

**Miete or Mitte? A Preliminary Study of Vowel Length Contrasts
in Filipino Learners of German as a Foreign Language**

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Abstract

The present study provides insights into the reception of vowel length in Filipino learners of German. As learning German as an L3 requires phonological awareness of vowel length, an analysis of the relationships between distinguishing vowel length in English, a common L2 in the Philippines, and German, is instructive in determining how L2 competencies and the context of L2 learning influence the acquisition of an L3. Eleven (11) participants took receptive and productive tests to ascertain L2-L3 influences in phonology. In the receptive test, they classified the first stressed vowel in mono- or disyllabic German and English words as long or short. In the second test, the participants recited English and German words containing the target vowels. The recorded vowels, their durations, and long-short ratios were then contrasted with native speakers' recordings and correlated with variables in a questionnaire on the participant's linguistic background. The results of the study revealed that exposure to English media had a positive effect on learning German phonology.

Keywords: L3 acquisition, German as a foreign language, phonology, foreign languages in the Philippines

1. Introduction

Today's increasing multilingualism, as well as the historic existence of multi- and plurilingual societies in postcolonial societies such as the Philippines, necessitates a revisiting of two central research frameworks in cross-linguistic transfer, the contrastive framework (Lado, 1957), characterized by a comparative approach to the structural aspects of language, and the linguistic interdependence framework (Cummins, 1981) that focuses on "the extent that instruction in L_x is effective in promoting proficiency in L_x, transfer of this proficiency in L_y (either in school or environment) and adequate motivation to learn L_y" (Cummins, 1981, p. 29)¹. The scope of these ideas, while remaining a consistent feature of foreign language learning research, has been further expanded with the emergence theories on tertiary or L3 language learning, specifically whose object of study comprises of foreign languages learned beyond the second language² (see Hufeisen, 2001). The study of tertiary

language learning often encompasses multidirectional transfer, nonlinguistic influences in language learning, and metacognitive language acquisition skills that supplement further learning (Hufeisen, 2001; Aronin & Ó Laoire, 2004). These particular conditions have been the focus of tertiary language studies, where languages learned after the L2 are the focal point of analysis.

Much of the recent work on English as an L2 before German has been conducted in countries with a non-European L1 such as Taiwan (Chen, 2005) and Malaysia (Kärchner-Ober, 2009), with both studies paying particular attention to the role of sociocultural and educational factors during the acquisition of the L2 that influence how further foreign languages are learned and taught. The frequent use of English as a lingua franca or first foreign language across the world has raised questions of its utility in learning a foreign language from within the same language family, as structures in a Germanic L3 may be easily associated with their English equivalents and, therefore, facilitate learning. This study, therefore, focuses on how (and if)

¹ The L_x here can be defined as one of the languages learned prior to L_y, which is the language currently being learned.

² A second language is defined here as a language learned after the 'mother tongue' or L1 but is no longer being actively learned (see Hammarberg, 2001).

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English as an L2 facilitates L3 learning, in particular in pronunciation and phonological awareness³.

English in the Philippines is one of the primary languages used in schools and is recognized as an official language of the country. While its use and status as a *lingua franca* is not consistent throughout the country, it is used widely in business, law, and education. A majority of Filipino children are acquainted with English at a relatively young age through both educational instruction and media. But with only an estimated 0.04% of the overall population with English as an L1 (see Gonzalez, 1998), it becomes clear that English in the Philippines is generally spoken a second language from a chronological perspective⁴, although the possibility of concurrent L1s and L2s cannot be ruled out. A lack of systematic and regular data on English impedes the depiction of general trends: the last attempt at data collection on English speakers, the 2000 Census, revealed only 63.71% of the population reported English as their second language (National Statistics Office, 2000). No official records of English proficiency across a broad spectrum of the population are available. Because of the difficulties of obtaining reliable data about English speakers, the study limited to individuals at the college level who have learned English and are no longer in the process of actively learning the language in a classroom setting, consistent with the above definition.

The potential influences of Filipino and English, as L1 and L2 respectively, on the learning of German as a tertiary language, provide an opportunity to investigate the processes of cross-linguistic transfer between and amongst the L1, L2, and L3 as well as the effect of a postcolonial and multilingual context on foreign language learning. Phonetic and phonological aspects of tertiary language learning can offer valuable insights in cross-linguistic transfer for a number of reasons. First, it is widely acknowledged that the phonetics of a foreign language (in particular, pronunciation) is prone to L1 transfer, but evidence exists to imply that the L2 could similarly influence pronunciation under particular circumstances (see Williams & Hammarberg, 1998). The role of the phonetic and/or phonological characteristics from previously learned languages in bi- and multilinguals

