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Heritage Language Learners and Automaticity: The Use of "por" and "para"

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Heritage Language Learners and Automaticity: The Use of "por" and "para"

Abstract/Resumen

The purpose of this study is to investigate the use of the Spanish prepositions *por* and *para* (P&P) by heritage-language (HL) learners to analyze whether they demonstrate automaticity in their application, as is common with L1 Spanish speakers (i.e. "it just sounds right"), or if they rely on the conscious, declarative knowledge of the prescriptive uses of these prepositions, as is common with speakers for whom Spanish is an L2. Upper and lower HL learners and upper and lower FL learners (non-HL learners) were asked to complete a cloze test and a grammaticality judgment task and were asked to explain their judgments. The explanations given by students provide a glimpse into the type of knowledge, whether declarative or procedural, that students tap into when using P&P. This study found that while FL learners relied on declarative knowledge in the application of P&P, HL learners demonstrated a level of automaticity and procedural knowledge in their use of these prepositions. This suggests that HL learners have internalized the uses of P&P through communicative exposure throughout their childhood, which may be more effective than the explicit instruction FL learners have received on these structures. This study aims to add to the growing body of literature on heritage language processes and development.

Keywords/Palabras clave

heritage learners, L2 learners, SLA, declarative vs. procedural, *por* and *para*

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1. Introduction

The objective of this study is to investigate the use of the Spanish prepositions *por* and *para* (P&P) by heritage language (HL) learners to analyze whether they demonstrate automaticity and rely on procedural knowledge in their usage of P&P, as is common with L1 Spanish speakers (i.e. “it just sounds right”), or if they rely on the conscious, declarative knowledge of the prescriptive, explicit rules governing use of these prepositions, as is common with L2 speakers (i.e. “*para* is always used for deadlines”). For the purpose of this study, an HL learner is defined as a student of Hispanic background who was born and grew up in the United States or born in another country but moved to the U.S. at an early age and heard Spanish at home spoken by parents and / or other relatives, but did not necessarily speak it. These students identify Spanish as their perceived weaker language and are currently enrolled in a Spanish class at the University of Florida.

P&P have notoriously presented a challenge for Spanish L2 learners. Studies have demonstrated that learners show modest progress in the acquisition of P&P over a four-year university sequence of courses (Pinto and Rex, 2006). The difficulty in their acquisition is due in part to the split that is formed when contrasted with their English counterpart *for* and results in the binary nature in which they are presented to Spanish L2 learners. Pinto and Rex (2006, p.612) point out that “the repeated attention dedicated to P&P is a consequence of the difficulty in acquiring their various functions.” In contrast, L1 speakers of Spanish rarely have the problem of deciding when to use one or the other form due to the procedural knowledge that is typical of L1 acquisition (Segalowitz, 2003). Although much of the research on automaticity thus far centres on word recognition, the usage of P&P may provide a noteworthy demonstration of whether or not HL learners have automatized the uses of these prepositions. Segalowitz (2003, p.395) associates automaticity with procedural knowledge, which he identifies as the “knowledge evident in a person’s behavior but which the person is not consciously aware of and hence cannot describe in words.” As part of the present study, students were asked to explain their judgments in a grammaticality judgment task. Participants, whether HL or non-HL learners, that were able to correctly use the appropriate prepositions in the correct places but unable to explain why they did so or how they knew their response was correct are thus seen as satisfying Segalowitz’ aforementioned definition of procedural knowledge and demonstrating automaticity.

Students were expected to draw upon prior experience with these prepositions in order to provide the correct usage of P&P. For the non-HL students, this prior experience may include the formalized pattern drills and exercises they learned in lower-level Spanish classes at the university or secondary level, or from communicative experience during a study abroad or

extended travel experience, as will be discussed further in section 4.1. For HL students, prior experience may include the above as well as communicative experience from their childhood and family experiences.

