored. The use of more participants (quantity, gender and consistent or various dyadic structures) would also aid in gaining general consensus on the use of *aizuchi* and participant responses about *aizuchi* behaviour. This would, in turn, add further research regarding the role of the listener in the Japanese context, which appears, at present, to be under-researched.

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References


Principles of Enhancing Students’ Memory in Translation Teaching with Reference to the Chinese Educational Context

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Abstract
This study, which is based on the findings of psychological explorations of human needs and memory, aims to explore the importance and principles of enhancing students’ memory in translation teaching. In this research, students’ special needs in the translation classroom are analyzed according to Maslow’s theory of human needs. Then, the needs analysis is discussed in relation to the research on memory in the field of psychology, including the principles of memory and the factors that influence memory; in particular, the role emotional involvement plays in enhancing people’s memory. Gratifying students’ needs involves their emotional response and, in this sense, needs satisfaction is related to memory enhancement. Four principles to enhance students’ memory are summarized in keeping with students’ needs and the major mechanisms of memory; especially, emotional involvement. Being focused, specific, personal, and creative in the process of translation teaching helps to gratify students’ needs and contribute to strengthening their memorization by causing their emotional reactions. The first section of this paper reviews the current position of translation teaching and the research background; the second section clarifies the research objectives and methods; the third section analyzes students’ needs in the translation classroom which motivate their learning and, therefore, memorizing processes; the fourth section explains various aspects of memory, giving prominence to the importance of emotion; the fifth section summarizes the principles to strengthen students’ memory in translation teaching in accordance with students’ needs and the mechanisms underlying the memory system, and discusses the practical application of these principles in the Chinese educational context.

Keywords
memory, needs, principle, teaching, translation

Introduction
The goal of translation teaching is ‘to facilitate the acquisition of communicative translational competence’ (Colina, 2003: 30), which can be defined as the ‘ability to interact appropriately and adequately as an active participant in communicative

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translation tasks’ (Kiraly, 1990: 215). Such ability is closely related to students’ memorization and subsequent absorption and application of what is taught in the classroom. In other words, how well students memorize what they have learned in the classroom determines the quality of translation teaching to a great extent. While students’ memory is a key factor for the success of translation teaching, this area is seldom explored by researchers or teachers of translation studies. This investigation aims to integrate the psychological research on human needs and memory and studies in translation pedagogy, as well as linguistics, to work out the major principles for strengthening students’ memory and the useful teaching strategies that are in line with students’ needs and able to deepen their impression and memorization of what is taught in the classroom. First of all, the researchers will introduce the research background.

**Research Background**

**The Role of Translation in Teaching Foreign Languages**

Translation plays an important role in the teaching of foreign languages. It sharpens students’ ability to transfer ideas between languages and cultures, and facilitates their learning of the foreign language. With the emergence of the direct method of teaching, it has become the case that the mother tongue is usually avoided in the language classroom in China (Li, 1995: 157). As a result, ‘translation, which is an effective way to learn the target language, was gradually neglected’ (Li, 1995: 157). Translation is said to be ‘of little interest’ for scholars and teachers teaching foreign languages, and ‘its use has been quoted as “non-communicative”, “boring”, “a waste of time”’ (Valero-Garces, 1998-1999: 31). However, since the purpose of foreign language teaching is to ‘make the learner conceive of the foreign language in the same way as communicative activity’, it is reasonable to make use of translation (Widdowson, 1978: 159). Translation involves students’ transference and comparison between their native tongue and the foreign language. Making students more aware of the differences and similarities between their native tongue and the new language they are learning is a way of ‘increasing their communicative competence and producing, as a result, effective communication’ (Valero-Garces, 1998-1999: 34). Actually, it is claimed that translation serves to develop three essential abilities in their second language: ‘to search (flexibility) for the most the appropriate words (accuracy) to convey what is meant (clarity)’ (Duff, 1989: 7). Therefore, a selective and directed
use of translation activities is particularly valuable for ‘the development of an improved awareness of stylistic appropriacy in more advanced learners’ (Tudor, 1987: 268).

In addition to enhancing language learning, translation also serves as a method of testing students’ mastery of the foreign language. Language teaching ‘covers the training of students’ abilities to listen, speak, read, write, and translate, among which translation is essential and in some ways reflects students’ abilities to listen, speak, read, and write’ (Li, 1995: 157). Translation also demonstrates students’ ability to ‘mediate between L1 and L2’ and shows insight into both languages (Bensoussan, 1985: 45). Therefore, translation ‘is seen by some as a reliable test because it measures a great deal of language’ (Bensoussan, 1985: 45). In the case of English teaching in the Chinese educational context, students are often asked to translate between English and Chinese in order to test how well or accurately they can comprehend the Chinese text and express the original meaning in English (Mu, 2000: 82). Particularly, Chinese-English translation practice is intended to test students’ English proficiency and their abilities to use English (Mu, 2000: 83).

**Current Research on Translation Teaching**

A prominent feature of current studies on translation teaching is the lack of systematic theorization. ‘To date, translation pedagogy has been largely dominated by anecdotal evidence and case studies’ (Colina, 2003: 29). Such lack of a firm theoretical basis undermines the efficiency of the research on, and practice of, translation teaching and systematic theorization is needed for the translation classroom.

As mentioned in the introduction of this paper, students’ memory of what is taught in the translation classroom is essential in the teaching process. Research in the area of students’ memory in translation teaching in the Chinese context is rare. Searching for “translation teaching” in China Academic Journals Full-Text Database (Beijing Site, 2000-2012), the researchers have found more than 2000 studies on translation teaching; mainly translation between Chinese and English. Pang (2011) applies such textual analysis notions as cohesion and coherence to translation teaching. Wang (2004) considers the use of corpus in translation teaching. Other theoretical aspects, such as the functional approach, hermeneutics, and cultural awareness are also covered (See Dai, 2011; Wei, 2011; Zhao, 2011). Most of these investigations aim to improve translation quality or explore effective translation
strategies for teachers’ reference. Then, the researchers searched the keyword “memory” within the results described above and only got three entries, which shows how rare the studies concerning memory in the translation teaching of the Chinese educational context are. These three papers all investigate the application of the memory system in machine translation and the methods of using memory in translation software to improve the efficiency of translation teaching or translation practice (see Mei, 2010; Wang, 2011; Wu, 2007). The memory mentioned here is concerned with memory in the computer system and falls under a completely different category from what is meant in this study, which refers to students’ memorization of what is taught in the translation classroom.

Research Objectives and Methods

Research Objectives

The importance of translation teaching was presented in the section on the role of translation in teaching foreign languages. The following section demonstrated that current studies on translation teaching lack theorization and that explorations of the importance of memory-strengthening principles in the translation classroom are rare, as far as the teaching of translation between Chinese and English is concerned. This research aims to realize the following objectives: first, this investigation is intended to deepen researchers’ and teachers’ awareness and understanding of the role students’ memorization plays in improving the quality of translation teaching; second, this study aims to establish a theoretical framework combining theories of psychology, linguistics and translation studies to summarize the teaching principles of deepening students’ memory.