has been extensively tested in psycholinguistic studies. For example, phonological priming from words that do not exist in one language may affect the reception of words (or pictures associated with words) in a task explicitly conducted in another language (see Brysbaert, Van Dyck, & Van de Poel, 1999). Secondly, no studies on tertiary language acquisition in recent years have dealt explicitly with pronunciation in speakers with an L1 Filipino, L2 English, and L3 German, although phonetic characteristics of individuals with L1 Filipino-L2 English have already been extensively documented in studies such as Tayao (2004) and Llamzon (1997). Both studies encompass the pronunciation of Philippine English, or the variety of English spoken and understood in the Philippines. Among some of the inferences drawn from the empirical data are the importance of environmental and sociocultural variables in speaking English in the Philippines (see section 1.2) and the varying influence of Filipino phonemes: for instance, a tendency among a number of Filipino speakers is the nondifferentiated production of vowels of similar height such as /i/ vs. /ɪ/, which differ both in length and quality in General American English. Although vowel length is not phonemic in both Filipino and (General American) English, there are complementary allophones based on vowel length in particular English words, such as before voiced consonant phonemes in the coda of a syllable [bi:d] and [sɪp]. Vowel length in German, however, is phonemic, and plays an important role in pronunciation. Studying the effects of subtle vowel length differences in English on the pronunciation and reception of German vowels can, thus, provide evidence for the facilitatory effect of the L2 on the L3. In light of this, the present study endeavors to answer the following research questions:

1. Do frequent encounters with L2, particularly where listening is concerned, contribute to greater phonological awareness and a more accurate pronunciation of L3 vowel lengths?
2. Does performance in L2 vowel length tests correlate with performance in L3 tests of the same nature?

³ Phonological awareness can be defined as the ability to attend to, isolate, and manipulate the sound structure of oral language (Toregesen, Wagner, & Rashotte, 1994, as cited in Hipfner-Boucher, Lam, & Chen, 2014, p. 119).

⁴ A second language or L2 is defined as a language that is not currently in the process of being learned (see Hammarberg, 2001).

Few studies exist to date in the Philippines on German Language Learning. Neri (2006) attempted to contrast and provide a description of the phonemic inventories of German and Filipino in order to forecast difficulties in teaching phonetics to German learners in the Philippine context. A number of the study's remarks on phonetic difficulties were replicated in other contrastive analyses between German and Filipino (see Kelz, 1982). This study is an attempt to bridge what is already known about differences in Filipino and German vowel inventories and the prevalent use of English in various contexts and media in the Philippines, which may or may not facilitate phonological awareness and aspects of pronunciation in the L3, German.

1.1 Cross-linguistic Transfer in Tertiary Language Learners

Cummin's 1981 hypothesis that instruction in L_x positively influences the acquisition of a further language has since received nuancing from tertiary language learning studies; many of which have concentrated on the utilization of language learning strategies as well as L2 features while learning the L3 (see Kärchner-Ober 2009; Hufeisen, 2001). Hammarberg (2001), for instance, studied the varying degrees of the utilization of previously learned languages in the acquisition of an L3. In the course of his case study of a native English language speaker's acquisition of Swedish after a significant period of staying in Germany, it was found that German was used as a template for phonetics in the first phases of learning Swedish based on native speaker judgments, whereas an English accent appeared to gradually manifest itself in the subject's advancement, resulting in a group of native speakers accurately identifying an English-speaking background. Hammarberg (2001) determined that the L2 status factor, thus, played a role in learning the L3, resulting from "a desire to suppress L1 as being 'non-foreign' and to rely rather on an orientation towards a prior L2 as a strategy to approach the L3" (p. 36-37). This has been especially prominent when the L1 is perceived not to be 'typologically' similar to the L3, as with non-Indo-European L1s and an Indo-

European L2 (see Marx, 2000; Kärchner-Ober, 2009). Kärchner-Ober's (2009) study is of particular interest to the Philippine context, as it takes a holistic view of language learning in the Southeast Asian context using a case study of a group of foreign language students learning in Malaysia. The study encompassed not only the effects of diverse multilingual backgrounds, in which Chinese, Hindi, and Bahasa Malaysia were acquired or learned in varying competencies, but also in the form of teaching, which relies heavily on rote memory and does not often explicitly introduce learning strategies. The study provides impetus to studying usage patterns of English in the Philippines, which may vary in usage, frequency, context and medium, and how these contribute to learning other European languages.

