

## **The Effect of HL Exposure on Content Acquisition, Metalinguistic Awareness, and L2 Motivation, Enjoyment, and Interest in the University Foreign Language Classroom**

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**Abstract:** - Historical linguistics has been shown to support foreign language learners' content acquisition in several areas, including vocabulary acquisition, reading comprehension, and metalinguistic awareness (Crosson&McKeowna, 2016; Masrai, 2016; Pacheco & Goodwin, 2013; Padak et al., 2012). It has been shown to increase students' morphological (Flanigan et al. 2012) and orphological abilities (Arteaga & Herschensohn, 1995), linguistic analysis skills (Kleparski & Kluda, 2008; Schousboe, 1997), target-language literacy skills (Kleparski & Kluda, 2008), and phonological awareness (Laasko, 2015). It has also been shown to increase FL learners' interest and enjoyment of the L2 classroom (Thomas Coffman, 2018). Building upon these publications, the current study explores the relationship between exposure to HL enrichment topics in an intermediate-level undergraduate Spanish course and observable changes in learners' content area acquisition, metalinguistic awareness, and L2 motivation, enjoyment, and interest. The findings suggest that even brief, informal exposure to HL topics related to vocabulary and grammatical concepts covered in the L2 course had a statistically significant effect on L2 and HL content recognition and recall abilities as well as a significant effect on L1 and L2 interest and enjoyment. The investigation did not find a significant relationship between the HL exposure and learner motivation to take a historical or general linguistics course or to take a class in a new foreign language that is historically related to the target L2.

**Keywords:** historical linguistics, L2 enjoyment, L2 motivation, L2 interest, ideal L2 self

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### **I. Introduction**

Historical linguistics (HL) is the linguistic sub-field devoted to the study of a language's past, especially the systems and patterns evidence in its phonological, morphological, semantic, or grammatical changes throughout its history (Historical Linguistics, 2016). Despite its past as a dominating force in 16<sup>th</sup>-through 20<sup>th</sup>-century linguistic study and exploitation, in recent decades it has been relegated to a secondary role in foreign language (FL) pedagogy. Notwithstanding, studies suggest that exposure to HL topics (HLE) is an effective, under-utilized tool to increase language acquisition, metalinguistic competence, motivation, enjoyment, and interest (Arteaga & Herschensohn, 1995; Thomas Coffman, 2018). This study further explores the relationship between HLE in the foreign language (FL) classroom and content acquisition, motivation, enjoyment, and interest.

Historical linguistics can add a level of complexity to vocabulary and grammatical structures commonly covered in FL courses, as an understanding of past changes in the target language can help learners become aware of overarching language change patterns, identify systematic changes in the target language and in languages as a whole, and clarify historically opaque cognates. These factors, in turn, contribute to an increased metalinguistic competence, an important skill in all language learning contexts, but especially in the pursuit of multilingual language acquisition.

Campbell asserted that "[historical linguistics] is fun, exciting, and intellectually engaging (2004, p. 1). Although often seen only in graduate-level linguistics programs, the inherent tendency of HLE to highlight overarching linguistic patterns and to uncover complex historical systematic changes allows students to approach HL as a sort of game, puzzle, or decoding exercise (Arteaga & Herschensohn, 1995; Thomas Coffman, 2018). This makes it uniquely suited to exploration as an enrichment activity rather than a central curricular focus; it also suggests it could be an effective FL learning tool in FL courses much lower than the graduate level.

This survey was accordingly designed to test the effect of HLE on two important facets of the FL learning process: first, on content HL and target language (TL) acquisition, and secondly, on motivation, enjoyment, interest, and other affective factors that are known to affect FL acquisition. Participants enrolled in an intermediate-level Spanish language course at a 4-year research university were exposed to concise HL topics that directly related to target vocabulary or grammatical concepts. These brief lessons were designed as enrichment and were not reviewed or assessed. The lessons occurred approximately once every two weeks. At the end of the semester, learners participated in an elective survey designed to evaluate student abilities to recall, recognize, and produce HL and Spanish vocabulary and grammatical concepts covered during the treatment. A

Likert-scale survey was also administered to gather data related to students' self-reported changes in motivation, interest, and enjoyment. The following hypotheses were used:

*Hypothesis 1:* The HLE will have a significant effect on student recognition of historical linguistics concepts.

*Hypothesis 2:* The HLE will have a significant effect on student production of historical linguistics concepts.

*Hypothesis 3:* The HLE will have a significant effect on factors related to the L2 ideal self envisioned by Dörnyei. These included student interest, enjoyment, and motivation.

The hypotheses were tested with a series of Chi-squared ( $\chi^2$ ) tests of the means of aggregated opinion responses. Results showed strong support for post-treatment gains in affective factors supporting FL acquisition and moderate support for gains in HL and TL content.

## II. Review of Literature

Exposure to and instruction in historical linguistic topics has been shown to improve students' language skills, vocabulary comprehension, reading comprehension, and metalinguistic awareness (Crosson&McKeowna, 2016; Masrai, 2016; Pacheco & Goodwin, 2013; Padak, Bromley,Rasinski,& Newton, 2012). It has also been reported to increase students' morphological (Flanigan, Templeton, & Hayes, 2012) and orphological abilities (Artega & Herschensohn, 1995) in the language classroom. In addition to these content skills, HL instruction has also been shown to improve linguistic analysis (Kleparski & Kluda, 2008; Schousboe, 1997), literacy (Kleparski & Kluda, 2008), phonological awareness (Laasko, 2015), and the ability to analyze patterns (Schousboe, 1997).

The most basic form of HL instruction many students encounter is the study of roots and other basic meaning-bearing morphemes. Padak et al. (2012) observed that more than 60% of English words encountered in academic contexts have easily recognizable morphemes that may help students decipher the meaning of unfamiliar words. The study of roots and other morphemes has been shown to positively impact foreign language vocabulary comprehension (Apel & Werfel, 2014; Crosson&McKeowna, 2016; Paiman, Yap Negee, & Chan, 2015) and acquisition (Pacheco & Goodwin, 2013; Padak et al., 2012).