Research Methods

Students are motivated by their needs. In this research, students’ special needs in the translation classroom are analyzed according to the theory of human needs (see Maslow, 1987). Clarifying students’ needs is helpful for working out the teaching principles or strategies that are more in line with students’ needs. Then, the research on human memory in psychology is reviewed. This includes the principles of memory and the factors that influence memory; in particular, the role emotional involvement plays in enhancing people’s memory and the research on memory is discussed in relation to the needs analysis. Gratifying students’ needs involves their emotional
response and, in this sense, needs satisfaction is related to memory enhancement. Therefore, teaching modes or methods that are in line with students’ needs can deepen their memorization. Lastly, the researchers will summarize the teaching principles and strategies in keeping with students’ needs and the memory mechanisms, and demonstrate how these principles can be applied in the translation classroom. In the next section, the researchers will elaborate on students’ needs, which teachers are supposed to bear in mind all the time during the process of teaching, and form the basis for the theoretical framework.

**Students’ Needs**

**Three Categories of Needs**

People are motivated to gratify different needs. Students also have their own needs in the translation classroom. Being clear about students’ needs and designing the teaching in line with their needs can cause their emotional involvement, such as satisfaction. Psychological studies have found that making people feel comfortable (Bristow, 1999: 1) and engaging their emotional response strengthens their memory (Bristow, 1999: 6). In this sense, needs gratification helps to enhance students’ memory. There are a number of theories of motivations or needs and the most widely known is Maslow’s study (White, 2000: 262-263). Maslow’s theory generalizes three types of human needs; namely, conative, cognitive and aesthetic ones.

Conative needs cover such categories as physiological, safety, social/love, esteem and self-actualization needs (Maslow, 1987: 15-22; Muchinsky, 2003: 375). Physiological needs are most basic for people to survive, such as needs for food, air, and water; safety needs involve security, stability and protection, structure, order, law and limits, as well as freedom from fear, anxiety and chaos; social/love needs refer to giving and receiving affection, including the desire for association, belonging and companionship, and involving one’s ability to exist in harmony with others; esteem needs cover self-esteem and respect from others, including the desire for strength, achievement, mastery and competence, confidence, independence and freedom, and the desire for reputation or prestige, status, fame and glory, dominance, recognition or attention; self-actualization refers to the realization of one’s full potential (Maslow, 1987: 15-22; Muchinsky, 2003: 375). Aside from the basic conative needs, Maslow also identifies the cognitive desires to know and to understand. Healthy people are attracted to the mysterious, unknown, strange, unorganized and unexplained (Maslow,
Students’ cognitive needs are directly relevant to learning translation, which are mainly demonstrated in their desire to acquire the knowledge concerning languages and cultures and the skills regarding the transference between languages and cultures. In addition, people also have aesthetic needs for order, symmetry, closure, completion of acts, system and structure (Maslow, 1987: 25-26).

**Relations between the Needs**

Conative, cognitive and aesthetic needs are closely related and sometimes parallel or overlap each other. Actually, cognitive needs impenetrable conative needs for safety, social/love, esteem and self-actualization. Getting to know about the unfamiliar helps to achieve the sense of security and realize one’s safety needs. Similarly, cognitive needs are also related to social/love needs, for people have the desire to know about and get along with others. In addition, sorting complex things out is one way to communicate with others, win their respect and gratify one’s own esteem needs. Besides, the need to know and understand things other than what is essential for daily life can show one’s actualization and aesthetic needs, as well. As for aesthetic needs, once security has been ensured, they are also prevalent, for people give aesthetic judgment either when they socialize with others, intend to win others’ respect, try to realize their own potentials or give logical analysis.

**Students’ Needs**

The theory of human needs is, in part, an attempt to account for the ‘unity behind the apparent diversity from culture to culture’ (Maslow, 1987: 28). However, the theory is not claimed to be ‘ultimate or universal for all cultures’; instead, it is intended to be ‘relatively more ultimate, more universal, and more basic than the superficial conscious desires, and makes a closer approach to common human characteristics’ (Maslow, 1987: 28). The needs are of a universal nature, in the sense that people from different cultural backgrounds all share these needs. Manifestations of these needs and the ways of gratifying them are culturally and contextually variant. In the translation classroom, students’ needs mainly cover several categories. They have esteem needs to win respect and recognition from teachers and fellow students; they have social/love needs to communicate with other students and teachers; they have actualization needs to realize their potential in terms of improving their language proficiency and translation competence which requires ‘interlingual and intercultural
communicative competence’ (Colina, 2003: 30). They have cognitive needs to learn more about the linguistic or cultural nuances; they also have aesthetic needs to appreciate the beauty in different text types and their translations. As the researchers have noted in section 3.1, addressing students’ needs in the classroom will engage their emotional responses, which will enhance their memorization. In the next section, the researchers will elaborate on various aspects of memory.

Memory

Definition

Radvansky (2011: 1) gives/identifies three definitions of memory: as the location where information is kept; the thing that holds the contents of experience; or the mental process used to acquire, store or retrieve information. In this paper, the term “memory” covers both the content of memorization and the process of memorizing.

There are different methods of classifying memory. Some major memory systems are identified via ‘a variety of techniques, including neuropsychological and statistical methods’ (Surprenant & Neath, 2009: 10). For short-term memory, without active attention, the information ‘is largely forgotten in 30 seconds’ (Radvansky, 2011: 68). In contrast, long-term memory refers to long-term knowledge and different ways of using that knowledge (Radvansky, 2011: 13). Long-term memory has three components: procedural memory, semantic memory and episodic memory (Parkin, 1999: 7). Procedural memory is concerned with the knowledge that is ‘not consciously known and cannot be transferred from one person to another’ and is concerned with knowing how rather than knowing what (Surprenant & Neath, 2009: 11). Semantic memory refers to ‘memory for general knowledge and includes facts, concepts and vocabulary’ (Surprenant & Neath, 2009: 12), which is more specific than procedural memory. Episodic memory is the system that ‘supports memories of personally experienced events or episodes’ (Surprenant & Neath, 2009: 13) and includes ‘general world, encyclopedic knowledge’ (Radvansky, 2011: 358). In this investigation, the researchers mostly refer to long-term memory and its procedural, semantic and episodic memory systems, because, in remembering what is learned, students need to use their general knowledge to understand what the teacher says, analyze the texts and figure out the appropriate translations in their practice, retrieve their semantic information and go through this personal experience. Within these major systems, more specific categories of memory are identified.
First is implicit memory, also called indirect memory (Parkin, 1999: 30), which refers to memory and memory processes that are unconscious (Radvansky, 2011: 56). In contrast, explicit memory is the act of actively and consciously remembering (Radvansky, 2011: 15) or the ‘conscious recall or recognition of information’ (Parkin, 1999: 30). Next is iconic memory, which covers what is gained via visual means (Radvansky, 2011: 60), while echoic memory ‘serves audition like iconic memory serves vision’ (Radvansky, 2011: 64). Things are better remembered when one is in a similar physiological state during recall as they were during learning, which is regarded as state-dependent memory (Radvansky, 2011: 126). Similarly, things are better remembered when one is in the same mood as when learning and this is called mood-dependent memory (Radvansky, 2011: 126). It is easier to think of things that are congruent with one’s current mood and this is mood-congruent memory (Radvansky, 2011: 127).