In Groseva's Foreign Language Acquisition Model (1998), the roles of previously learned languages as well as the learner's own interlanguage are considered as the main sources for which hypotheses about L3 rules are made. The model incorporates not only the assumption of positive and negative transfer from the L1 but also the possibility of a learner's interlanguage that may be activated automatically in production⁵. The conscious or unconscious usage of L2 as a source or testing L3 hypotheses does not, however, exclude an L1 influence; rather, particular aspects that are structurally similar to the L3 are thought to facilitate L3 learning. Utilizing the Foreign Language Acquisition Model in a phonetic context can be complemented with the inclusion of a phonological lexicon (see Caramazza, Miceli, Villa, & Romani, 1987, p. 62), where the spoken form of known words are stored. The existence of such a lexicon has typically been a feature of psycholinguistic research on different spelling tasks such as written spelling, oral spelling, and lexical recognition tasks, although it can arguably guide a phonetic study by providing a means through which disparities between correctly perceived and wrongly produced sounds (or vice versa) can be analyzed. It is possible that a language learner's phonological awareness of the spoken form of words in their phonological lexicon can lead to the correct identification of vowel length contrasts in his or her known languages, yet the learner may exhibit difficulties in replicating these characteristics in spoken language because of interferences from the L1,

⁵ Interlanguage refers to Selinker's (1972) concept of a dynamic system of a learner's language that includes influences due to transfer of training, L1 transfer, and the utilization of strategies such as simplification and overgeneralization of target language rules.

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L2, or the interlanguage.

Because of the linguistic focus of Groseva's model and its ambiguity of the role that internal and external factors play in foreign language production, it may be considered as a variant of traditional contrastive analyses. But in the context of a multilingual society where competence and use of the L1, L2, and L3 differ considerably among the target population, a purely contrastive analysis does not reveal factors that determine habits in L2 usage that could facilitate L3 production. The inclusion of tertiary language learning models that emphasize skills learned while learning the L2, such as Hufeisen's (1998) Factor Model, can substantiate Groseva's model by providing additional context. The Factor Model assigns skill sets and sources of knowledge to each language being learned, with universals and the learning environment as the main factors contributing to L1 acquisition, and learning strategies and experiences as further influences in L2 learning. The difference between L2 and L3, however, consists of the strategies and experiences (habits) acquired while learning the first foreign language (the L2) (Hufeisen, 1998) in addition to the other factors influencing L1 acquisition and L2 learning. Hufeisen, thus, depicts a qualitative difference between learning the L2 and the L3 that draws attention to the complexity of factors involved in language acquisition and foreign language learning that will be of use when describing the context (environment) and metalinguistic knowledge contributing to pronunciation and phonological awareness of the L3.

To summarize, studies in tertiary language learning have expanded beyond a purely behaviorist and contrastive approach to studying language learners and their mistakes and have now incorporated additional factors that may facilitate learning, such as the internal disposition of the learner, learning strategies and experiences, and the greater sociocultural environment. Furthermore, contrastive analyses have also been further nuanced to include the appearance of interlanguage and hypothesis testing utilizing L2 structures in the L3.

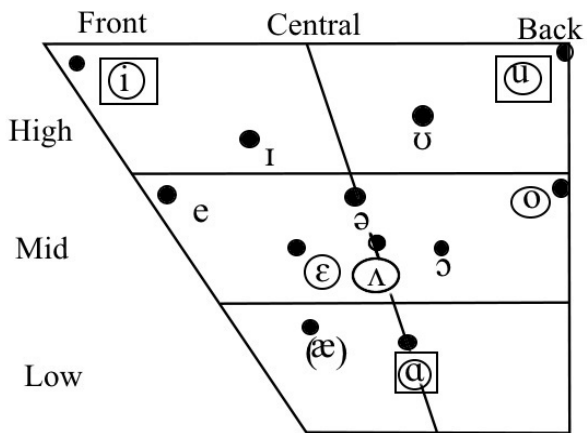
1.2 Contrastive Analysis: Filipino, Filipino English, and German

The Philippine national language, Filipino, possesses a phonemic inventory that is characterized by the lack of a short-long phonological distinction

between vowel phonemes. The current set of five vowel phonemes, /a/, /e/, /i/, /o/, and /u/, are generally believed to have originated from a vowel system comprising of three vowels, /a/, a closed high vowel /i/, and a closed back vowel /u/ (Tayao, 2004; Llamzon, 1997). The vowel inventory of Filipino has often been cited as playing a prominent role in the pronunciation of the variety of English spoken in the Philippines (Philippine English), but to various degrees determined by educational and social factors. Llamzon (1997) notes that there are three (sociolects) of Filipino English, the acrolect, the mesolect, and the basilect, which are primarily based on the educational level and contextual usage of English of the speakers. Acrolects are typically involved in professions that require extensive use of the English language, and also tend to have frequent contact with friends and family in English. The mesolect variety of Philippine English is associated with frequent use of the language in professional or educational situations but not generally in the private sphere, whereas the basilectal group makes the least use of English either in professional or intimate settings. Whereas it has previously been argued that General American English or gAmE (as opposed to RP) is generally used as a guide for Filipino learners of English, the phonetic realization of gAmE phonemes in the Philippine context differs considerably from the 'idealized' native speaker of American English, as phonetic equivalents, including vowels that are the focus of this study, are influenced by various degrees by the vowel inventories of Filipino languages. This implies that instead of Filipino English having a standard inventory of vowels, there are ranges of phonetic realization that are influenced largely by societal factors. However, unlike gAmE, which is argued to be the basis for Philippine English, the Filipino vowel inventory has only five vowels, in contrast to gAmE's 12 monophthongs and seven diphthongs, as depicted in Figure 2, for which there exist minimal pair distinctions based on vowel length.