2. Previous Studies

Although no previous research exists on the acquisition of P&P by heritage speakers or on automaticity and heritage languages, there are a number of studies that compare the performance of HL and non-HL learners. Previous comparative studies of HL and non-HL learners have resulted in fairly inconsistent conclusions. Knightly et al. (2003) found that learners who overheard Spanish during childhood but did not necessarily speak it - a description fitting more than 51% of the HL participants in the current study - did not differ reliably from late L2 learners of Spanish in grammaticality judgments of syntax, and also found that native speakers of Spanish significantly outperformed both groups. They also found that those who overheard Spanish during childhood took more time than both the late L2 learners and the native speakers in determining whether a sentence was grammatical. Because their study limited participants to those that merely overheard Spanish during childhood and did not include those that may have spoken the language for a few years, they suggest that “perhaps it takes more than merely overhearing a language during childhood to gain an edge in morphosyntax” (p.473). The current study, however, does include participants who may have spoken Spanish during early childhood, and therefore may provide the missing link that Knightly et al. (2003) suggested for further study.

Mikulski (2006) found evidence that HL learners perform at a higher level than L2 learners. In an investigation into the use of the subjunctive by HL and L2 learners, she found that HL learners had significantly higher scores on editing and grammar judgment tasks. The present study differs from that of Mikulski in that the high frequency with which speakers use prepositional phrases, as opposed to the subjunctive mode, may lend itself more to the practices of *chunking* – the breaking up of an utterance into units or chunks so that it can be more efficiently processed - and *entrenchment* – cognitive routinization or habit formation - which are cognitive steps in the process of automatization.

In a comparison of pragmatics, a study of requests among L1, L2, and HL speakers of Spanish concluded that the HL learners shared characteristics with both L1 and L2 speakers and therefore comprise a unique intercultural style. This implies that HL students should be categorized with neither L2 nor L1 speakers of Spanish but should be recognized as a learning group with entirely distinct needs (Pinto and Raschio, 2007). Although the current study is not at the pragmatic level, findings that concur with those of Pinto and Raschio (2007) at the syntactic level would lend further credence to this argument.

In a study on the acquisition of P&P, Padilla-Falto (1997) found that formal instruction on P&P to advanced learners of Spanish as a second language has a positive short-term effect on the acquisition of those structures, as evidenced in an immediate post-test administered on the last day of instruction of P&P. Padilla-Falto was unable, however, to provide sufficient evidence for any long-term effect of formal instruction on P&P (two months after instruction). She attributed the drop in performance over time on P&P structures to considerable subject attrition between the immediate and delayed post-tests administered to the participants (p.162).

With regards to automaticity, Segalowitz (2003) cites Anderson's active control of thought (ACT) model (Anderson, 1983) which states that skill acquisition involves a transition from declarative knowledge to procedural knowledge or automaticity. Segalowitz points out that automaticity can be operationally defined in various ways, for example as fast processing, ballistic processing, effortless processing and unconscious processing. He states that word recognition is a good indicator of automaticity because it provides a demonstration of the ballistic, involuntary nature of meaning access upon seeing a familiar word (p. 388). However, Segalowitz states "it has been suggested that it is important early on for learners to have automatic access to prefabricated chunks of language stored in memory. This stored language may serve as a database from which the learner abstracts recurrent patterns, leading to the mastery of grammatical regularities," (p. 403). Accurate responses on cloze tests can also serve as evidence that students are accessing such prefabricated chunks of language, particularly with P&P, which tend to have recurrent patterns of usage.

3. Research Questions

This study investigates issues concerning automaticity and procedural knowledge in HL learners' production of the prepositions P&P and addresses the following questions:

1. To what extent do HL learners rely on declarative or procedural knowledge when completing tasks that require the use of P&P?
2. What differences exist between the HL learners' production of the prepositions and that of the L2 learners, and what differences exist between the two levels of HL learners?
3. What types of explanations do HL learners give for selecting either *por* or *para* in grammaticality judgment tasks?
4. To what extent do the explanations given by HL learners differ from those given by L2 learners?

