

# Prominent Factors in the Acquisition of Portuguese: Language Aptitude versus Previous Language Experience

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## 1. Introduction

### 1.1. *Third Language Acquisition*

The current study addresses the relationship that language aptitude and previous language experience have on third language acquisition. As McLaughlin and Nayak (1989) state, “There is considerable anecdotal evidence that once a person has learned a few languages, subsequent language learning is greatly facilitated” (p. 6). The task for language researchers is to investigate whether there is empirical evidence for this often-believed hypothesis. The difficulties in doing this abound, as there are many factors involved in language acquisition, whether it be the first, second, third, or fourth. Age of acquisition, motivation, language family, literacy, and socioeconomic status of the learner are a few of the many factors that need to be considered when studying how individuals acquire a new language. Political prestige of the language is also an important factor in language acquisition; if the political prestige of the language is low, the individual’s motivation to learn that language could also be low (Dörnyei, Csizér & Nemeth, 2006).

The concept of being bilingual is complex, and the literature on bilingualism uses approximately 37 terms to describe the various types of bilingualism. These terms range from balanced bilingual to describe someone whose two languages are roughly the same in terms of proficiency to incipient bilingual to describe someone who is just starting to learn a new language (Wei, 2001). For the purpose of this study, the term bilingual will be used to describe anyone who has experience with two or more languages, regardless of the proficiency level of the languages.

Why would bilingualism have an effect on how subsequent languages are learned? Metalinguistic awareness has been shown to play a role in successful language acquisition. Ellis (1994) proposes the weak interface theory, stating that metalinguistic knowledge acts as an advanced organizer, thus, speeding up the language acquisition process. Several researchers, such as Bialystok (1986, 1987, 1991), Yelland, Pollard, and Mercury (1993), and Thomas (1988, 1992) show that bilinguals have a better understanding of metalanguage, i.e. explicit language information or the organization of language systems. This explicit knowledge speeds up the learning process of subsequent languages, and according to Thomas (1988 and 1992) helps bilingual learners to analyze language in a more structured system. Bialystok (2006) states, “It is plausible that having two different language systems for examination may make structural patterns more noticeable and hasten the child’s attention to the systematic features of the language” (p. 579-580). This idea is supported in Nayak et al (1990) when the multilingual participants outperformed the monolingual participants in learning the syntax of the artificial language presented. Although the multilingual participants did not outperform the monolingual participants in this study, “...there is some evidence to suggest that more experienced language learners show greater plasticity in restructuring their mental representations of the rules governing linguistic input” (p. 242). In other words, if a person has a concept of how more than one language is structured, he would be cognitively more receptive to accepting an additional language system into his repertoire.

There have also been several empirical studies (McLaughlin & Nayak, 1989; Nation & McLaughlin, 1986; Nayak et al., 1990) that have suggested that when people learn an L2, the basic sub-skills of language learning are automated; thus, people with previous language experience have more resources to devote to the form of the new language. According to VanPatten (1996), controlled

processes take more space in a learner's working memory than do automatic processes. For example, people who have already learned how to conjugate verbs in the subjunctive in Spanish know the process of taking a root (the core meaning of the verb) and adding a specific morpheme (the part that carries the tense and aspect). Although this process of verb conjugation begins as a controlled process requiring intense concentration to figure out which morpheme goes where, the more the learner performs the conjugations, the more automated this process becomes. When bilinguals with an L2 of Spanish study Portuguese, the process of verb conjugation has already been introduced, so the process of automatization is more rapid. They can focus on learning the intricacies of the verb mood, rather than the concept and pathways of the verb conjugation itself. According to the theory, because the process of conjugation becomes automatic more quickly, the learners can process the input more effectively when learning Portuguese.