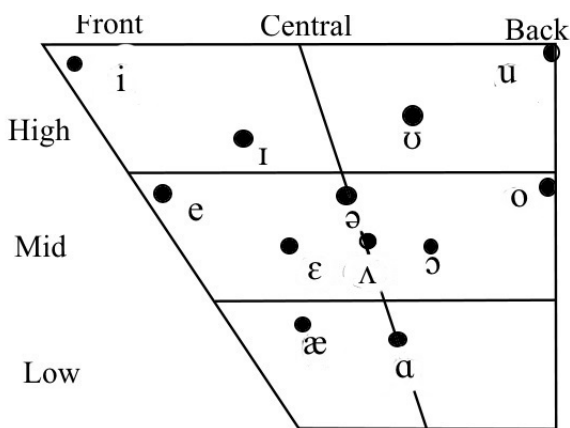
The acrolect, the mesolect, and basilect groups approximate gAmE to varying degrees, the acrolect being the 'closest' variant phonetically. Figure 1 depicts data from Tayao (2008), which show a close resemblance of the acrolectal variety of Philippine English with General American English (see Figure 2 for comparison), where the pronunciation of /æ/ remained dependent on the individual. A reduced vowel inventory is characteristic of the mesolect variety

(depicted by encircled vowels in Figure 1), where only one variety of high front, mid front, high back, and mid back vowels is generally produced. Schwa vowels are also missing from both the mesolect and basilect varieties; the latter of which is associated with the least number of vowels out of all the groups, with only three vowels utilized to represent the 12 General American English vowels, namely, /i/, /a/, and /u/ (see boxed vowels in Figure 1).



() = Deviances in acrolect variety; Circles = Mesolect phonemes; Squares = Basilect Phonemes
Adopted from Tayao (2008), p. 173

Figure 1. Filipino English vowels

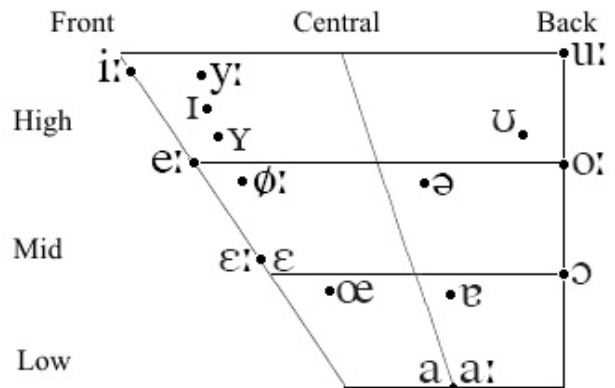


Adopted from Tayao (2008, p. 173)

Figure 2. General American English vowels

Figures 1 and 2 also reveal that vowel length is not a phonemic feature in either Filipino English or General American English, although contrasts have been drawn between vowels in General American English on the basis of both quantity and quality. As mentioned in section 1, there are differences in both the quantity and quality of lax and tense pairs of similar height, i.e., /i/ vs. /ɪ/, /ej/ or /eɪ/ vs. /ɛ/, and /u/ vs. /ʊ/, in English that can be used to test if the phonological awareness gained by learning of both length and quality contrasts in English facilitates distinguishing between long and short vowel phonemes in German.

Figure 3 depicts vowels in German that are coupled with a long or short contrast. Despite German having the highest number of monophthongs in the study, vowel phonemes that are not present in English or Filipino, such as /y:/, were not incorporated in the study, as there were no points of comparison in either the L1 or the L2.



Adopted from Pompino-Marshall (2009)

Figure 3. Standard German vowels

The choice of German phoneme contrasts in the production tests, while not necessarily direct contrasts with their gAmE equivalents, serve as parallels to vowels that are present in both English and Filipino, notably /u/, /i/, and /e/. The German vowel phoneme inventory contains 16 monophthongs; a majority of which have a long-short contrast, as depicted in Figure 3. The vowel contrasts in Figures 1 and 2 allow various hypotheses to emerge vis-à-vis the learning of German, as a length

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contrast in English occurs in instances between high front /i/-/ɪ/, mid front /e/-/ɛ/, high back /u/-/ʊ/, and mid back vowels /o/-/ɔ/; all of which are reduced to one particular vowel sound in at least two varieties of Philippine English. It can, therefore, be hypothesized that acrolect speakers can distinguish and produce both qualitatively and quantitatively distinct vowels in both English and German, whereas the mesolect and basilect group may experience more difficulty.

German vowel phonemes and their phonetic representations differ from English long-short contrasts in two primary ways. First, the production of German long vowels usually is twice as long as their short counterparts (see Nimz, 2014, p. 316), unlike in gAmE where the ratio lies between 1 and 2. Secondly, greater muscle tension is required when pronouncing long

vowels in German, making the fortis/lenis contrast more distinct in comparison to English.