In this study, by memory, the researchers mostly mean implicit memory, explicit memory, iconic memory and echoic memory, since students either remember information unconsciously or through conscious effort, and the sources of information are both visual and oral. The categorization of state-dependent, mood-dependent and mood-congruent memories gives prominence to the role emotional or mood factors play in enhancing students’ memorization. This mood factor will be explored later in connection with the gratification of students’ needs. In the next section, the researchers will discuss the content of memory.

Content of Memory
The content of memory is hard to delimit. There are various types of empirical tests to assess ‘what information is in memory, what can be remembered later, and how easily it is remembered’ (Radvansky, 2011: 45). In a free recall test, subjects are asked to report as much information as they can; in a forced recall test, subjects are asked to report a certain amount of information, so that the weaker knowledge in their memory can also be assessed; in a cued recall test, people’s memories are associated with a context or setting (Radvansky, 2011: 45-46). These three types of tests are also referred to as free recall, cued recall and recognition tests (Henderson, 1999: 10). The results vary with individual tests’ materials and only some principles of memory can be generalized as the ‘qualitative statements of empirical regularities’ (Surprenant & Neath, 2009: 7), which are elaborated in the next section. However, as far as this
study is concerned, what is to be memorized by students in the translation classroom includes the knowledge regarding the languages and cultures involved, as well as methods and skills of translation or examples of successful translation. Since this information is students’ generalizations, it may not be exactly what is taught. Because there is a memory mechanism that tends to ‘focus on central details at the expense of peripheral information’ (Radvansky, 2011: 358), students may just memorize the key ideas and their perspective may or may not be the same as the original one in the classroom when processing the information. In many cases, students may not be able to articulate what they have remembered, which is called nondeclarative memory (Radvansky, 2011: 14). Therefore, what students remember is not the texts or translations per se; instead, they may process the information and reconstruct the central idea, eliminating details and applying their own perspectives. In some cases, students cannot articulate what they have remembered but cues may help them to retrieve the information stored in their minds.

**Principles of Memory**

While there are areas of memory that ‘there is simply not enough data to assess’ (Surprenant & Neath, 2009: 7), some principles regarding memory have been summarized based on empirical research, which ‘apply to all memory regardless of the type of information, the type of processing, the hypothetical system supporting the memory, or the time scale’ (Surprenant & Neath, 2009: 1). First, the cue-driven principle means that the act of remembering begins with a cue that initiates the retrieval process (Surprenant & Neath, 2009: 7). Cues can be verbal, like a question, or non-verbal, like odors, emotions, sounds and images (Surprenant & Neath, 2009: 27). Second, the encoding-retrieval principle means that memory depends on ‘the relation between the conditions at encoding and the conditions at retrieval’ (Surprenant & Neath, 2009: 7). Strong cues have been shown to work better than weak ones (Surprenant & Neath, 2009: 44). Emotional involvement, rational thinking and personal experiences are all strong cues. In the translation classroom, students’ needs are taken into account and they are asked to analyze translation examples and engage in translation practice, as involves their emotions, rational thinking and personal experiences. Third, the cue-overload principle means cues’ effectiveness is reduced as they become associated with more items (Surprenant & Neath, 2009: 8). In other words, the effect of cue retrieval declines as the number of items increases
(Surprenant & Neath, 2009: 59). This point gives prominence to the importance of keeping a focus. In this study, the researchers are going to discuss the ways to keep a focus, such as the use of repetitions in teaching. This is in line with another principle of overlearning, which means that people can remember something better when they receive it repeatedly (Radvansky, 2011: 47). Fourth, the reconstruction principle says that memory is constructive and any possibly useful information may be exploited to construct a response to a cue (Parkin, 1999: 21; Surprenant & Neath, 2009: 8). This principle is related to the fifth principle of memory’s impurity. One consequence of reconstruction is that people’s memories are not pure, for they may use a wide variety of information and processes (Surprenant & Neath, 2009: 8). This is why the researchers have claimed, in the previous section, that the content of memory is the information generalized by students, which may not be exactly the same as what is taught in the classroom. Sixth, the relative distinctiveness principle says that more distinct items will be better remembered (Surprenant & Neath, 2009: 8). In other words, things that stand out will be better memorized. Such extraordinariness can be achieved by analyzing the translations of special linguistic expressions. Seventh, the specificity principle means that those tasks that require specific information are more vulnerable to forgetfulness (Surprenant & Neath, 2009: 8). Thus, it is harder for people to understand and remember things as they get more complicated. It does not mean that people tend to forget details. On the contrary, it implies that simplicity and clarity help people to remember things. The provision of details can make a text clear and easy for people to decode and understand and, if kept to an appropriate extent, also facilitates students’ memorization.

**Application to Translation Teaching**

Referring to students’ needs in the translation classroom, as clarified earlier, and the major principles of memory elaborated on earlier, the researchers will now explore how to enhance students’ memorization in the translation classroom. Memory involves the integration of ‘biological, cognitive, and emotional systems for encoding, manipulating, maintaining, and retrieving details about experiences’ (Alexander & O’Hara, 2009: 223). Research on the physiological and neurological mechanisms involved in memory also suggests that they are influenced by emotional arousal (Alexander & O’Hara, 2009: 226), and ‘few researchers would refute the notion that memory is linked with emotion’ (ibid.: 223). Such importance of emotional
involvement in strengthening students’ memory is the major consideration in this study and students’ emotions are involved mainly via needs satisfaction.

In this study, the researchers have generalized four principles for teaching translation in accordance with students’ needs. Being focused and providing details are concerned with fulfilling students’ cognitive needs, being personal is about their social/love needs and esteem needs, and being creative is oriented towards their aesthetic and actualization needs. These are the major needs addressed and, meanwhile, other needs may also be considered, as shown in the coming sections. Among the four principles, being focused and detailed refer to the ways of presenting lectures, being personal is about interactions with students, and being creative is concerned with the content of translation teaching or what materials are chosen for students to translate.

**Focus Keeping**

Focus needs to be kept in the teaching process. Lectures ‘that focus exclusively on specific issues’ can raise students’ awareness of the possibility of ‘overlooking problems due to limited processing capabilities and translation experience’ (Colina, 2003: 37). Keeping a focus in translation teaching can guide students to think more deeply about translation, linguistic and cultural issues, and deepen their understanding of linguistic and cultural differences. Focusing makes it easier for students to understand the subject matter and fulfill their cognitive needs.