Pacheco and Goodwin (2013) found that middle school ESL students were able to use their knowledge of etymology and morphemes to deconstruct unfamiliar words and infer their meanings; they therefore encouraged exposing younger, less advanced students to roots and morphology rather than reserving these topics for advanced secondary or university students. This finding was repeated in Crosson and McKeowna (2016), who found that 6<sup>th</sup>-grade students significantly benefitted from instruction in HL. The students were divided into two groups and an initial T-test given to eliminate the possibility of different reading achievement levels between the two groups pre-treatment. Students in the experimental group received instruction on bound Latin morphemes and roots, while the control received instruction on general reading strategies, which included a brief segment on roots. They found that those students with instruction on Latin roots were significantly more likely to recognize roots in a reading passage *and* more likely to grasp that the meaning of the root was connected to the meaning of the target word. Interestingly, the minimal root instruction embedded within the control treatment was enough for many of the control students to take advantage of the information afforded by Latin roots, indicating historical and/or morphemic study need not be a long, intensive unit that takes up much class time to be effective.

In a similar investigation, Paiman et al. (2015) studied the effect of studying Greco-Latin morphological segments, including roots and affixes, on the English of ESL learners. Participants were divided into three groups and received one of three treatments: instruction in Greco-Latin morphemes, instruction in general morphemes, and a control group that studied context clues as a reading strategy. Using a t-test and a 1-way ANOVA to compare the three groups, the investigators reported that the Greco-Latin treatment group scored significantly higher than on their pre-test, the general morphemic treatment group scored slightly—but still significantly—higher, and the context clue treatment group showed no significant difference between pre- and post-test scores. Clearly, any morphemic knowledge is beneficial to aid in reading comprehension, but historical study of Latin and Greek roots and how they have evolved into their English (and therefore presumably their Spanish, French, Italian, and German) descendants, provided the greatest increase in reading comprehension scores (Paiman et al., 2015).

The importance of morphology in vocabulary acquisition was addressed in Masrai's study of morphemic awareness and ESL vocabulary learning, who posited, "Understanding how words are formed is potentially a key component in developing a sizeable second language (L2) lexicon" (Masrai, 2016, p. 1), pointing out that presenting information about the background of a vocabulary word can lead to an increased insight into the overarching morphological structures of the TL and that knowledge of morphological structures is positively linked to vocabulary acquisition.

In his study of 400 high school Arabic-speaking ESL students aged 16-18, Masrai(2016) studied the impact of morphological processing awareness of L2 regular and irregular inflectional and derivational affixes. His results showed a significant difference in participants' ability to decompose regular base words from regular inflections vs. irregular inflections, indicating that morphological knowledge of English inflection contributed to the students' uptake of the target vocabulary.

While many of these studies highlighted the effects of morphemic study on vocabulary in the context of reading comprehension, a receptive skill, Apfel and Werfel (2014) reported on the effect of morphological awareness on productive language. Stressing the importance of morphological, *not* simple phonological and semantic, knowledge to acquire TL vocabulary, the authors reiterated that basic study of high-frequency historical morphemes could be implemented even among young language learners, for instance using the analogy of related family members to illustrate past genetic lexical relationships. They argued for morphological instruction as part of a broader approach to vocabulary instruction, one that included the multiple dimensions of a word unit: phonetic, orthographic, semantic, and morphological (Apfel & Werfel, 2014). The authors' view of lexical complexity and multidimensionality mirrors the theories already discussed, and their brief list of morphological attributes should not be regarded as exhaustive; it follows logically that other lexical features might exist, such as historical, social, phonemic, and others.

Many FL students' introduction to morphology is historical morphology—the study of ancient Latin and Greek roots. This contributes to their general morphological awareness, or ability to deconstruct, analyze, manipulate, and reconstruct word structures from their smallest units up (Carlisle, 1995). Flanigan et al. (2012) specified that morphological knowledge was essential to the development of vocabulary. Morphological awareness has shown consistent positive effects on reading comprehension (Apfel & Werfel, 2014; Flanigan et al., 2012) and occasional positive effects on word recognition and spelling (Apfel & Werfel, 2014). Historical morphological awareness also contributes to the ability to accurately analyze the changed modern descendants of older morphemes. Words in many Proto-Indo-European (PIE) languages, especially many popular subjects of FL study such as Spanish, French, German, Italian, and Portuguese, preserve in their orthography a wealth of historical semantic information (Venezky, 1999).

Due to the importance of morphology, especially historical morphology, on vocabulary comprehension and acquisition, several researchers have taken a stand for broader inclusion of historical-linguistic topics in FL study. Several advocated introducing basic historical morphology at early ages—1<sup>st</sup> grade (Pacheco & Goodwin; 2013), 4<sup>th</sup> grade (Flanigan et al., 2012), or elementary school in general (Artega & Herschensohn, 1995). According to Flanigan et al. (2012), explicit morphological instruction aided in students' ability to decode unfamiliar words. Even more notable, it allowed students to learn *clusters of words* rather than single words one at a time; for instance, an English student learning about roots from the Latin *faccere* (“to do/to make”) would learn the terms *fact*, *confection*, *confectionary sugar*, *factory*, *manufacture*, *(dis)satisfactory*, and *(im)perfection* together as a cluster bound together by their common historical ancestry and could further connect these terms with new vocabulary containing the same root.