2. Method

2.1 Participants

The study included eleven (11) participants (seven males, four females) in the experimental group taken from German 11-12 classes (corresponding to the A1.2 to A2.1 level classes) at the University of the Philippines, Diliman. A relatively low level of German was selected in order to control for greater metalinguistic awareness, as well as document potential difficulties in the early phases of language

Table 1. LEAP-Q Scores

	English (L2)				German (L3)		
	M	SD	Range		M	SD	Range
Speaking age	3.18	1.35	2.00-5.00		19.09	3.05	17.00-25.00
Reading age	4.55	1.49	2.00-6.00		19.09	3.05	17.00-25.00
Self-reported Proficiency							
Speaking	8.00	1.26	6.00-10.00		2.27	0.90	1.00-3.00
Understanding	8.18	1.17	7.00-10.00		2.27	0.90	1.00-4.00
Reading	8.45	1.21	7.00-10.00		2.73	1.01	2.00-5.00
Factors while Learning							
Friends	7.55	2.16	3.00-10.00		3.64	2.87	2.00-8.00
Family	6.36	3.20	1.00-10.00		1.91	2.77	0.00-7.00
Reading	9.18	2.40	2.00-10.00		5.27	3.17	0.00-10.00
Tapes	4.64	3.64	0.00-10.00		4.64	2.84	0.00-8.00
TV	6.91	3.27	0.00-10.00		1.64	2.34	0.00-7.00
Radio	6.27	3.41	0.00-10.00		1.27	2.41	0.00-7.00
Exposure to Language							
Friends	7.45	2.25	5.00-10.00		2.64	2.34	0.00-8.00
Family	5.27	3.32	2.00-10.00		0.64	1.43	0.00-4.00
TV	7.45	3.24	0.00-10.00		1.64	1.86	0.00-5.00
Radio	8.64	1.63	5.00-10.00		2.09	2.07	0.00-5.00
Reading	9.55	0.82	8.00-10.00		2.64	1.69	1.00-7.00
Language Labs	6.36	4.23	0.00-10.00		4.18	2.18	1.00-8.00
Foreign Accent Perception	5.55	2.16	2.00-10.00		2.73	2.28	0.00-7.00

learning. The participants in the experimental group who were between the ages of 16 to 27 with at least one year of college education took the four tests (i.e., two receptive tests for determining vowel length in German and English, and two productive tests in which words containing minimal pairs distinguished by vowel length are read out loud) in succession in a quiet room.

Two control groups were found for the pronunciation of German and English words in the productive test, which is detailed in section 2.2. The control group for the German test consisted of three male L1-German speakers, while the control group for the English test included three L1-North American English or gAmE speakers. The three participants in the German control group were students at the Bauhaus Universität Weimar at the time of data collection and were between the ages of 19 to 30. All of the German-speaking participants use German as the primary language in school and the sole language with their families, and originated from either Central or South Germany.

The English-speaking control group consisted of two females and one male from North- and/or Northeast America who use English in school and as the sole language with their families. They were between the ages of 18 to 30 during the time of data collection.

The control groups were primarily used for the pronunciation (productive) experiment in order to serve as a frame of reference for the produced vowel lengths of the experimental group from the Philippines, as well as to provide empirical support for vowel length norms described in the latter section. As the receptive tests were designed to elicit insights into the interaction between the perception of the L2 and L3 in the experimental group from the Philippines, the L1 control groups were not used for comparison in the analysis. A two-way comparison for the receptive task would also be insufficient to make any claims of either one or the other language being the primary ‘template’ in perception, as while the target languages involved in the experiment are clearly set in the productive test, reception tests may involve the activation of any number of latent languages or sounds, even in the control group - multilingualism, like bilingualism, is “greater than the sum of its parts” (Hakuta & Bialystok, 1994).

The test subjects in the experimental group were asked to fill out a Language Experience and Proficiency Questionnaire (LEAP-Q) survey (Marian, Blumenfeld, & Kaushanskaya, 2007) containing information on the learning, usage, context, and exposure to languages the respondent already knows. The categories in the survey include 10-point Likert Scale items on self-reported proficiency in speaking, understanding and reading, factors that influenced language learning, and the sources of exposure to languages already known, among other details listed in Table 1.

2.2 Procedure

The experiment consists of a questionnaire and two tests encompassing vowel length contrasts in minimal pairs in German and English. The questionnaire is a modified version of the Language Experience and Proficiency Questionnaire (LEAP) (Marian, Blumenfeld, & Kaushanskaya, 2007) adjusted for the purposes of this study and the Philippine context⁶. The LEAP questionnaire includes self-reports on competency and use of both the L2 (English) and the language in the process of being acquired, L3 (German). The two types of tests (productive and receptive) comprised of two subtests each.