With few exceptions, the literature supports the idea that bilingualism at all levels has a positive effect on third language acquisition. McLaughlin and Nayak (1989) find that multilingual participants are more flexible in their use of language learning strategies than their monolingual counterparts; the multilingual participants are more willing to change strategy if it is found to be ineffective. Cenoz and Valencia (1994) with their research in the Basque country and Sanz (2000) with her research in Catalonia cite evidence for the benefits of bilingualism with relation to third language acquisition. As Cenoz and Valencia (1994) state, "bilingualism has a positive mediating effect on third language learning." These benefits are not affected by "cognitive, sociostructural, social, psychological and educational variables" (p. 204). In other words, according to these authors, there is a benefit to being bilingual, regardless of other factors. Likewise, Sanz (2000) shows that ". . . immersion programs in the minority language, whether in the Basque Country or in Catalonia, produce more efficient L3 learners" (p. 34). In this study, factors such as intelligence, age, motivation, attitudes towards British and American language and culture, and number of languages spoken were all operationalized variables. By performing a hierarchical multiple regression analysis, Sanz shows that bilingualism results in higher scores on English proficiency tests independently from the other aforementioned factors, thus indicating that bilingualism has a positive effect on L3 acquisition, regardless of the other factors involved.

Many third language acquisition studies have been conducted in Europe, considering the inherently bilingual environment. However, there have also been a number of third language acquisition studies conducted in Canada. Many of the Canadian schools offer bilingual education in French and English, so children of immigrants often speak one language at home and receive instruction in two others at school. Many Canadian educators wondered if instruction in the L1 would help the children of immigrants perform at a higher level in the acquisition of French and English. Though parents and administrators have in the past thought that instruction or even speaking of the L1 would in fact impede the acquisition of the L2 and L3, two empirical studies (Swain, Lapkin, Rowen, & Hart 1990; Da Fontoura & Siegel 1995), have shown otherwise.

In the Swain et al. (1990) study, immigrant children with a variety of language backgrounds were tested to see if L1 literacy had an effect on the acquisition of French and English. The results are clear: ". . . literacy in one's mother tongue enhances third language learning" and ". . . bilingual education programmes that promote first language literacy have an overall positive effect on the learning of other languages" (p. 78). Similar results are found in the Da Fontoura and Siegel (1995) study of bilingual Portuguese-English Canadian children and the effects of bilingualism on reading: ". . . bilingualism is clearly not an impediment to the development of reading, syntactic and memory skills" (p. 149). In fact, bilingual children who are reading disabled scored significantly higher on pseudoword reading and spelling tasks than did their monolingual counterparts, supporting the idea that bilingualism aids in language acquisition on all levels, not just with gifted learners. One possible reason for these strong findings could be that if children learn to read and write in their L1, a language they already know, they are able to better understand the *need* and *purpose* of reading and writing (Hudelson, 1987) and already understand the "discourse structure of stories and [...] the symbolic system used to encode that language" (Bialystock, 2006, p. 589). In addition, if the writing systems of the two languages are similar, the children can transfer what they already know about the form-meaning connection in their L1 to their L2. However, reading skills not only transfer across languages, but across writing systems as well as evidenced in the Geva, Wade-Woolley, and Shany (1997) study of the transfer of the reading skills of bilingual Hebrew-English children. According to Cenoz (2001), "linguistic distance plays an important role in cross-linguistic transfer (p. 16), although sometimes the perceived

possibility of transfer can be more influential than the actual linguistic distance. In addition, the Sanz (2000) study “show[s] biliteracy rather than ‘oral bilingualism’ to be the factor determining cognitive abilities” (p. 38), thus facilitating language acquisition.