Besides, focused teaching helps to establish students’ sense of confidence. It is pointed out that self-confidence is an extralinguistic prerequisite for translator competence (Gross, 2003: 99) and ensuring that translators have a healthy self-concept is a central problem in translation pedagogy (Gross, 2003: 83). As empirical evidence indicates that self-confidence and self-awareness are lacking in many students (Colina, 2003: 41), one of the goals of translator education includes ‘raising students’ awareness of the factors involved in translation’ and developing their own translator’s self-concept (Király, 2000: 49). Focused training on different topics of textual analysis in the classroom will equip students with the necessary tools to provide professional explanations, which, in turn, will enhance their self-confidence and self-awareness, gratifying their esteem needs and actualization needs.

Focused training in the classroom requires repetition in line with the overlearning principle mentioned earlier. Repetition allows the speaker or writer to ‘emphasize
what is important’ (Mayes, 2001: 176). They can also ‘reinforce a particular point of view in a way which involves the reader or listener in as direct and co-creative a role as possible’ (McCarthy & Carter, 1994: 148). In this sense, repetition attracts students’ attention and increases their involvement. Psychological research has revealed ‘a wide array of variables that influences memory’ and attention is one of them (Alexander & O’Hara, 2009: 223). In the case of teaching Chinese-English translation, teachers often focus on the translation of certain Chinese characters or expressions whose interpretation depends on context for students to translate (see Li, 1995: 158). For example, in one lecture, the researchers focused on the translation of the Chinese character “头 (tou, head)” and asked students to translate different sentences with the Chinese character “头 (tou, head)” in order to improve their ability and sensitivity to analyze the semantic meaning of the original text, make appropriate use of English, and figure out the correct translation. Some students had no problem understanding the Chinese sentences but could not work out an appropriate English translation. They translated the Chinese expression “铅笔头 (qian bi tou)” literally as “the head of a pencil” and failed to relate the Chinese character “头 (tou, head)” to the English word “stub” which could mean a short end remaining after something bigger has been used up. For the sentence “我们有 30 头牛 (wo men you 30 tou niu; We have 30 head of cattle.)”, some students were not aware that the English word “head”, which could refer to a single animal and should be in the singular form, was appropriate here. It can be seen that, in focused instruction with repeated exercises, students need to repeatedly think about the meaning and translation of the Chinese character. Such focused practice deepens students’ understanding of the translation of the Chinese character and their awareness of the role context plays in translation, and inspires them to think more about the different implications of the linguistic expressions. It helps to build their confidence, gratifies their cognitive and esteem needs, involves their attention, and enhances their memory.

**Detail Provision**

Merely keeping a focus is not enough for students to understand the subject matter in a comprehensive way and getting specific or detailed is essential, too. Translators are ‘embedded in a complex network of social and professional activity’ (Király, 2000: 12) and one of the extralinguistic qualities students need to acquire in translation
teaching is professionalism (Koby & Baer, 2003: 211). Details need to be provided in the translation classroom to illustrate the central point, deepen students’ understanding, and enhance their professionalism. Being specific in teaching translation does not mean not being focused. Details are provided to illustrate the focus from different angles. The provision of details can facilitate students’ comprehension and, in this way, satisfies their cognitive needs to know and to understand.

As noted earlier, getting specific by providing details, if kept to a proper degree so as not to bore the recipients, is contributive to students’ understanding and memorization. In addition, as more information is provided, students’ attention will be attracted to the central point, they will be able to have a fuller picture of the object being taught and will be prompted to work out the implied associations among these details. In this sense, detailed elaborations can establish specific images which can serve as cues for retrieving the information as in the cue-driven principle discussed earlier. Psycholinguistic research on language learning has also found that the ‘concreteness of the content of a passage’ helps enhance readers’ memorization (Meyer, 1975: 4). Concreteness is the specificity of a topic, detailed elaborations of the topic’s content, or properties related to the main topic.

As mentioned earlier, students lack the self-confidence and self-awareness required to become translators. Detailed instruction of various translation topics can equip them with the knowledge to help them to explain or defend their translation choices, which enhances their self-confidence and self-awareness. ‘Only as students articulate their reasoning for others does it concretely enter their own consciousness’ and only ‘as they consider the multiple perspectives’ do their insights emerge (Gross, 2003: 99). Another problem is students’ tendency to focus on words rather than meaning and make improper use of world knowledge (Colina, 2003: 29-30). Detailed instruction of linguistic, translational, cultural and, even, sociological knowledge is necessary to give students a more comprehensive overview, to raise their awareness, and sharpen their sensitivity, so that they can apply the target language appropriately in translation practice.

During the instructions, the researchers will provide details in order to inspire students to think more about the possible translations of Chinese expressions which are often culturally-loaded. For illustration, in one lecture, the researchers assigned
students to translate the following sentence “每个小家庭各自有自己的‘外婆家’ (They each had their own relatives on their mother’s side.)” and asked them to pay attention to the term “外婆家 (wai po jia, family of one’s maternal grandmother)”. The researchers found that it was hard for many students to transfer the meaning of “外婆家 (wai po jia, family of one’s maternal grandmother)” accurately to English, partly because there is a cultural gap in this case. Chinese are specific about how to address each family member or relative. Many factors, such as gender and age, are taken into account, which is different from English. Therefore, in the instruction, the researchers extended the discussion to other similar terms. For illustration, there is one term, “cousin”, in English to refer to the child of one’s aunt or uncle, while, in Chinese, there are eight, including “表哥 (biao ge, son of father’s sister or of mother’s brother or sister, who is older than oneself)”, “表姐 (biao jie, daughter of father’s sister or of mother’s brother or sister, who is older than oneself)”, “表弟 (biao di, son of father’s sister or of mother’s brother or sister, who is younger than oneself)”, “表妹 (biao mei, daughter of father’s sister or of mother’s brother or sister, who is younger than oneself)”, “堂哥 (tang ge, son of father’s brother, who is older than oneself)”, “堂姐 (tang jie, daughter of father’s brother, who is older than oneself)”, “堂弟 (tang di, son of father’s brother, who is younger than oneself)” and “堂妹 (tang mei, daughter of father’s brother, who is younger than oneself)”. It can show how complicated the Chinese kinship system is. Chinese also distinguishes maternal and paternal grandmothers and there are different titles for them, with “奶奶 (nai nai)” or “祖母 (zu mu)” referring to one’s paternal grandmother and “姥姥 (lao lao)” or “外婆 (wai po)” referring to one’s maternal grandmother, while there is no such distinction in English. As the original text refers to maternal grandmother specifically, some students translate it inaccurately as “the family of their own maternal grandmother”. However, the translation of the expression involves more than the choice of a proper title for maternal grandmother. Literally speaking, “外婆家 (wai po jia)” means the family of one’s maternal grandmother. In this context, it means that, although the children have the same paternal grandparents, they belong to different families and have their own relatives from their mothers’ families, such as their cousins, aunts or uncles. Therefore, it is better to be translated as “relatives on their mother’s side”, which is simple in wording like the original expression and covers the people referred
to in the original text. Through detailed illustrations concerning the English translation of “外婆家 (wai po jia)”, students’ awareness of the cultural differences can be deepened and their abilities to analyze contextual implications and figure out the most appropriate English expression are strengthened.