Firstly, a set of oral repetition tests was conducted. A list of English minimal pairs containing the vowels /eɪ/-/ɛ/, /i:/-/ɪ/, and /u:/-/ʊ/ was provided for the participants to read out loud. These words contain different minimal pairs from the stimuli in the second test, in which German minimal pairs including the vowels /e:/-/ɛ/, /i:/-/ɪ/, and /u:/-/ʊ/ are read out loud by a native speaker of German in a repetition test made by the author with PsychoPy (Peirce, 2007). The experimental group was requested to repeat the words uttered by the speaker for the German task. Vowel durations were then automatically recorded and measured with Praat (Boersma & Weenink, 2015). The duration was defined as the length of time between the first vowel peak to the onset of the post-vocalic consonant, determined by a decrease in amplitude and differences in the complexity of the waveform. The German-speaking and the English-speaking control groups were asked to read the same set of words. Their recorded vowel

⁶ Identification with a particular culture was left out as Philippine English is spoken in a postcolonial multilingual environment, making distinctions between particular cultures associated with languages (such as in a North American or European setting) vague.

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lengths were used as a frame of reference vis-à-vis the experimental group.

The English and the German productive tests differ in type in order to ensure that no ambiguities result from grapheme-phoneme errors in the reading of German. It is assumed that this form of transfer is unlikely to occur in the English list of one-syllable minimal pairs because of a lengthy educational background in the English language. The receptive tests serve to measure the sensitivity of the participants toward vowel length in German and English. The recordings of 32 spoken monosyllabic disyllabic minimal pairs of the abovementioned vowels were played in German; 12 of these included the target vowels, and 20 other words served as distractors. The experimental group was asked to select if the first stressed vowel is long or short. Reaction times and error rates are recorded automatically by the program. A second test was conducted in a similar manner as the first receptive test with 12 target words and four distractors, but with English-language stimuli instead.

3. Results

3.1 Productive Tests

The vowel durations of each minimal pair were measured and contrasted with the length of their shorter pair in the form of a ratio. Because of technical difficulties incurred while recording, only six test subjects could produce sufficient data for vowel length measurements (partial data for other participants appear in Table 2). The results were compared to vowel lengths of the control group, three native speakers of German. The data revealed that although the averages of the experimental group fell well within the ratios of the control group, ratios were generally found to be low for closed back and near close near back vowel length contrasts [u:] - [ʊ] in the experimental group. While there was no significant difference between the ranges of the native speakers ($M=1.54$, $SD=1.06$) and the test subjects ($M=1.88$, $SD=1.56$): $t(8) = 0.38$, $p < 0.72$, it should be noted that this particular productive test included an audio component that the experimental group was tasked to repeat. The partial results of P10 and P11 show little variance between [u:] - [ʊ] contrasts despite the direct stimulus, indicating that transfer of L1 phonetic features is possible despite the nature of the task.

Table 2. Vowel length ratios and ranges for German minimal pairs

Ratio	C1	C2	C3	P1	P2	P3	P4	P5	P6	P7	P10	P11
[e:] - [ɛ]	2.64	2.24	2	1.99	1.88	3.81	2.36	4.07	2.16		3.05	
[i:] - [ɪ]	3.07	2.27	2.25	3.073	2.17	3.153	2.60	3.60	2.69			
[u:] - [ʊ]	2.49	2.37	2.3	2.49	2.022	2.516	1.16	1.40	2.06	1.83	0.96	1.02
Range												
High	3.25	2.71	2.70	2.19	2.67	4.08	3.07	5.8	2.94			
Low	2.13	1.83	1.67	1.71	1.38	1.28	1.88	1.18	2.06			

C = Control group, P = Experimental group

Table 3. Vowel length ratios in English

Ratio	C1	C2	C3	P1	P2	P3	P4	P5	P6	P7	P8	P9	P10	P11
[e:] - [ɛ]	1.36	1.22	1.47	1.15	1.09	1.43	1.47	1.7	1.24	1.39	0.83	0.73	1.16	0.89
[i:] - [ɪ]	1.73	1.55	1.34	1.43	1.38	1.63	1.24	2.84	1.75	1.58	1.85	1.02	1.70	1.5
[u:] - [ʊ]	1.32	1.31	1.48	1.13	0.63	0.92	0.66	2.90	1.67	1.21	1.07	0.95	1.54	0.85
Range														
High	1.75	1.55	1.57	1.76	1.79	1.76	1.78	3.47	1.81	1.88	2.7	1.14	1.81	1.68
Low	1.24	1.2	1.28	0.88	0.62	0.84	0.16	1.39	1.18	1.18	0.56	0.61	0.58	0.57

C = Control group, P = Experimental group

Table 3 shows the results for the English language vowel length for both the control group of North American speakers and the experimental groups. In general, English vowel durations had smaller ratios than average German minimal pair contrasts. However, ranges produced by the experimental group (M=1.18, SD=0.55) varied considerably from the control group (M=0.38, SD=0.11) in comparison to the German task, with the mean between ranges revealing significant differences: $t(12) = 2.43, p < 0.03$. The strongest points of contrast between the English results and the German results were incidences of short vowels pronounced longer than long vowels or diphthongs, as well as little or no length contrasts between vowels. In particular, the phoneme [u] proved to have very little length distinction. On the other hand, all German vowels produced by the participants were clearly distinguished by longer vowel durations.