**Orthography.** Relatedly, Artega and Herschensohn (1995) studied the effect of historical linguistics instruction on French L2 students' orthography. Seeing their students struggle with French spelling, the researchers hypothesized that synchronic French orthography was more difficult than when viewed diachronically. In a study of university beginning-level French, they divided the subjects into two groups and gave one group historical linguistic information about target vocabulary words. The other group received the same vocabulary words with traditional vocabulary teaching exercises, but no historical information about the patterns they were seeing and trying to reproduce. After a French vocabulary spelling test, the average of each group's scores was compared. They found that participants who had received the HL treatment performed significantly higher on French orthography tasks, as such instruction lessened the opacity of many French-English cognates and facilitated in the recognition of systematic correspondences between historical French or Latin orthography and the modern French versions.

**Syntax.** Historical linguistics can also facilitate the acquisition of TL grammar and syntax. Lightfoot argued that such instruction provides “clarity and regularity” (2007, p. 34) for otherwise opaque grammatical features or structures. It also helps students develop higher-level analytical skills, link patterns between the past and the present, and comprehend the TL as the logical result of a series of patterned changes rather than as an arbitrary syntactical system (Lightfoot, 2007). Furthermore, Rissanen (1997) claimed historical linguistics answers not only *how* the language developed but *why*, allowing students to make meaning out of metaphorical grammatical chaos and practice higher-level thinking skills.

**Other higher-level thinking skills.** Aside from gains in FL morphology, vocabulary, orthography, and syntax, historical linguistics instruction has been shown to positively contribute to the development of higher-level thinking processes and learning strategies applicable to all academic content areas, including but not limited to foreign language. These include linguistic analysis (Kleparski & Kluda, 2008; Schousboe, 1997), FL

syntax (Lightfoot, 2007), literacy (Kleparski & Kluda, 2008), phonological awareness (Laasko, 2015), and the ability to analyze patterns (Schousboe, 1997).

Among these, linguistic analysis is an especially crucial skill for FL learners, and historical linguistics is an excellent way to hone and practice this skill in a low-pressure, low-risk setting (Kleparski & Kluda, 2008). Learners could analyze historical texts at various levels: morphological, segmental, thematic, cultural, syntactical, phonological, orthographical, etc. Schousboe (1997) mentioned several ways in which historical linguistics study could be expected to improve overall linguistic analysis skills, such as providing a deeper understanding of how linguistic patterns fluctuated over the time, the dispersion of linguistic features, and the acceptance of linguistic innovation as a social process. In one of the only available articles on a non-PIE language branch, Laasko (2015) explored the effect of historical etymological instruction on L2 Finno-Ugric studies. He claimed that a grasp of the historical background of a language may help students decode morphological or phonological variations, and that historical language instruction led to increased linguistic awareness, higher ability to analyze and recognize patterns, and superior ability to distinguish native structures.

*Effects of Historical Instruction on FL Enjoyment and Motivation.* Anecdotal evidence from these historical linguists publishing and teaching clearly indicates the possibility of a statistical effect of HL instruction on FL enjoyment and motivation. Thomas Coffman (2018) found that middle and high-school students reported heightened levels of FL enjoyment, motivation, and self-efficacy after a one-week HL enrichment unit. In his *Handbook of Historical Linguistics*, Campbell (2004) used the word “fun” (p. 1), reporting that many historical linguists are attracted by the intellectually stimulating work. Lightfoot (2007) anecdotally reported positive responses to historical enrichment from his university German students, and among the pedagogical benefits of historical linguistics instruction mentioned by Arteaga and Herschensohn (1995) was the fact that such instruction often takes the form of an enrichment activity, and as such is often perceived by learners as a kind of game, which can increase their interest and motivation. This has clear implications for the positive development of learners’ L2 Motivational Self System (Dörnyei, 2005; 2009), specifically for the L2 ideal self and L2 learning environment, as explored below.

### **III. Methodology**

*Theoretical Framework.* This study adopted the theoretical lens of Dörnyei’s works, notably his L2 Motivational Self System (Dörnyei 2005; 2009) and its connections to his Motivational/Attitude Variables (Dörnyei, 1990). It explored the effect of HLE on foreign language enjoyment, interest, and motivation as contributors to the ideal L2 self and the ideal classroom environment. Recent research suggests Dörnyei and his L2 Motivational Self System is a useful lens through which to view the effect of exposure to historical linguistics on the L2 selves of foreign language students (Thomas Coffman, 2018).

*Hypotheses.* For the purpose of this study, the following hypotheses were used:

*Hypothesis 1:* The HLE will have a significant effect on student recognition of historical linguistics concepts.

- H1-0: The HLE will have no effect on student recognition of historical linguistics concepts.
- H1-1: The HLE will have a significant effect on student recognition of historical linguistics concepts.

*Hypothesis 2:* The HLE will have a significant effect on student production of historical linguistics concepts.

- H2-0: The HLE will have no effect on student production of historical linguistics concepts.
- H2-1: The HLE will have a significant effect on student production of historical linguistics concepts.

*Hypothesis 3:* The HLE will have a significant effect on factors related to the L2 Self envisioned by Dörnyei.

- H3-0: The HLE will have no effect on factors related to the L2 Self.
- H3-1: The HLE will have a significant effect on student interest.
- H3-2: The HLE will have a significant effect on student enjoyment.
- H3-3: The HLE will have a significant effect on student motivation.

*Study Design & Model.* This study utilized the mixed-method design of the sequential transformative strategy model (Creswell, 2007). The theoretical foundation of this model allows for the prioritization of quantitative data in reporting and analyzing results despite the collection and use of qualitative data (Creswell, 2007). Accordingly, this study focused on quantitative methods of analyzing and reporting data.

*Data Collection and Analysis.* Quantitative data were gathered via a short researcher-created survey of 16 items. Seven of these were short-answer or multiple-choice questions about HL content that had been covered over the course of the semester-long intermediate Spanish course. These items were divided into recognition and production tasks: the recognition tasks required only recall of some element of the HLE from an

array of choices, while the production tasks required participants to generate their own responses, often based on historical backgrounds of words or concepts that had only been mentioned briefly or in passing. The recognition tasks were coded according to the number of answers per response, while the production tasks were coded according to whether the responses were correct, partially correct but containing incomplete or inaccurate information, or incorrect. A series of Chi-squared ( $\chi^2$ ) tests for goodness of fit were run on the actual vs. expected number of coded responses to ascertain whether there were a significant difference between the observed and expected frequencies of responses.