**Being Personal**

Conventionally, the main attraction of the classroom is ‘the instructor’s display and distribution of amassed knowledge and experience’, where there can be no ‘lively interaction’ (Király, 2003: 7). Within such models, the primary activity is the transmission of the teacher’s knowledge to students’ minds and it is the students’ task to absorb this transmitted knowledge and commit it to memory (Király, 2003: 6). Talk between students is considered ‘disruptive’ to the teacher’s teaching and ‘[i]f students say anything at all in class, it is usually to display their lack of knowledge’ or ‘ask questions so that the teacher can correct their errors and provide them with the right answers’ (Király, 2003: 6).

However, interaction between students and between the teacher and students can improve the effects of teaching. ‘Interaction, dialogue, and collaboration accelerate and enrich the process of teaching and develop students’ ‘sense of belonging and legitimacy within the community’ (Johnson, 2003: 99). In addition, students’ ability to work in teams is an extralinguistic quality that language education needs to cover (Koby & Baer, 2003: 211), which would also require collaborations and interactions in the classroom. With students’ active participation, classes are dynamic workshops in which ‘everyone’s insights, questions, contributions, and strokes of brilliance are relied upon and collectively appreciated’ (Johnson, 2003: 101). Therefore, students’ social/love needs and esteem needs are gratified via communication with and recognition from the teacher and other students. Such personal involvement and experience can serve as cues for memory in line with the cue-driven principle clarified earlier.

Besides, students also need to be trained to make proper use of global, contextual and pragmatic information. Failing to apply such information is found in empirical research to be ‘a widespread form of student behavior’ in various ‘unsuccessful translation processes’ and this aspect should be ‘an essential part of translation pedagogy’ (Colina, 2003: 38). To this end, personal experience and hands-on practice
are essential, for ‘[o]ne learns how to translate by translating’ (Kiraly, 1995: 7). As far as translation is concerned, direct transmission is not ‘the only (and perhaps not the most effective) way to help students acquire the wide range of skills and expertise that translators must have’ (Kiraly, 2003: 8). This is why it has been proposed that translation teaching should be based on ‘authentic situated action, the collaborative construction of knowledge, and personal experience’ (Király, 2000: 3). Practice analyzing real-world situations and translations or translating authentic materials is helpful for solving the problem of students’ lack of understanding of contextual and pragmatic information.

A method of promoting interactions and involving students in the translation classroom is to assign translation tasks to individuals or groups. ‘While there is not yet complete agreement on how to construct task-based activities’, the consensus is that they ‘engage the language learner in purposeful language use’ (James Lee, cited in Koby & Baer, 2003: 218). The task should not be carried out on participants and participants should carry out the task themselves (Koby & Baer, 2003: 218). Teachers mainly play the role of the organizer and it is students who finish the work. There is conversation and interaction and the teacher’s main job is to be ‘attentive to those potential moments of developmental progress’ (Kiraly, 2003: 12). In these activities, group discussions are an important part and students have the opportunity to analyze and comment on each other’s work, for translation is related to contrastive studies and ‘may lead to discussion’ (Valero-Garces, 1998-1999: 34).

Increasing students’ participation and making them play the leading role in the translation classroom has been advocated in the Chinese educational context (Wang, 2012). Asking students to comment on and analyze each other’s translations has been frequently applied in Chinese-English translation teaching (see Wu 2010). For example, the researchers asked students to translate a sentence “这在福州也是一件新鲜事 (That was something new in our home town.)” and pay attention to the expression “新鲜事 (xin xian shi, something new)”. Then, the researchers organized them into groups of four or five to compare the different ways of translating. The Chinese phrase “新鲜事 (xin xian shi)” is a colloquial term and there are equivalent expressions in English. In the class, there were 30 students and, altogether, they came up with six versions. “新鲜事 (xin xian shi)” was translated as “something fresh” by nine students, “fresh news” by one student, “something new” by sixteen students,
“novelty” by two students, “novel thing” by one student and “strange thing” by one student. These translations are all grammatically correct but some of them are not appropriate. Although some students produced unsatisfactory translations, they seemed to be able to think more deeply and comprehensively and realize the mistakes that they had made in group discussions. The researchers organized eight groups and asked them to present their discussions and conclusions one by one. They figured out that the version “strange thing” is not accurate here. While the expression “新鲜事 (xin xian shi)” can mean “something strange”, the original text refers to the installation of electrical lights, which is something new and exciting. The word “strange” means not being familiar or at ease, which is different from the Chinese text. The words “novel” and “novelty” are not appropriate, either. They both mean something new, unusual or different; however, the style of this piece of writing is colloquial and the words “novel” and “novelty” imply literariness and, therefore, are not appropriate. In addition, the expression “fresh news” is redundant, as news already implies something fresh. The other two translations, “something fresh” and “something new”, are accurate in meaning, correct in grammar and appropriate in the context. Through such collaborations with other students and self-learning, students are inspired to think and express their views, and such personal involvement and experience helps to fulfill their social/love needs and esteem needs and enhance their memory.