4. Methodology

4.1. Participants

This study consists of 72 participants, divided amongst four different classes of Spanish at the University of Florida. Two groups consist of those enrolled in courses for bilingual students: a lower-level class, SPN 2340 “Introduction to Reading and Writing for Bilingual Level Speakers,” and an upper-level class, SPN 3350 “Spanish Grammar and Composition for Bilingual Speakers.” Both aforementioned groups will be referred to as HL learners, lower-level and upper-level, respectively. This data is compared with that of two groups of students enrolled in the non-HL or foreign language course equivalents: SPN 2240 “Intensive Communication Skills” and SPN 3300 “Spanish Grammar & Composition.” These two groups will be referred to as FL learners, lower-level and upper-level, respectively. At these course levels, students in all groups are likely to have had prior instruction in the uses of P&P. However, no group received instruction in P&P during the current semester in which they participated in this study.

Because the Spanish courses specifically designed for HL learners at the University of Florida (called “Spanish courses for bilingual students”) do not differentiate between the amount of Spanish the students were exposed to during childhood, it is possible that some HL participants have grown up speaking the language daily, whereas others may only have heard it at visits to grandparents’ houses, for example. However the majority of students participating in this study indicated on a language background questionnaire that they perceive Spanish to be their weaker language (Table 1).

Table 1. Strongest language as identified by HL participants by percentage

	English	Spanish	equally fluent in both	depends on situation
lower-level	94.1	0	0	5.9
upper-level	64.7	5.9	11.8	17.6

Thirty seven HL learners completed the task. Of those sets of data, two were discarded due to the failure of one participant to complete the language background questionnaire and another participant indicating on the questionnaire of being a native speaker of Spanish. Therefore, this study contains 35 HL participants, 17 lower-level and 18 upper-level. Of these participants, 51% indicated that they had been around Spanish their whole lives but grew up

speaking mostly English (Table 2). Over 82% of the HL participants were born in the U.S.

Table 2. Language background description of HL participants by percentage (Raw data in parentheses)

	I learned all my Spanish in a classroom		I first learned Spanish at home, now taking classes to develop my skills		I've been around Spanish whole life but grew up speaking mostly English	
lower-level	5.9	(1)	29.4	(5)	64.7	(11)
upper-level	11.1	(2)	50.0	(9)	38.9	(7)
Total HL participants	9.0	(3)	40.0	(14)	51.0	(18)

Forty three FL learners completed the task. Of those sets of data, six were discarded due to the participant's indication on the language background questionnaire that they had been around Spanish their whole life, but grew up speaking mostly English. This was done to maintain homogeneity among the FL group in terms of language background and type of exposure to Spanish. In addition, this helped to avoid including students in the FL group that had an extensive background in Spanish and had potentially attained a level of automaticity that was not representative of the students who learned all their Spanish in a classroom setting. Consequently, this study contains 37 FL participants, all of whom learned all of their Spanish in the classroom.

4.2 Task and Materials

The task in this study consisted of three parts: a cloze test, a grammaticality judgment (GJ) task in which students were asked to explain their judgment, and the aforementioned language background questionnaire modeled after that used by Mikulski (2006). The language background questionnaire elicited information relating to sociolinguistic background such as place of birth, birthplace of parents and grandparents, and possible residence in other bilingual communities. In addition, the questionnaire asked participants to identify which language they believed to be their strongest, inquired about languages spoken in the home during childhood, and asked questions pertaining to the extent to which the participants have studied Spanish.