Nine of the data collection survey items were Likert-scale survey statements with responses arranged according to the traditional 5-scale Likert scale labels Strongly Disagree (SD), Disagree (D), Neutral (N), Agree (A), or Strongly Agree (SA). The responses were recorded and coded numerically, ranging from 1 (SD) to 5 (SA). Survey items responses were then grouped and labeled according to student responses of SA/A and SD/D. Finally, a series of non-parametric one-sample  $\chi^2$  tests were run to analyze differences between observed and expected frequencies of responses.

The non-parametric  $\chi^2$  tests of independence do not require equally distributed data to meet assumptions of validity, making it ideal for testing the data gathered in this investigation. It is robust when dealing with violations to the assumptions of evenly distributed data required for many other statistical analyses. The small number of categories (4 for multiple choice recall items and 5 for Likert scale items) contribute to the robustness of results. As the  $\chi^2 p$  value gives a significance statistic, it was followed with a Cramer's V nominal by nominal strength statistic to measure the effect size of the results.

*Participants.* Participants were members of an intermediate-level Spanish 202 course at a large four-year public university in the United States. The final number of participating respondents was  $N = 37$ . These respondents were undergraduates between the ages of 18 and 22 who were studying Spanish as one of multiple majors (8%), as a minor (70%), or as an elective (22%). None were studying Spanish as their sole major area of study. All were native English speakers taking Spanish as an L2. The majority (73%) were rarely absent from class, defined as 0-2 absences during the semester. All the participants were passing the course at the time of data collection, with most (95%) receiving an A (65%) or B (30%), 5% receiving a C, and none receiving a D or F. Participant grades reflected quizzes, homework scores, written assessments, oral projects, and daily participation throughout the duration of the course.

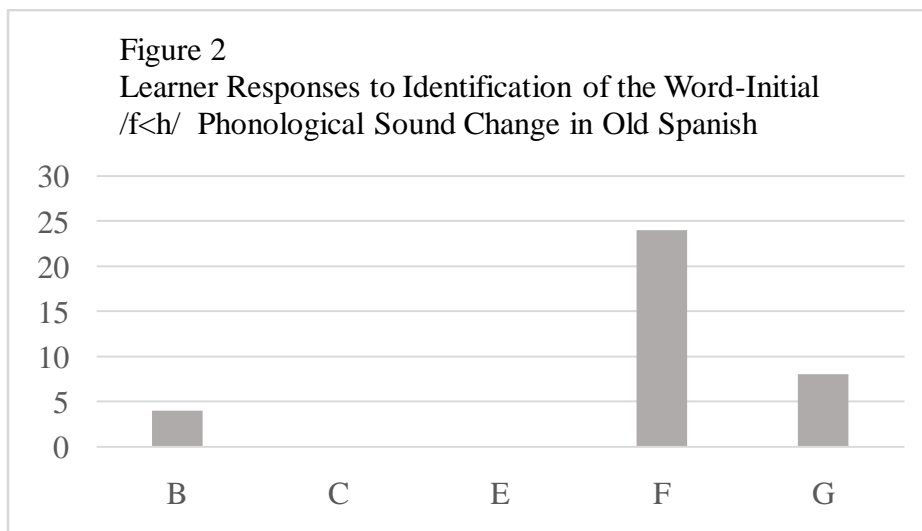
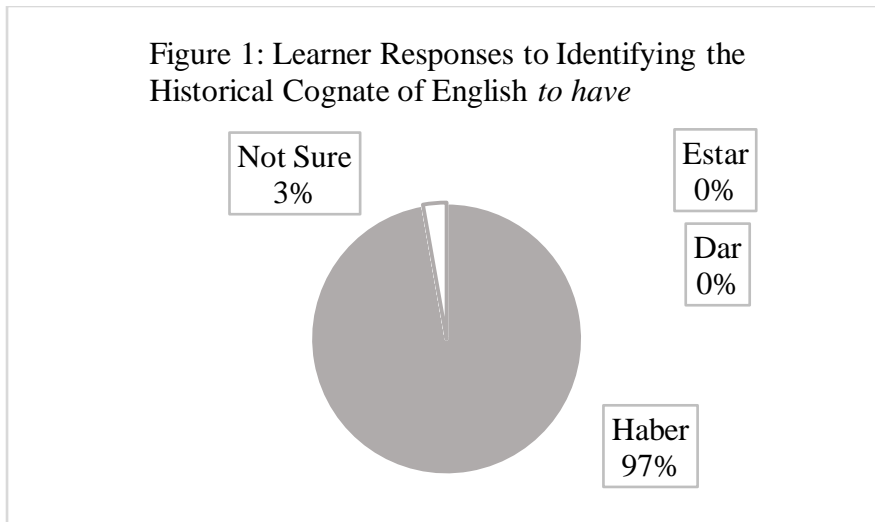
*Treatment.* Given the already-overloaded curricula of many university language courses, the HLE treatment in this study was designed as an enrichment activity rather than a stand-alone unit of curriculum. HLE was informal and low-stress; no homework was assigned based on the HL topics discussed, and the HL concepts visited were not assessed on semester quizzes. Throughout the semester, approximately once every two weeks, the researcher briefly explained the history of the grammar and vocabulary targeted in the course. These included the following:

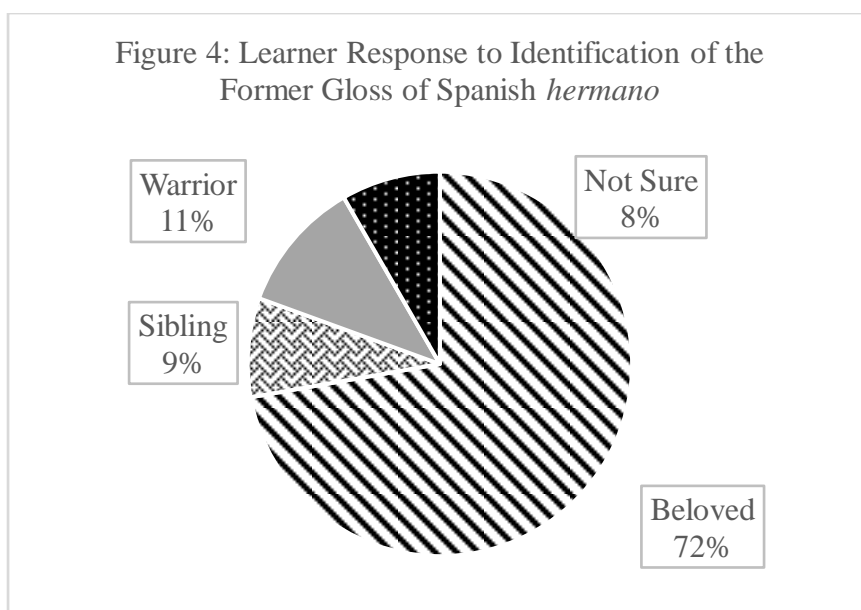
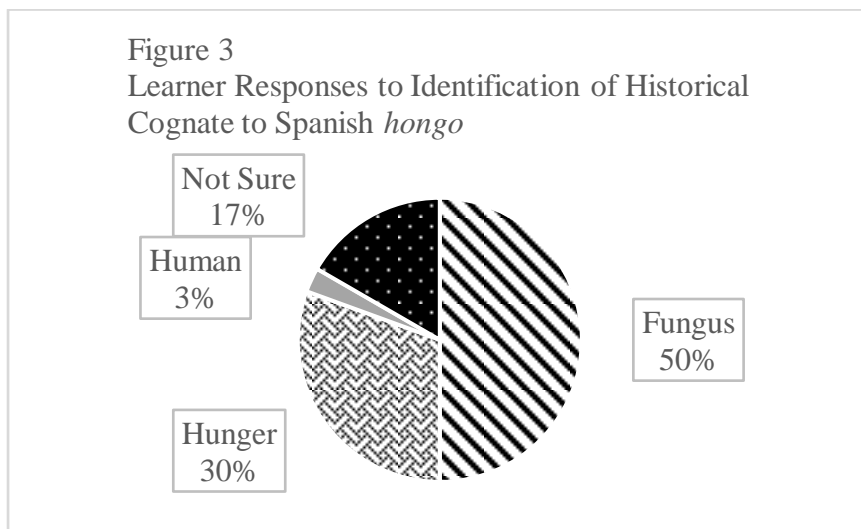
- *Haber:* Connections to German *haben*, English *have*, and French *avoir* were explained when the verb was encountered as part of the Spanish present perfect and past perfect tenses. A history of the Spanish future tense formed by compounding verbs with a post-verbal conjugation of *habere* in Latin and its successor *haber* in Spanish was also introduced to help student memorize future-tense Spanish verbs more easily by connecting to their prior knowledge of the present-tense indicative forms of *haber*.
- *Tener:* This verb's historical connection to many English words, including *sustain*, *maintain*, and *contain*, was discussed, as well as its eventual semantic shift to replace *haber* in meaning to have.
- *Hacer:* This verb's historical connections to French *faire*, Latin *faccere*, Spanish *satisfecho/a*, and English words with the root *-fect* or *-fact*, such as *fact*, *factor*, *artifact*, *confection*, *perfect*, *perfection*, *defect*, *manufacture*, *factory*, *pacific*, etc. were discussed, as well as an explanation of semantic splitting illustrated by the historical divergence of Spanish *hecha* / *fecha*.
- */f/ < /h/ :* Several words in Spanish that suffered this change were examined and students worked in groups to guess English words that are cognates through their shared Latin heritage.
- *Chapter vocabulary lists:* At the beginning of each chapter, when learning new target vocabulary, students were exposed to the history behind 5-6 of the new vocabulary items in an attempt to deepen their cognitive understanding of the concept and its glosses in English and Spanish.

At the end of the semester, participants could elect to take the optional survey data collection instrument; the survey gathered information on participant recall and production of HL topics mentioned during the semester as well as Likert-style opinion statements to ascertain participant reactions to the HLE. Responses were collected for 37 participants. The N responses were removed from the data, the remaining responses were grouped into SA/A and D/SD response categories, and the 2 groups were coded and analyzed for patterns in Excel and IBM SPSS Statistics software (version 25) with a series of  $\chi^2$  tests comparing the means of the 2 groups. The results are reported below.