3.2 Receptive Tests

3.2.1 German Vowels: Error Rates and Reaction Times

Data on error rates and reaction times for three vowel contrasts in German were collected in the experiment: /i:/ vs. /ɪ/, /e:/ vs. /ɛ/ and /u:/ vs. /ʊ/. Error rates for German vowels were found mostly for [ɛ] and both [u:] and [ʊ]. While error rates for the vowels did not correlate significantly with higher reaction times ($r=0.33, p < 0.26$), a number of tendencies can be noted: the order of reaction times did not correspond with the error rates, with [i:] rather than [e:] eliciting longer reaction times. The phoneme [i], on the other hand, elicited the lowest error rates but a relatively long aggregate reaction time, along with phonemes producing high error rates: [ɛ] and [u:]. Variables from the LEAP-Q survey were correlated with error rates for German vowels, and it was found that exposure to English-language radio (M=8.64, SD=1.63) revealed a significant correlation with performance in the German-language receptive test (M=0.19, SD=0.11) and the lowering of error rates ($r=-0.55, p < 0.04$), while strong correlations were to be found between the exposure to English-language TV (M=7.45, SD=3.24, $r=-0.49, p < 0.06$) and exposure to English within the family (M=5.27, SD=3.32, $r=-0.47, p < 0.07$) and the lowering of German-language results.

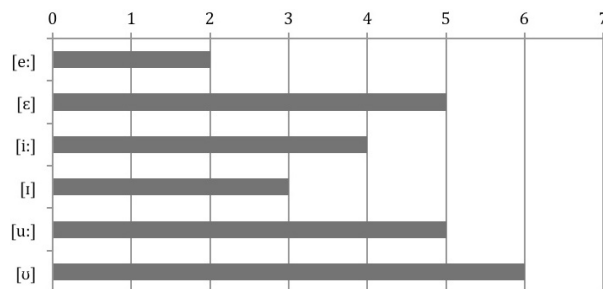


Figure 4. Error rates: German Vowels

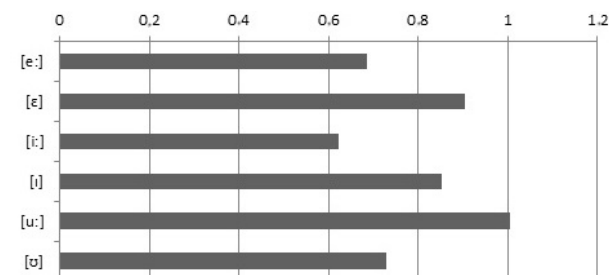


Figure 5. Reaction times: German vowels

3.2.2 English Vowels: Error Rates and Reaction Times

The error rates from English are concentrated in the [i:] phone, followed by vowel length contrasts for [u:] and [ʊ]. As with the German test, no significant correlation between error rates and reaction times was found ($r=-0.01, p < 0.5$). The amount of errors for [i:], however, did not correspond with a longer reaction time. Longer reaction times are observable for [u:] and [ɛ], which correspond with the vowels with the longest reaction times for the German activity. Results from the LEAP-Q survey do not reveal any particular self-reported items of the L2 that increased scores in the English-language receptive test, and no significant correlations were found between English error rates and German error rates, or English reaction times and German reaction times.

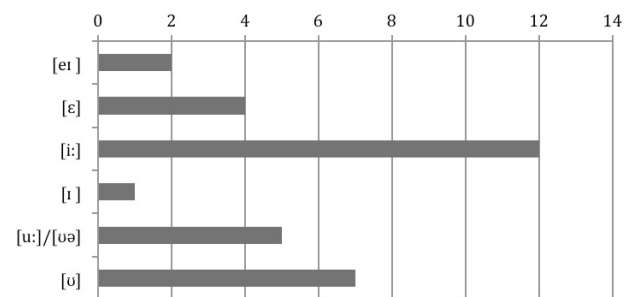


Figure 6. Error rates: English vowels

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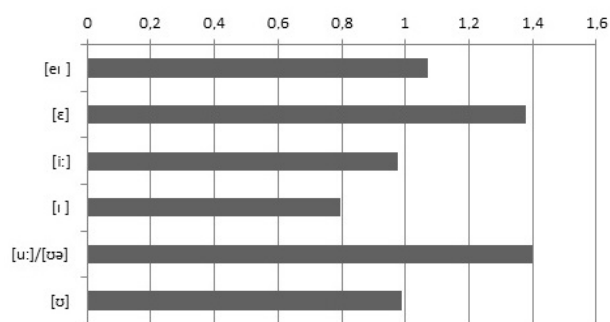