Students had no more than 15 minutes to complete the entire task due to the time and syllabus constraints on the instructors of these four courses. Participants were not informed that they were taking part in a study on P&P, only

that they were taking part in a study on the use of prepositions so as to prevent them from using the process of elimination in a binary set of choices. The cloze test consisted of eight sentences that contained five tokens of P&P as well as three distracter sentences that included missing nouns, verbs, and prepositions (for full task, see appendix A). In example (1) below, the native-speaker response was *para*, resulting in the meaning “I am going to study for the exam.” However participants were not given a pre-determined set of options with which to fill in the blank and were only told that the missing item was a preposition.

(1) *Voy a estudiar _____ el examen.*

Participants were awarded one point every time their answer matched the native-speaker responses that were provided by three graduate students in the University of Florida Department of Spanish & Portuguese Studies who are native speakers of Spanish. Distracter sentences were excluded entirely from the scoring, thus a total of 5 points was possible on the cloze tests. The purpose of the cloze test was to determine what differences exist between the HL learners’ production of the prepositions and that of the L2 learners, and what differences exist between the two levels of HL learners in comparison with the native-like responses.

The GJ task was modeled after that used by Mikulski (2006). In this task, students read eight sentences, five of which contained five occurrences of P&P and three of which were distracter sentences that were grammatically correct and contained prepositions other than P&P.

Participants were asked to judge all eight sentences on a Likert scale of 1-5, 1 representing “definitely cannot be said,” 5 representing “definitely can be said” and 3 being neutral. Participants were then asked “How sure are you?” with a Likert scale of 1-3, with 1 being “not sure at all” and 3 being “very sure” and then asked to explain their answers. In example (2) below, the native-speaker response was “definitely cannot be said.” In order to communicate the intended meaning of “I write poetry for pleasure,” the preposition *por* would have been necessary. (For full task, see appendix B).

(2) *Escribo poesía para placer.*

Scoring of the GJ task was based on that of Mikulski (2006) in which participants were awarded a point every time their answer matched the native-speaker responses that were provided by the three native speakers of Spanish. In Mikulski’s study, and likewise in the present study, participants who scored an item with a 4 or 5 were seen as accepting the sentence as grammatically acceptable and those who scored an item with a 1 or 2 were seen as rejecting it as grammatically acceptable. Those that scored a sentence with a 3 were seen as neither accepting nor rejecting it and were not awarded a point for that item. In

addition, a score of 3 for any item was counted as a “non native-like response” in the tally of reasons given for accepting or rejecting each item.

5. Results

5.1. Distribution of Scores

To determine what differences exist between the HL learners’ production of the P&P and that of the FL learners and what differences exist between the two levels of HL learners in comparison with the native-like responses, participants’ overall scores on the cloze test and the GJ task were quantified and compared (Tables 3-4).

Table 3. Distribution of GJ task scores by percentage

Number of native-like responses	FL lower-level	HL lower-level	FL upper-level	HL upper-level
5	4.8	11.8	0	16.7
4	38.1	11.8	6.2	50
3	38.1	47	50	22.2
2	19	23.5	43.8	11.1
1	0	5.9	0	0

Table 3 illustrates the distribution of native-like responses provided on the grammaticality judgment task across all four participant groups by percentage. The group with the highest percentage of five native-like responses on the task was the upper-level HL group, with 16.7%. However, 50% of upper-level HL students attained four native-like responses, whereas 22.2% attained three native-like responses and 11.1% attained two. In comparison, none of the upper-level FL group attained five native-like responses on the task, with 50% of that group attaining three native-like responses and 43.8% attaining only two native-like responses. With regard to the lower-level groups, 47% of lower-level HL students attained three native-like responses, with only 11.8% attaining either four or five native-like responses, compared with 23.5% attaining only two native-like responses. In comparison, the majority of lower-level FL students attained either three or four native-like responses, garnering 38.1% in each category. The only group to attain only one native-like response in the grammaticality judgment task was the lower-level HL group with 5.9%.