#### IV. Results

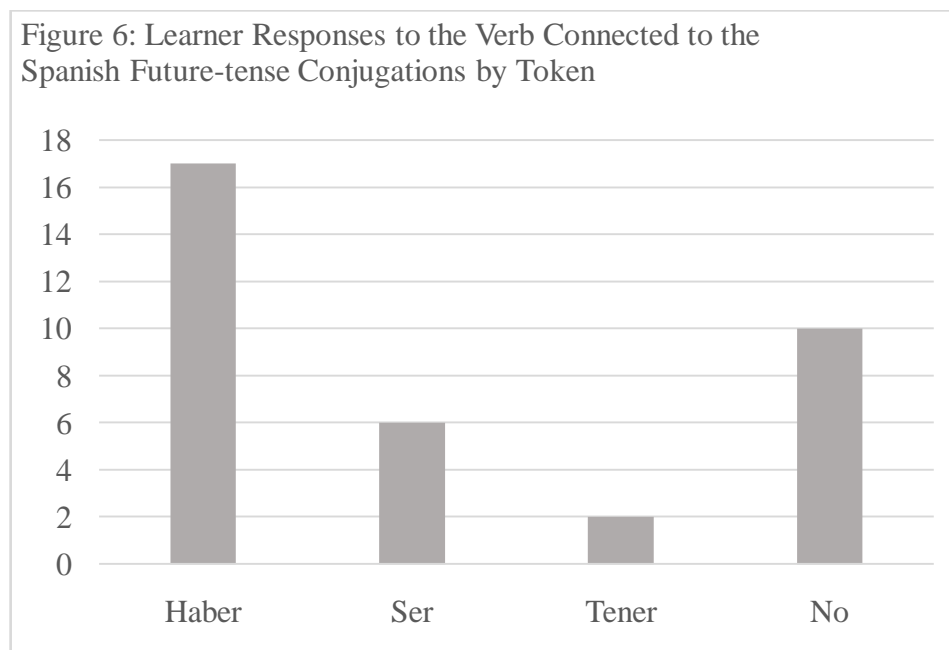
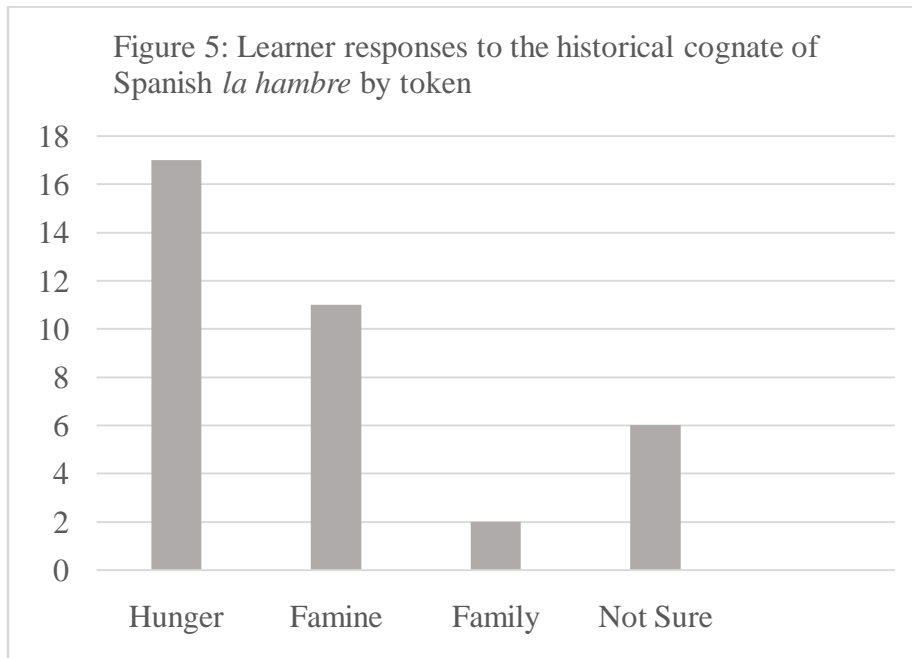
*Chi-Squared Results: Recognition and Production of HL Content.* Interpretation of the  $\chi^2$  tests revealed participants often recognized information from the HLE covered throughout the semester. For instance, when given four choices of common Spanish verbs, participants correctly identified the historical relative of the modern English verb *to have* at a significant rate,  $\chi^2(1, N=37) = 34.53, p = 0.00001$  (Figure 1). They also correctly recalled the sound that historically preceded many Spanish h-initial words,  $\chi^2(1, N=37) = 8.8, p = .01$  (Figure 2). Similarly, when presented with four options requiring recognition of the correct English relative of *el hongo*, most correctly identified the historically related word, *fungus* (Figure 3). This result was significant,  $\chi^2(1, N=37) = 10.2, p = .02$ . As viewed in Figure 4, participants were likewise able to identify the correct historical meaning of *el hermano* at a significant rate  $\chi^2(1, N=37) = 16.19, p = .001$ .





Results additionally indicated participants had more difficulty with production than recognition tasks. Although the majority did *recognize* the correct answer, they were not able to *produce* an accurate summary of how *hermano* suffered semantic shift in statistically significant numbers,  $\chi^2(1, N = 37) = 1.67, p = .44$ . They were likewise unable to reproduce statistically significant correct information from the HLE when they were asked to produce the history of the Spanish verb *tener*,  $\chi^2(1, N = 37) = 3.74, p = .053$ . In both these instances, the correct answer was often given, but  $\chi^2$  analyses revealed the difference between the expected and the actual outcomes was not statistically significant.

Even when given a recognition task rather than a production one, participants were not always able to correctly recall the correct information from the HLE during the semester. When faced with the decision to select the current English gloss, *hunger*, or the opaque historical English cognate, *famine*, for Spanish *hambre*, participants overwhelmingly selected the red herring survey item (Figure 5). When recalling the history of the Spanish future tense, most participants recognized the correct verb (Figure 6), but not at a significant rate,  $\chi^2(1, N = 37) = 6.52, p = .09$ .



*Chi-Squared Results: Likert Survey Items.* Once statistical analyses had been run on the actual vs. expected outcomes on the recognition and production task items, Likert-scale survey items were grouped and labeled according to student responses of SA/A, N, and DS/D. The neutral (N) responses were thrown out and the frequency of SA/A tokens were compared to the hypothesized norm of expected responses rates to determine whether the differences observed in the initial descriptive results were statistically significant. Significance was found for four of the seven statements.