Being Creative
An important goal of teaching is to make students independent of their teachers, so that they can continue to learn long after they leave the classroom (Manning, 1996: 546). Translation teaching needs to sharpen students’ extralinguistic qualities of flexibility, creativity and resourcefulness, which are ‘increasingly prized within the contemporary language industry’ (Koby & Baer, 2003: 211). In the translation classroom, it is important for students to learn the methods of translation and master the skills to use the foreign language, instead of just memorizing the correct translations. Actually, in the case of translation, neither students nor teachers ‘can possibly have “the” right answers’ (Király, 2003: 10). Students’ creativity should be encouraged and a better version is always a goal in the translation classroom. During this process, revision and feedback from teachers or fellow students can be
incorporated into translation tasks, and drafts and final versions of translations can be included (Colina, 2003: 36-37). Such activities involve interactions between students and teachers and fulfill their social/love needs, as previously discussed. Besides, the merits in students’ work will be recognized and their esteem needs are also addressed. In this sense, being creative is closely related to being personal, as the researchers have already explained. Aside from providing feedback to students and encouraging them to think of a better translation, teachers can also prepare passages that contain special linguistic designs or interesting cultural elements, for people tend to remember things that stand out, as in the distinctiveness principle explained earlier. Creativity on the part of the teacher’s providing something outstanding or unusual in the process of teaching will inspire students to think more about the inherent linguistic and cultural implications of possible translations (Li, 1995: 160). This can easily be done for Chinese-English translation because there are many culturally-loaded terms in Chinese which are difficult to translate into English. Such examples will involve students’ efforts to solve the problem and improve their abilities to use English. For example, the physical shape or layout of Chinese characters is often related to their semantic meanings and there is no such feature in English. Therefore, for cases where the physical shape of Chinese characters is made use of, it is usually difficult to translate into English. For example, the Chinese character “品 (pin)” is composed of three parts of “口 (kou)”. The way these three parts of “口 (kou)” are located in “品 (pin)” is often used to show the geographical organization of people or things, as in the following sentence: “三个人品字式坐了，随便谈了几句 (The three men sat down facing each other and began casually chatting,)”. The original text is simple in wording and clear in meaning. However, for many students, the use of the Chinese character “品 (pin)” to signify the three persons’ location is difficult to transfer to English. In the class, there were mainly three ways to solve the problem. Some students considered the similarity between the shape of the Chinese character and a triangle and translated it as “sat in a triangle”; some students kept the Chinese character and put it as “sat in the shape of ‘品’”; some students also kept the Chinese character but added a note to explain its implications. These three versions are all able to show the disposition of the people, to a degree, but there are inadequacies. The wording of “sat in a triangle” is influenced by the physical shape of the Chinese character and may sound awkward for some English speakers, for whom it is more
natural to say “sat in a circle”. Keeping the Chinese character in the second version may be hard for some English readers to understand. Adding a note, as in the third version, is helpful for clarifying the meaning but it loses the simplicity of wording in the original text. It can be seen that students were restricted by the way the Chinese passage signifies the three people’s position, which is common among students to focus on words rather than meaning, as mentioned above. The three solutions are workable in different contexts. However, in this case, there is a simple solution by changing the way of clarifying the three persons’ location and it can be put as “facing each other”, which has the same meaning and simplicity of wording as the original text. Translation practice regarding such special linguistic terms helps to improve students’ abilities to overcome cultural gaps and communicate effectively in English and widen their horizons of strategies of translation.

**Conclusion**

To summarize, this research has explored the principles of enhancing students’ memorization in translation teaching, referring to psychological theories on human memory and human needs, as well as linguistic and pedagogical studies. Taking into account students’ special needs in the translation classroom and the common principles for memory, the researchers have generalized four principles that contribute to enhancing students’ memory; namely, being focused, specific, personal and creative in the process of translation teaching. Obeying these principles fulfills students’ various needs in the translation classroom and involves their participation, attention and emotion. As psychological research has shown, emotional involvement enhances one’s memorization. In this sense, satisfying students’ cognitive needs by being focused and providing details, gratifying their social/love needs and esteem needs by getting personal, and addressing their aesthetic needs and actualization needs by being creative in the classroom has the effect of deepening their impression and memory of what is taught. Future research will explore more practical applications of the theoretical investigations and more efforts can be made in specifying the principles and applying the strategies in accordance with these principles to translation teaching. Additionally, psychological experiments can be carried out to test students’ needs and interests, and students’ performance can be analyzed to test the validity of these principles and strategies.
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References


Preliminary Problems in Contrasting Vowel Inventories:  
The Case of English and Serbian  

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Abstract  
This paper aims at answering three research questions leading to a more comprehensive contrastive study of Serbian and American English vowels: (1) how common five-vowel systems are cross-linguistically, (2) how symmetrical these appear to be when it comes to the existence of short vowels and their long counterparts, i.e., how phonetic duration is regarded in vowel inventories, and (3) how comparable vowels are and how crowded phonological inventories are in English and Serbian. The typological studies and more recent phonological databases (USPID), as well as Liljencrants and Lindblom's (1972) Dispersion Theory imply that further partitioning of these two vowel inventories may be necessary.

Keywords  
vowels, phonetic duration, vowel symmetry, American English, Serbian, dispersion theory

Introduction  
It is a well-known fact that languages vary in the size of the vowel inventories, as well as in the qualitative and quantitative features of the vowel segments observed in them, and that these characteristics can change over time, even though phonological features are among the most constant characteristics of language systems and are, therefore, least susceptible to change. The goal of this paper is to point out what vowel inventories have in common and how different they can be from one another, and, most importantly, what problems a researcher can encounter when contrasting two virtually different vowel inventories, especially in the case of Serbian and American English. This preliminary study looks specifically into the nature of data that large typological databases compile when describing phonological inventories of languages, how this

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is done and how such a wealth of linguistic information can assist an individual researcher in setting up their own research goals around a specially devised mini-corpus needed for a research project to produce viable results. I will aim at answering several research questions when it comes to contrasting the vowel inventories of Serbian and American English in the Dispersion Theory (DT) framework: (1) occurrence and frequency of long vowels, and (2) the symmetry of vowel systems (short vs. long) as one of the language universals. These two issues are imperative because the findings of the cross-linguistic typological survey may have an impact on the experimental design to be developed later.

**Typological Considerations: The Old-Fashioned Way**

Trubetzkoy (1971, first published in 1939) was among the first linguists to offer a typology of the spatial distribution of vowels. Finding acoustic correspondents for the articulatory phenomena was not an easy task for Trubetzkoy, bearing in mind that he did not have recourse to the advanced techniques of instrumental phonetics that other linguists later did. Hockett (1955) also attempts to classify vowels systems by cataloging various types of phonological inventories. Such classification of vowels gives linguists insight into how vowels combine across languages, what the main division criteria are and how similar vocalic patterns are. Trubetzkoy's and Hockett's early typological work may have been a precursor to more comprehensive and more detailed cross-linguistic studies, as well as to the new era of the creation of linguistic corpora which was to ensue.

The generation of phonological databases and linguistic corpora that followed older, memory-based studies and random typological research projects (either general, area-specific, or feature-specific) clearly involved descriptions of more languages and/or larger, more detailed and more precise phonological data. Ferguson and Greenberg's project on language universals was the forerunner of large phonological databases and a part of it resulted in a study of vocalic inventories of 209 languages, also known as the Stanford Phonology Archiving Project (Crothers, 1978). Sedlak (1969), in his work on the same project, comes to grips with the typological considerations of vowel quality systems, covering 170 languages of the world.

In this paper, I focus on UPSID (*UCLA Phonological Segment Inventory Database*), elaborated by Maddieson (1984) with 317 languages and later updated to 451 language systems (Maddieson & Precoda, 1989). This database provides a genetically-balanced sample of the
world's languages and is a free research tool available online. The UPSID database is utilized in this research so as to find out how frequent the vocalic features of Serbian and English vowels are. Neither of the two languages is described in this database. Given that this source is genetically-balanced, I will assume that the query in a phonological corpus like UPSID will offer some valid insight into experimental description and design in my research.