Table 4. Distribution of cloze test scores by percentage

Number of native-like responses	FL lower-level	HL lower-level	FL upper-level	HL upper-level
5	14.3	17.6	18.8	22.2
4	23.8	5.9	6.2	22.2
3	33.3	23.5	25	11.1
2	19	29.4	31.3	33.3
1	9.5	17.6	12.5	11.1
0	0	5.9	6.2	0

Table 4 presents the distribution of native-like responses provided on the cloze test across all four participant groups by percentage. Once again, the group with the highest percentage of five native-like responses was the upper-level HL group, with 22.2%. This group also attained 22.2% in producing four native-like responses. The highest percentage for this group however, was two native-like responses, with a total of 33.3% of respondents attaining only two native-like responses and 11.1% of participants in the upper-level HL group attaining both three and one native-like response. Similarly, the highest percentage for the upper-level FL group was also in attaining two native-like responses, with 31.3% attaining only two native-like responses. Twenty-five percent of the upper-level FL group attained 3 native-like responses and 18.8% attained five native-like responses. Surprisingly, 6.2% of the upper-level FL group and 5.9% of the lower-level HL group failed to yield any native-like responses. The highest percentage of lower-level HL respondents attained only two native-like responses at 29.4%. Equal percentages of lower-level HL respondents attained five native-like responses and one native-like response at 17.6%. The only group to attain the highest number of three or better native-like responses was the lower-level FL group, with 33.3% of that group attaining three native-like responses. The next highest percentage for this group, 23.8%, attained four native-like responses whereas 19% attained two native-like responses, 14.3% attaining five native-like responses and only 9.5% attaining just one native-like response.

5.2. Reasons Given for Selections on GJ

To determine what explanations HL learners give for selecting either *por* or *para* in the GJ task and to what extent the explanations given by HL learners differ from those given by L2 learners, the reasons given on the GJ task were separated into four categories: grammatical explanation, aural intuition, correction, or no reason given. Although students were not instructed to provide corrections on the

non-acceptable sentences in the task, enough learners did so to justify its presence as a separate category in this section. Each answer's reasons were then quantified and compared (Figures 1-4).

Figure 1. Percentage of GJ reasons by type - lower-level FL learners

Figure 1 shows that a majority of the answers by lower-level FL participants provided a grammatical explanation as justification in the GJ task. This was true whether their answers matched the native-like responses or not. It can be seen that 38.1% of their native-like responses provided a grammatical explanation along with 13.3% of their non-native-like responses, for a total of 51.4%. In comparison, a total of 19.9% of their responses were justified with aural intuition, 18.1% were justified with a correction, and 10.5% were not justified at all.

Figure 2. Percentage of GJ reasons by type - lower-level HL learners

In contrast, a total of just 9.4% of the answers by lower-level HL learners provided a grammatical explanation as justification on the GJ task, as shown in Figure 2. A far higher percentage of answers by this group of participants either cited aural intuition or did not provided any justification, each with a total of 37.6%. A total of 15.3% of the answers provided by this group were justified by a correction.

Figure 3. GJ task reasons by type - upper-level FL learners

Similar to the lower-level FL learners, the majority of the answers provided on the GJ task by the upper-level FL learners were justified with a grammatical explanation, as shown in Figure 3. A total of 42.5% of the answers provided by this group were accompanied by a grammatical explanation, compared with a total of 15% justified by aural intuition, 22.5% justified by correction, and 20% providing no justification.

Figure 4. GJ task reasons by type - upper-level HL learners

Similar to the lower-level HL learners, the majority of the upper-level HL learners did not provide a grammatical explanation but instead either cited aural intuition or did not provide any justification for their answers on the GJ task. Figure 4 shows that only 5.5% of the answers provided by the upper-level HL learners were justified by a grammatical explanation, compared with a total of 39.9% answers citing aural intuition, 21% providing a correction, and 30% of the answers providing no justification.