Figure 7. Reaction times: English vowels

4. Discussion

The results from the tests reveal that the influence from L1 is still clear in the production of vowel-length contrasts in the L2, although this is less clear for performance in the L3. This may be attributed to the acceptability of these pronunciations in the sociocultural context of the Philippines, or because of the lack of metalinguistic knowledge on English vowel-length contrasts due to training⁷. However, performance in the L2 did not necessarily predict performance in the L3 in the production task, possibly because of the limitations of the type of stimuli used (the L2 productive test was a read-out loud activity, whereas the L3 oral production exercise presented audio stimuli that were to be repeated). Nevertheless, it appeared that scores for the German receptive task were closely correlated with LEAP-Q survey results for habits relating to English language use, including exposure to English through TV, radio, and conversations within the family, leading to lower error rates in identifying German vowel duration contrasts for those who were frequently exposed to English through these channels. Extended audio exposure may, thus, lead to a higher awareness of vowel length contrasts in other languages. This lends credence to theories that postulate that skills learned through the use of L2 may be utilized in the learning of another language (Hufeisen, 1998); in addition, the influence of factors found mostly in contexts outside the classroom is not irrelevant in developing listening skills. The effects of exposure to English in the family and by way of various media on listening skills provide evidence for the role of sociocultural factors, i.e., the lectal classifications of phonology in language learning. The templating of successfully learned

characteristics of English onto German as hypothesized in Groseva's FLAM (1998), thus, appears to hold water in this case study.

While the production of English vowel durations comprised of L1 interferences in the form of ambiguous vowel length distinctions, these did not reappear in German words, where the ratio of long-short pairs ranged from 1.18 to more than 2. It, thus, appears that an approximation of gAmE-comparable vowel length ratios was characteristic of production in the L3. The meta-knowledge of vowel contrasts from L2 phonological features and the role of other strategies (such as the overgeneralization of rules) appear to facilitate the lengthening of vowels. However, these are not necessarily indicated by results in the reception tests, as no significant correlations were found between English and German results ($n=5$, $p=0.19$). While seemingly counterintuitive, English stimuli produced more errors overall than German vowel stimuli (0.25 was the average number of errors in German, compared to 32 in English), which indicates that the longer length distinctions in German, and potentially the vowel quality, known to be more tense in German long vowels than in English, are likely to have contributed to better performance.

Considering the inclusion of phonetics in the textbooks used in class, Cornelsen's Studio D (Funk, Kuhn, Demme, Christiany, Bayerlein, Lex, & Redecker, 2005), it is not impossible to rule out training in the development of phonological awareness in the L3. While vowel length is explicitly included in German learning materials, it is unknown whether or not the same linguistic awareness was introduced during English language classes. The problem of how L3 difficulties can be resolved, thus, appears to be connected to how the L2 is taught, as Marx (2005) has correctly pointed out.

5. Conclusion

This study provides insights into the acquisition of vowel duration in Filipino learners of German as a third language. It focused primarily on the differences between vowel duration in production (speaking) and reception (listening) and determined that the ability to

⁷ For an example of this in the Southeast Asian context, see Kärchner-Ober, 2009.

distinguish between long and short vowels in German depended partially on the speaker's exposure to the English language in various contexts, showing how sociocultural variables affect the successful use of skills acquired from English in learning German as a foreign language. In terms of production, the participants fared better in German than in English, as the range of vowel duration contrasts in the German task did not significantly differ from the control groups, whereas there was a significant difference between the control and experimental groups in the English task. This could be attributed to two factors: firstly, differences in method, as a recording of the German words was heard prior to the recording in order to avoid graphematic errors being transferred into pronunciation; and secondly, there were technical difficulties that impeded the collection of data for some of the participants in the German task. It is, therefore, recommended that further studies increase the number participants in order to gain more data in the Philippine context on vowel length contrasts, as well as consider the use of suitable primes should the oral word repetition task be used.

As the participants fared better in German than in English in both tasks, it can be assumed that explicit training in phonetics could be an aid in increasing phonological awareness. It is hoped that the findings of this study will lead to the use of more instruments in research to evaluate the role of context, frequency, use and attitude toward language, as well as the environment in which it is learned, especially in highly multilingual contexts such as the Philippines.

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Appendix A. Word List Sets

Test Set 1

German Word List

bieten
bitten
Beet
Bett
Ruhm
Rum
spuken
spucken
Miete
Mitte
Fete
fette

English Word List

bait
bet
cheek
chick
hood
look
Luke
seat
sit
wait
wet
who'd

Test Set 2

German Word List

Beet
Bett
bieten
bitten
Huhn
Hund
Kehle
Kelle
Miete
mitte
Ruhm
rum

English Word List

beat
bit
blade
bled
fool
full
pool
pull
sleep
slip
wait
wet