Results revealed significantly high levels of interest and enjoyment. Statements with significantly higher than expected numbers of SA/A survey responses included learner interest in HL,  $\chi^2(1, N = 23) = 17.23, p = .00003$ , interest in learning more about the history of Spanish,  $\chi^2(1, N = 28) = 8.49, p = .0036$ , and interest in learning about the history of English,  $\chi^2(1, N = 30) = 4.00, p = .045$ , as well as increased enjoyment of the overall L2 classroom,  $\chi^2(1, N = 23) = 17.23, p = .00003$ . Conversely, survey items without significantly higher rates of SA/A responses as compared to D/SD responses included the ability to make connections among the TL



and other languages  $\chi^2(1, N=28) = 2.88, p = .089$ , a plan to take historical or linguistics courses if offered,  $\chi^2(1, N = 25) = 0.32, p = .57$ , and an interest in taking another language related to Spanish,  $\chi^2(1, N = 29) = 0.07, p = .79$  (Table 1). Succinctly put, these results indicate the HLE contributed to increased interest and enjoyment in the L2 classroom but that these factors did not contribute to increased motivation to take subsequent language or linguistics classes.

Table 1  
*Chi-Squared ( $\chi^2$ ) Statistics and Values of Likert Scale Expected vs. Real Values (p) and Effect Sizes (r)*

|   | N  | df | $\chi^2$ statistic | p value  | Pearson's r      |
|---|----|----|--------------------|----------|------------------|
| increased interest in HL  | 23 | 1  | 17.23              | .000033* | .87 <sup>†</sup> |
| increased interest in the history of Spanish                      | 28 | 1  | 8.49               | .045*    | .55 <sup>✓</sup> |
| increased interest in the history of English                      | 30 | 1  | 4.002              | .0036*   | .37              |
| increased enjoyment of the L2 classroom                           | 23 | 1  | 17.23              | .000033* | .87 <sup>†</sup> |
| increased ability to make connections among languages             | 28 | 1  | 2.88               | .089**   | .32              |
| a plan to take HL or general linguistics course                   | 25 | 1  | .32                | .57      | .11              |
| increased interest taking an L3 language course related to the TL | 29 | 1  | .069               | .79      | .05              |

\*Result is significant,  $p \leq .05$

\*\*Result approaches significance,  $p \leq .10$

<sup>†</sup>Indicates a strong positive relationship

<sup>✓</sup>Indicates a moderate positive relationship

## V. Discussion

The results of this study indicate that even brief exposure to historical linguistics concepts related to topics of L2 and FL study can lead to increased interest in both the learner's native and foreign language. Participants were exposed to brief, informal HL lessons that directly related to topics of L2 study in an intermediate university Spanish course. Although they were not required to take notes and were never assessed on the information delivered, at the end of the semester, statistical analyses revealed a statistically significant number of learners experienced an increased interest in both L2-specific Spanish historical linguistics and the history of their native language (in this case, English). The participants also indicated the HLE significantly increased their enjoyment of the L2 classroom. According to Dörnyei's robustly researched L2 Motivational Self System (Dörnyei 2005; 2009) and Motivational/Attitude Variables (Dörnyei, 1990), both interest and enjoyment positively contribute to students' ideal L2 selves and L2 motivation. The HLE affected these factors; ergo, the HLE increased learners' L1 and L2 interest and enjoyment of the FL classroom, which contribute to the L2 ideal self and sense of the L2 classroom environment.

In addition to positive growth in L2 enjoyment and interest in the history of the L2 and of participants' native language, the treatment also yielded significant results in participants' ability to recall HL content knowledge of both grammatical and lexical L2 items. This is in keeping with the previous results showing higher interest and enjoyment levels; it is relatively easy to remember facts that are interesting or engaging to learn. These findings corroborate the findings of Arteaga and Herschensohn (1995), who claimed that instruction in HL led to greater content knowledge recall and recognition, and the results show that HLE is an effective means of enhancing FL instruction and supporting FL acquisition.

These results notwithstanding, this investigation failed to produce positive results in the recognition abilities of other HL and FL content areas, specifically in the instance of the quite opaque Spanish/English cognate *hambre/famine*. This suggests that, in cases where a series of morphological or phonological changes have resulted in a difficult-to-recognize cognate pair, HL instruction may need to be more targeted and in-depth to produce measurable results. In cases where time and/or curriculum restraints do not allow for such intensive HLE, HL may not be the best means of learning new FL vocabulary items; more traditional, proven vocabulary acquisition teaching methods may be better suited in these cases. In addition, more complex learning processes such as production (rather than recall or recognition) were not significantly increased due to the HLE treatment, suggesting that such brief exposure is not enough to reach higher-level educational objectives and might need to be more focused, concentrated, or extensive to yield substantial results.

This study likewise failed to show that such limited, casual encounters with HL topics increased metalinguistic awareness or motivation to take future linguistic or FL courses. Results additionally indicated participants had more difficulty with production than recognition tasks. Although the majority did *recognize* the

correct answer, they were not able to *produce* an accurate summary of how *hermano* suffered semantic shift in statistically significant numbers,  $\chi^2(1, N = 37) = 1.67, p = .44$ ). They were likewise unable to reproduce statistically significant correct information from the HLE when they were asked to produce the history of the Spanish verb *tener*,  $\chi^2(1, N = 37) = 3.74, p = .053$  (Figure 6). In both these instances, the correct answer was often given, but  $\chi^2$  analyses revealed the difference between the expected and the actual outcomes was not statistically significant. In other words, the data showed that even a brief, informal introduction to HL topics throughout the semester supported HL and TL content recognition and recall but not production.

This study suggests, then, that even brief exposure to HL topics as they facily relate to target L2 lexical and grammatical concepts had significantly positive results at the end of the semester-long course. This shows that HL topics need not take much classroom instruction time or even be a formal part of the L2 curriculum to yield positive, measurable results for L2 learners and supports the claim that HLE is underutilized in FL classrooms and is a powerful tool that can facilitate constructive changes in FL interest and enjoyment.