6. Discussion

6.1. Cloze Test and GJ Task

The results of the cloze test and the GJ task allow for a direct comparison between the groups against a native-speaker baseline. It is interesting to note that a higher percentage of lower-level FL learners attained more “4 native-like responses” than any other group on the cloze test, and more than both the lower-level HL learners and the upper-level FL learners on the GJ task. One possible explanation for this is that they have retained many of the grammar rules that govern the use of P&P from previous Spanish courses taken. Sixty-five percent of lower-level HL students indicated on the language background questionnaire that they were currently enrolled in their first college-level Spanish course, compared with 57% of the lower-level FL learners. However 95% of the lower-level FL learners who indicated that they were enrolled in their first college-level Spanish course also indicated that they had completed four years of Spanish at the high school-level, as opposed to 6% of lower-level HL learners that indicated they had completed four years of Spanish in high school. A higher percentage of lower-level FL learners attained more “4 native-like responses” than any other group on the cloze test. In addition, on the GJ task, a higher percentage of lower-level FL learners attained more “4 native-like responses” than both the lower-level HL learners and the upper-level FL learners on the GJ task. This lends credence to the argument that explicit instruction in P&P does make a difference in FL learners, at least in the short term. The fact that none of the upper-level FL learners attained five native-like responses in the GJ task (with 50% attaining three native-like responses and 43% attaining only two native-like responses) suggests that the benefits of explicit instruction may not be long-lasting.

Also noteworthy is the high percentage of upper-level HL learners that scored “2 native-like responses” on the cloze test. Part of the reason for this is the binary nature of the test, i.e., native-like or nonnative-like with no possibility for other answers – in other words, on the cloze test, either they provided answers that matched all three native-speaker answers or they did not. In actual usage, the nature of prepositions is such that in many cases more than one preposition may

sensibly complete a sentence. An example of this is item #1 in the cloze test: “Voy _____ el parque _____ llegar a casa.” Many upper-level HL learners completed the sentence as “Voy a el parque después de llegar a casa”, whereas the native speakers said “Voy por el parque para llegar a casa.” Although the former is grammatically correct, it would be impossible to write without changing “a + el” to the obligatory contraction “al,” thus rendering “a el parque” incorrect. Interestingly, few lower-level students, whether FL or HL, completed item #1 in a manner similar to the upper-level HL students.

6.2. Reasons Given for Selections on GJ

The justifications provided on the GJ task allow for an analysis of what type of knowledge, whether declarative or procedural, participants utilized in completing the task. In viewing the results, particularly noteworthy is the comparison of the percentages in the categories of grammatical explanation and aural intuition, as how corrections were not solicited and participants were specifically instructed to heed attention to the section stating “reason for your answer.” With these two categories in mind, one can see that among both the upper and lower levels, the HL learners relied more on aural intuition than did the FL learners. More than 40% of the upper-level FL learners’ answers to the GJ were accompanied by a declarative, grammatical explanation as justification for the answer, as compared to 5.5% of the upper-level HL learners and 9.4% of the lower-level HL learners.

However, the data on how many answers were justified with a correction or not justified at all should not be dismissed, as how the failure to provide an explanation can in itself provide an explanation. Figure 2 shows that the lower-level HL learners cited aural intuition as a reason as often as they did not provide any explanation at all. This could be seen as evidence that although they were unable (or unwilling) to identify aural intuition as their reason for making a grammar choice, they were likewise unable to attribute it to a particular grammar rule, thus unable to demonstrate a use of declarative knowledge. It is interesting to note that just over 50% of the time that the lower-level HL students failed to provide an explanation, they were correct, thus also leaving open the possibilities that they were quite unsure of their answers or that they simply failed to pay attention to the directions given. Regardless, even the inability to provide an explanation for a correct answer can be taken as evidence of automaticity.