Working in the domain of Liljencrants and Lindblom's (1972) Dispersion Theory, the initial idea was to test its main maximal vowel contrast hypothesis on both Serbian and American English. Serbian is a Slavic language (Indo-European family of languages) of the South Slavic subgroup which has five short and five long vowels. The vocalic layout of Serbian seems rather uninteresting and common for a linguist whose research involves Indo-European languages, the family that is probably best studied of all, but also limited in number. Furthermore, it is yet unclear whether the long and short vowels of Serbian have the same vowel quality, as the descriptions of this language fail to provide recent acoustic data. Kostić and Das (1969: 193) describe the vowel system of the language they call Serbo-Croatian as having five vowels and measure their formants, which overlaps with the articulatory studies of Serbian Miletić (1960) published slightly earlier. I am going to look at the first research question in the next section. The initial hypothesis is that five-vowel systems are common across languages of the world.

Ninety-four languages in UPSID (20.84% of all languages in UPSID) have a total of five vowels and this seems to be a preferred number of vowels in a language (Greek, Hawaiian, Japanese, Russian, Spanish and Tagalog, among others). Serbian, for example, has a phonological inventory of five short and five long vowels, totaling ten vowel segments. This language has a clearly symmetrical vocalic inventory with five long-short oppositions: [a] vs. [a:], [e] vs. [e:], [i] vs. [i:], [o] vs. [o:], and [u] vs. [u:].

According to the data in UPSID, vowel inventories with at least 6 vowels tend to introduce the distinctive vowel length more readily, which is in line with the phonological overview of Serbian. Table 1 lists all languages that have long vowels in their inventories. The number of such languages seems relatively small. In other words, long vowels rarely occur in the languages included and described in the UPSID database. In the group of languages that have up to ten vowels, only 6.6% of the UPSID languages utilize vowel length distinction, whereas the languages with more elaborate vowel inventories (11 and more vowels) use vowel length more. Nearly 22% of these languages have long vowels. The data is given in the following table:
Table 1 UPSID: Representation of vowel length in vowel inventories

<table>
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<tr>
<th># vowels</th>
<th># languages</th>
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<th>languages with long vowels listed</th>
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<tr>
<td>3</td>
<td>23</td>
<td>-</td>
<td>Gadsup (Papuan, Trans-New Guinea), Ngizim (Afro-Asiatic, Chadic), Totonac (North American, Penutian)</td>
</tr>
<tr>
<td>4</td>
<td>25</td>
<td>-</td>
<td>Adzera (Austro-Tai, East Malayo-Polynesia), Angaathiha (Papuan, Trans-New Guinea), Atayal (Austro-Tai, Atayalic), Bardi (Australian, Nyulnyulam), Hupa (Na-Dene, Athabaskan), Kabardian (Caucasian), Lai (Austro-Tai, Li-Kam-Tai), Pashto (Indo-European, Iranian), Tigre (Afro-Asiatic, Semitic)</td>
</tr>
<tr>
<td>5</td>
<td>94</td>
<td>-</td>
<td>Arabic (Afro-Asiatic, Semitic), Mien (Sino-Tibetan, Hmong-Mien), Wichita (North American, Keresiouan), Yay (Austro-Tai, Li-Kam-Tai)</td>
</tr>
<tr>
<td>6</td>
<td>66</td>
<td>3</td>
<td>Brahui (Dravidian), Diegueno (North American, Hakan), Kurdish (Indo-European, Iranian), Lak (Caucasian)</td>
</tr>
<tr>
<td>7</td>
<td>52</td>
<td>9</td>
<td>Angas (Afro-Asiatic, Chadic), Lithuanian (Indo-European, Baltic), Tonkawa (North American, Hakan)</td>
</tr>
<tr>
<td>8</td>
<td>29</td>
<td>4</td>
<td>Chipewyan, Eyak, French, Fur, German, Hindi-Urdu, Hungarian, Iai, Iraqw, Irish, Kanakuru, Karok, Kashmiri, Khmer, Khmu?, Lakkia, Navajo, Neo-Aramaic, Noni, Norwegian, Ojibwa, Selkup, Sinhalese, Tamasheq, Telugu, Tulu, Wolof, !Xu</td>
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<tr>
<td>9</td>
<td>34</td>
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<td>10</td>
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<td>128</td>
<td>28</td>
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</table>

With regard to the second research question, the UPSID query provided unexpected results about the use of long vowels in the languages of the world. It is a striking fact that, out of 160 languages in the UPSID database whose vowel inventories include at least 10 vowels, only 31 utilize vowel duration or hardly one in five of those languages. American English and Serbian would fall into that category had they been described in this phonological database. Vowel duration seems to be an important characteristic in the family of Indo-European languages.

Another important point that should be considered is the frequency of the numerical symmetry between short and long vowels that Serbian exhibits (five long vs. five short vowels). Gadsup, Ngizim and Totonac all have three long vowels in a six-vowel inventory but only Totonac has two long-short counterparts that share both the quality and quantity (high front unrounded /i/ and high back rounded /u/). Languages with eight vowels have a surprisingly small number of long vowels. For example, Mien and Yay have only one long vowel in their eight-vowel inventories. However, Wichita has two long-short pairs (lower mid front unrounded vowel and low back rounded) and additional four vowels that differ in the length and quality. The
vowels of the now extinct Tonkawa language occur in five pairs that have differing vowel lengths, the phonological description that comes closest to Serbian. The short mid front and mid back vowels are phonetically lower in Tonkawa than their high pairs ([e] → [ɛ], and [o] → [ɔ]), all else being equal. Similarly, an indigenous language of New Zealand, Māori, has five short vowels /a e i o u/ that are paralleled by five long vowels /aː eː iː oː uː/, and the vowel length in this indigenous language is phonemic (King et al., 2010: 196). The long vowels of the Māori language are analyzed as sequences of short vowels. However, there is evidence that the long vowels of Māori have decreased in duration over time, though the [a] vs. [aː] opposition has maintained a substantial difference in duration mostly due to its high functional load (Todd, 2012). The phonetic properties of Māori, Serbian and Tonkawa cannot be accounted for by their common ancestor and may be interpreted as a mere linguistic coincidence.

The figures presented in the tables below may be skewed due to the principles upon which the UPSID database is generated. The UPSID database is based on an explicit sample, which means that other linguists’ work on a variety of languages is collected in order for the compilers of the database to be able to draw some more general conclusions about how languages behave and what they have in common, i.e., how one language stands in comparison to another. Namely, the languages included in this database have been chosen to ‘approximate a properly constructed quota sample on a genetic basis of the world’s extant languages’ (Maddieson, 1984: 5). Only one language may be included from a small family grouping, e.g., one representative from West Germanic and one from the North Germanic branch. The choice of a representative language depends on the availability of phonological descriptions of the languages forming any group under scrutiny. However, for the purpose of this paper, the use of UPSID is justifiable because this language database is indeed ‘designed to study global patterns in the structure of phoneme inventories and the frequency of occurrence of particular segment types or classes in those inventories’ (Maddieson, 2006: 83-84).