## VI. Conclusion

L2 learning in a university-level intermediate Spanish course was enhanced by HLE, especially given the temporal and practical restraints of the brief, informal treatment style. Learners were introduced to historical linguistic lexical, grammatical, phonological, and morphological topics as they related directly to vocabulary and grammatical concepts being taught in the course. This HLE took place approximately once every 2 weeks for the duration of the course. Student participation was voluntary and assessed at the end of the semester-long treatment period via researcher-generated survey, which included multiple-choice and short-answer content-area recognition, recall, and production tasks, evaluating retention of HL topics covered during the treatment in addition to soliciting participant auto-evaluation of changes in L2, FL, and HL interest, enjoyment, motivation, anxiety, self-confidence, self-efficacy, metalinguistic competence, and global competence. The latter data tokens were collected via a 5-point Likert scale represented by SA, A, N, D, and SD; N tokens were eliminated and the remaining responses were grouped into SA/A and D/SD categories and then analyzed using SPSS version 25.

After the HL treatment, participants were able to accurately identify *haber* as the historical cognate of *to have*,  $\chi^2(1, N = 37) = 34.53, p = 0.00001$ , and the f-h word-initial phonological change,  $\chi^2(1, N = 37) = 8.8, p = .01$ , the *fungus/hongo* cognate pair,  $\chi^2(1, N = 37) = 10.2, p = .02$ , and the semantic changes suffered in the history of *el hermano* at a significant rate,  $\chi^2(1, N = 37) = 16.19, p = .001$ . Results also showed that participants had more difficulty with production than recognition tasks and performed less well on recognition tasks with cognate pairs that were quite opaque in their modern variations, having suffered more than one phonological change in their development, such as was the case with *famine/hunger*.

Analysis of Likert-survey scalar response items revealed significantly higher levels of interest and enjoyment after the HLE treatment period when mean response rates were compared to a hypothesized mean. Statements with significantly higher post-treatment response means were learner interest in HL topics,  $\chi^2(1, N = 37) = 17.23, p = .000033$ , interest in learning about the history of the L2 Spanish language,  $\chi^2(1, N = 37) = 8.49, p = .0036$ , and interest in learning about the history of the L1 English language,  $\chi^2(1, N = 37) = 4.002, p = .045$ . Results additionally showed increased enjoyment of the L2 classroom,  $\chi^2(1, N = 37) = 17.23, p = .00003$ . However, the data analyses did not show significant differences in learner metalinguistic awareness, described as an increased ability to make connections among the TL and other languages,  $\chi^2(1, N = 37) = 2.88, p = .089$ . Nor did said results show increased motivation to take historical or general linguistics course if offered,  $\chi^2(1, N = 37) = 0.32, p = .57$ , or a higher interest in taking another FL related to Spanish,  $\chi^2(1, N = 37) = 0.069, p = .79$ . The HLE contributed to increased interest and enjoyment in the current L2 classroom but did not contribute to increased motivation to take subsequent language or linguistics classes. Therefore, the following hypotheses were accepted or rejected according to the results.

*Acceptance or Rejection of the Hypotheses.* Per the results of the  $\chi^2$  tests utilized to test whether a statistically significant relationship existed between HLE and L2 learners' recall, recognition, and production of HL concepts in addition to factors related to positive L2 ideal selves and L2 classroom experiences, the following hypotheses were either accepted or rejected.

*Hypothesis 1: The HLE will have a significant effect on student recognition of historical linguistics concepts.* The null hypothesis is rejected, and the first alternative hypothesis is accepted.

*Hypothesis 2: The HLE will have a significant effect on student production of historical linguistics concepts.* The null hypothesis cannot be rejected by the data; it is therefore accepted.

*Hypothesis 3: The HLE will have a significant effect on factors related to the L2 Self envisioned by Dörnyei.* This null hypothesis is rejected. The first alternative hypothesis, H3-1: *The HLE will have a significant effect on student interest*, is accepted. The second alternative hypothesis, *the HLE will have a significant effect on student enjoyment*, is likewise accepted. The third and final alternative hypothesis, *the HLE will have a*

significant effect on student motivation, cannot be proven by the data obtained in this investigation and is subsequently rejected.

*Limitations of the Study.* This study population was limited to undergraduates in an intermediate-level Spanish language course at a 4-year research university in the United States. All were L1 English speakers and almost none had L3+ experience. This study did not explore the effects of the treatment on elementary, secondary, and post-graduate language learners. These factors limit the applicability of the results to monolingual English speakers learning Spanish or, presumably, another closely-related Romance language, in a university L2 context.

*Recommendations for Future Study.* Prior research on the positive effects of HLE on FL content acquisition (Arteaga & Herschensohn, 1995) and L2 ideal self concepts (Thomas Coffman, 2018) suggests that HLE would be expected to yield measurably positive results in study populations as young as middle school. The extracurricular, enrichment-based style of HLE used in this study would be well suited to trials run within the confines of secondary middle- and high-school basic language courses. Given this, it is logical to recommend this study be adapted and replicated at the secondary level. The study would likewise benefit from trial at even more varied ends of the educational spectrum at the elementary and graduate levels to test age limits of HL efficacy rates while ascertaining the potential existence of age- or level-dependent optimal windows for HLE. Finally, these results should be tested to gauge the effects of HLE on L2 versus multilingual learners and synchronically to explore implications for the Ideal Multilingual Self and the Multilingual Self Motivational System as discussed in Henry (2017) and Ushioda (2017).

*Final Remarks.* These results support prior literature that has found positive connections L2 interest, enjoyment, motivation, and content acquisition. Even brief exposure to HL concepts relative to the L2 lexical and grammatical concepts covered in class yielded some statistically significant results. It therefore shows that HL topics need not take much classroom instruction time or even be a formal part of the L2 curriculum to yield positive, measurable results for L2 learners. HL has the potential to be a powerful learning tool that supports TL vocabulary and grammar acquisition and engenders positive changes in FL interest and enjoyment.

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