If one considers Segalowitz’ (2003) definitions of declarative knowledge – “consciously held, skill-relevant knowledge that is describable”- and procedural knowledge, as defined earlier, “knowledge evident in a person’s behavior but which the person is not consciously aware of and hence cannot describe in words” (p.395), then to determine to what extent HL learners rely on declarative or procedural knowledge when completing tasks that require the use of P&P, one

can combine the aforementioned categories into “grammatical explanation” and “no grammatical explanation given.” Consequently, aural intuition, correction, and no reason given would all constitute an inability to describe in words the knowledge that has allowed them to select a given answer, whether it matched the native-like responses or not. Viewed from this perspective, the data is even more evident that HL learners at both levels have automatized the usage of P&P at a higher rate than the FL learners (Figure 5).

Figure 5. Type of knowledge used in GJ task

Figure 5 shows that the lower-level FL learners explained their answer selections slightly more often than when they did not provide a declarative, grammatical explanation, and were the only group to do so. While it was more common for the upper-level FL group to demonstrate declarative knowledge than it was for either of the two HL groups, it was still more common for them to demonstrate procedural knowledge than declarative knowledge. Both HL groups demonstrated declarative grammar knowledge on less than 10% of the answers.

7. Conclusion

This study found that HL learners demonstrated a higher degree of procedural knowledge in the use of P&P. A higher percentage of lower-level FL learners attained more “4 native-like responses” than any other group on the cloze test, and more than both the lower-level HL learners and the upper-level FL learners on the GJ task, lending credence to the argument that explicit instruction in P&P does make a difference in FL learners, at least in the short term. The fact that none of the upper-level FL learners attained five native-like responses in the GJ task (with

50% attaining three native-like responses and 43% attaining only two native-like responses) suggests that the benefits of explicit instruction may not be long-lasting, and perhaps should be supplemented by a communicative framework as suggested by Gatbonton and Segalowitz (1998). They propose a range of classroom activities that “promote repetition practice and hence automatization, without resorting to mechanical and meaningless drills” and argue that this framework will enhance fluency skills in L2 learners. The communicative manner in which many HL learners may have “picked-up” or internalized the uses of P&P throughout their childhood may be replicated in the classroom throughout the course of a semester using Gatbonton and Segalowitz’ proposed framework. More research on feigning a heritage language acquisition environment in the L2 classroom is necessary, with prudence however, as how there are multiple factors involved when comparing the two populations.

One limitation in this study is that it is a qualitative, rather than quantitative study. Further research in this area would benefit from statistical analysis of the data presented in this study to determine if the results were due to chance or to more substantial factors. Moreover, further studies should use an even-numbered Likert scale to avoid neutrality in the acceptance of sentences in the GJ task, so as to be able to calculate each answer as either accepting or rejecting the acceptability of each sentence (ie. 1-3 rejects the sentence, 4-6 accepts the sentence). Further studies could look at a variety of HL populations, and compare whether students of different geographical locations demonstrate varied levels of automaticity in their HL.

In spite of these limitations, this study demonstrates a tendency for HL learners to rely on automatic procedural knowledge rather than expressed declarative knowledge when using P&P.