Another important issue arose as part of the preliminary research after looking into the UPSID data about the major trends in the vowel system inventories with regard to the vowel length and how to analyze it. Setting up the experimental framework around Liljencrants and Lindblom's (1972) substance-based Dispersion Theory, it was obvious that further partitioning of vowel inventories had to be considered. The more crowded the vowel space, the greater the need
<table>
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<th># vowels</th>
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<td>17</td>
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<td>Ojibwa (North American, Almosan), 8</td>
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<td>Telugu (Dravidian), 6</td>
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<td>Hungarian (Ural-Altaic, Finno-Ugric, Ugric), 7</td>
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<td>Wolof (Niger-Kordofanian, West Atlantic), 7</td>
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<td>Iai (Austro-Tai, East Malayo-Polynesian), 7</td>
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<td>Navajo (Na-Dene, Athabaskan), 8</td>
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<td>Neo-Aramaic (Afro-Asiatic, Semitic), 6</td>
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<td>Selkup (Ural-Altaic, Samoyed), 9</td>
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<td>18</td>
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<td>Khmer (Austro-Asiatic), 10</td>
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<td>Norwegian (Indo-European, North Germanic), 9</td>
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<td>Hindi-Urdu (Indo-European, Indic), 11</td>
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<td>!Xu (Khoisan, North-Khoisan), 11</td>
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<td>28</td>
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<td>Kashmiri (Indo-European, Indic), 14</td>
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for this sort of division. There have been attempts to handle this problem. Schwartz et al. (1997) come to grips with the vowel inventories containing more than nine vowels and offer two solutions: either introduce duration and nasality as secondary articulations, and treat them as separate subsystems, or only analyze normal (length) and regard such vowels as a result of primary articulations. One of the most comprehensive accounts of the American English vowel inventory describes this language variety as having eleven simple vowels\(^2\) /i/ (beat), /ɪ/ (bit), /ɛ/ (bait), /ɛ/ (bet), /æ/ (bat), /ʌ/ (bus), /ɑ/ (pot), /ɔ/ (cloth), /ʊ/ (boat), /oʊ/ (book) and /u/ (boot), and at least three diphthongs (Yavaş, 2011: 78). However, discarding all other vowels, and taking

\(^2\) Some of these vowel qualities are diphthongized to some degree, especially the BAIT and BOAT vowels but, to a lesser degree, even BEAT and BOOT. Diphthongs are excluded from this study but are three in number in American English (as in BITE, BOUT and VOID).
only normal length vowels into account would result in a significant loss of data and diversity found in the vowel systems across languages; so, this principle needs to be avoided. Based on the UPSID data, only 58% of non-long vowels take up the same position as long oral vowels. It is an open question how to treat those vowel inventories where normal and long vowels occupy the same position in the vowel quadrilateral and Schwartz et al. (1997) do not offer a solution. This is to be expected because they are interested in generalizations, rather than in any specific vowel inventory. As part of his typological vowel studies, Sedlak (1969: 18) claims that the relationship of vowel length and vowel quality is a constant problem and follows other researchers’ conclusions about the division into long and short vowels in the languages under investigation.

Liljencrants and Lindblom's (1972) main formula elaborated upon in their early accounts of DT is borrowed from physics. It applies to the computation of forces in potential fields, where a numerical simulation is run by a computer. The analogy they use to illustrate the effect is based on two particles with an equal electrical charge:

They will repel each other with a force that is inversely proportional to the square of their distance. If we now place these particles in a limited space within which they can move freely, then the particles will move away from each other because of the force of repulsion. Eventually they will hit the boundary of the space, and then possibly move along the boundary, if their mutual distance can be increased that way. Finally, an equilibrium is reached where their distance cannot be increased any more. Characteristic of this state is the fact that the mutual energy has reached a minimum. If other particles are introduced into the space, the whole set will move to new positions, always fulfilling the very general equilibrium criterion, that of minimal energy. (Liljencrants & Lindblom, 1972: 841)

The implementation of a computer program based on a formula from physics resulted in the prediction of vowel systems ranging from three to twelve vowels. The obtained formant frequencies are plotted showing F1 and F2 on the abscissa and the ordinate. The predicted values are compared with several earlier sources,\(^3\) whose results are based on phonemic analyses of various languages. More often than not, there are several observed patterns in the languages of the world, whereas the output of the computer program was not intended to provide manifold results. This is one of the drawbacks of the model which shows that the phonetic reality deviates

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from the uniform results of any artificial simulations. For example, the predicted output of a five-vowel system looks like this:

Predicted:

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However, in practice there exist five different vowel arrangements. What further complicates the matter is that the authors of the observed vowel inventories usually offer broad transcription, and often fail to comment on vowel quality. This is also one of the problems present in UPSID.

Observed:

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The main principles of the numerical simulation are rooted in the minimal energy/maximal perceptual contrast principle, until an equilibrium is reached. When a new vocalic point is introduced into the vowel space, the other vowels move around to accommodate it until the space becomes too crowded.

Liljencrants and Lindblom do not idealize their attempt at establishing universal space for vowels with the help of the first three formants (F1, F2 and F3), and acknowledge some deficiencies of their model. In order to improve the accuracy of the limits of the vowel space for a typical male speaker, they transformed the linear frequency scales into the mel scale. This was
only a necessary step of bringing the acoustic data closer to an auditory representation. Theoretically speaking, American English and Serbian vowels tend to fit well into the DT framework. One of the propositions is to further divide the vowel inventory of Serbian according to the vowel duration so as to enable a more precise phonetic analysis of the short-long vowel opposition. The American English vowel system is rather asymmetrical and should be left as is. The eleven different vowel qualities should not affect the successful outcome of the analysis in the Dispersion Theory framework. Diphthongs should also be disregarded, as it is the prevailing guiding principle in most acoustic studies. This is mainly due to their gliding nature and phonetic instability, as well as their unclear status in the languages of the world.

**Concluding Remarks**

In order to avoid overcrowdedness in the vowel space and clearly due to the symmetry of the vowel inventory of Serbian, a plausible proposal might be to treat the vowel duration separately and analyze short vowels and long vowels as members of two different subsystems in this language. The analysis of the American English vowel inventory may be more challenging, mostly due to its large vowel inventory. The current shape and size of the vowel space area of this language is a result of earlier distinctions between sets of long and short vowels. Earlier vowel duration may have transmuted into contrasts of vowel quality (Maddieson, 2013) but the diachronic change could not have been taken into account. The analysis of typological data shows that five-vowel systems are very common cross-linguistically, which was expected, but also that long vowels are not widespread in the genetically-balanced sample that UPSID recognizes as representative. Even though neither Serbian nor American English have too many vowels in their segment inventories, it might be plausible to divide the vowels of Serbian into short and long subsystems in order to enable more transparent vowel comparison both within this language and in relation to other language systems.

**References**