References

- Anderson, J. R. (1983). *The Architecture of Cognition*. Cambridge, MA: Harvard University Press.
- Anderson, J. R. & Lebriere, C. (1998). *The Atomic Components of Thought*. Mahwah, NJ: Lawrence Erlbaum Associates.
- Ellis, N. C. (2003). Constructions, chunking, and connectionism: The emergence of second language structure. In C. J. Doughty & M. H. Long (Eds.), *The Handbook of Second Language Acquisition* (63-103). Malden, MA: Blackwell Publishing.
- Gatbonton, E. & Segalowitz, N. (1998). Creative automatization: Principles for promoting fluency within a communicative framework. *TESOL Quarterly* 22(3), 473-92.
- Knightly, L. M., Jun, S., Oh, J.S., & Au, T.K. (2003) Production benefits of childhood overhearing. *The Journal of the Acoustical Society of America*, 114(1), 465-74.
- Mikulski, A.M. (2006). *Native intuitions, foreign struggles? Knowledge of the subjunctive in volitional constructions among heritage and traditional learners of Spanish*. Diss.University of Iowa. Ann Arbor: UMI 3211784.
- Montrul, S. (2006). On the bilingual competence of Spanish heritage speakers: Syntax, lexical-semantics and processing. *International Journal of Bilingualism*, 10(1), 37-69.
- Padilla-Falto, O.I. (1997). *The effects of formal instruction and field dependence on the acquisition of the Spanish prepositions por and para*. Diss. Georgetown University, Ann Arbor: UMI 9713207.
- Pinto, D. & Raschio, R. (2007). A comparative study of requests in heritage speaker Spanish, L1 Spanish, and L1 English. *International Journal of Bilingualism*, 11(2), 135-55.
- Pinto, D. & Rex, S. (2006). The acquisition of the Spanish prepositions *por* and *para* in a Classroom Setting. *Hispania*, 89(3), 611-22.
- Segalowitz, N. (2003). Automaticity and second languages. In C. J. Doughty & M. H. Long (Eds.), *The Handbook of Second Language Acquisition* (382-408). Malden, MA: Blackwell Publishing.

Appendix A

Fill in the blanks with the preposition you feel best completes the sentence.

1. Voy _____ el parque _____ llegar a casa.
2. Necesito la tarea _____ mañana.
3. Insisten _____ venir esta noche.
4. Después de ir al bosque, debemos viajar _____ la costa.
5. Quiero sentarme junto _____ ti.
6. El jarabe es _____ la tos.
7. Acabamos _____ comer y luego fuimos al cine.
8. Voy a estudiar _____ el examen.

Please move on to page 2 →

Appendix B

Items	Opinion					How sure are you?			Reason(s) for your Choice: (including grammatical explanation or 'it just sounded right/wrong')
	Definitely Cannot Be said		Neutral		Definitely can be said	Not Sure At all		Very Sure	
Pagué veinte dólares por los zapatos.	1	2	3	4	5	1	2	3	
Desde luego, tendremos que estudiar mucho.	1	2	3	4	5	1	2	3	
El ladrón entró por la ventana.	1	2	3	4	5	1	2	3	
Anoche soñé con un oso gigantesco.	1	2	3	4	5	1	2	3	
Fuimos a California para tren.	1	2	3	4	5	1	2	3	
Tenemos que terminar el trabajo para las ocho.	1	2	3	4	5	1	2	3	
Fui a nadar a pesar de la lluvia.	1	2	3	4	5	1	2	3	
Escribo poesía para placer.	1	2	3	4	5	1	2	3	

Appendix C

Language Background Questionnaire

1. Which statement best describes you?

_____ A. I learned all my Spanish in a classroom

_____ B. I first learned Spanish by speaking it at home and I now take Spanish classes to develop my skills

_____ C. I have been around Spanish my whole life but I grew up speaking mostly English.

2. If you answered A, please skip to question 5. If you answered B or C, please fill out the chart below and continue the questions below.

	U.S. (except Puerto Rico)	Puerto Rico or other country (please name)
Where were you born?		
Where was your father born?		
Where was your mother born?		
Where was your grandmother on your mom's side born?		
Where was your grandfather on you mom's side born?		
Where was your grandmother on your dad's side born?		
Where was your grandfather on your dad's side born?		

3. Overall, which language do you think is your strongest?

_____ A. English

_____ B. Spanish

_____ C. I think I am equally fluent in both

_____ D. It depends on the situation

4. How much Spanish was spoken in your family when you were a child? Did this ever change? Please explain.

5. Have you ever visited a Spanish-speaking country for more than 2 weeks?

_____ Yes

_____ No

6. Indicate how long you studied Spanish at each of these levels:

Elementary / Middle School _____

High School _____

Community college / university

7. What other Spanish classes are you taking this semester?

8. What Spanish classes did you take at U.F. or community college before this semester?

Thank you for participating in this study!