One study that contradicts the previously mentioned studies about the benefits of bilingualism in third language acquisition is the Wagner, Spratt, & Ezzaki (1989) study carried out in Morocco. The results of this study indicate that the L1 illiteracy of Berber does not affect Arabic (L2) and French (L3) learning. Their suggestion to the United Nations Educational, Scientific and Cultural Organization (UNESCO) was that teaching literacy in Berber would be an unnecessary burden on the government and the people of that region. When analyzing these results, one must keep in mind the idea of additive and subtractive linguistic consequences. Lambert (1981) defines additive linguistic consequences as when a person learns another language to become bilingual, whereas subtractive linguistic consequence is the result of learning an L2 to replace the L1, such as is the case in the Atlas Mountains in Morocco. Arabic has a privileged status compared to the minority Berber language, as Arabic is the official language of government and instruction, as well as the language of the Koran. Thus, L1 Berber speakers could feel that if they learn Arabic or French, it would replace Berber, causing the Berber speakers to lose a part of their heritage and culture. As a result, the Berber-speaking population would resist learning Arabic or French, regardless of literacy in Berber.

There are very few articles dealing with the theme of L3 acquisition in the United States; however, two examples are Rosier and Farella (1976) and Klein (1995). Rosier and Farella (1976) found that Navajo children instructed in Navajo performed better on English literacy tests than those Navajo children who were illiterate in Navajo. In addition, Klein (1995) found that her multilingual subjects in New York outperformed monolinguals in lexical learning and were able to use these new lexical items in new contexts in a more effective way than monolinguals. The multilingual participants in this study were also able to more quickly acquire the parameters of unfamiliar syntactic structures, in this case preposition/verb collocations and preposition stranding.

There seems to be a dearth of empirical research about third language acquisition in the United States, and it cannot be assumed that models of bilingual education in other parts of the world can be easily implemented in the school systems of the United States, as Sanz (2000) states. “Identification of a positive effect of bilingual programs on L3 acquisition in developed areas of the world does not mean that we can assume the same results for all bilingual programs, including those in the United States” (p. 38). However, researchers and school administrators should at least be minimally informed about the advantages of bilingual education programs.

## *1.2. Language Aptitude*

The current study addresses the relationship that language aptitude and previous language experience have on third language acquisition. In order to discuss the above question, another, more basic question must first be answered: What are the factors that constitute this construct of language aptitude? In other words, when talking about measuring language aptitude, what exactly is being measured? Based on his findings, Skehan (1990) concludes that aptitude consists of two separate factors: a person’s innate ability for processing language combined with environmental factors, such as parental language background and literacy.

Though there is some controversy surrounding it, the Modern Language Aptitude Test (MLAT) is one possible way to measure language aptitude. First developed in 1959 by Carroll and Sapon, the MLAT has been used to measure language aptitude by government agencies and schools from 1959 to the present. With the development of the communicative language approach to teaching, the MLAT has become less popular because many language educators and researchers feel that the subtests of the MLAT measure aptitude as it relates to a more audiolingual pedagogical framework (Stansfield & Reed, 2004). Upon closer examination, however, it was found that regardless of the teaching style of the classroom, the MLAT can still predict success in a foreign language classroom (Ehrman, 1998). There have been many other studies that validate the use of the MLAT to measure language aptitude, such as Carroll (1962), Gardner and Lambert (1965), Gajar (1987), and Parry and Child (1990).

Language aptitude is operationalized as comprising four skills, according to Carroll (1981): phonetic coding ability, grammatical sensitivity, rote learning ability, and inductive language learning ability. Phonetic coding deals with the ability to recognize sounds, remember them, and associate those sounds with the words, whereas grammatical sensitivity is the ability to recognize syntactic functions

of words in a sentence. Rote learning ability is the measure of how effectively a person can learn words and retain them, and inductive language learning ability is how well someone can infer rules from data sets. The MLAT consists of five parts which sample these four underlying abilities: number learning, phonetic script, spelling clues, words in sentences, and paired associates (Dörnyei, 2005).

For part I, number learning, the participants hear audio information about numbers in a new language. For example, *ba* is *one*, *baba* is *two*, *dee* is *three*. They are then asked to listen to numbers in the new language and write the English equivalent. The numbers become more complicated, such as *tu* is *twenty* and *ti* is *thirty*. *Tu-ba* is *twenty-one* because *tu* is *twenty* and *ba* is *one*. After this brief training, the participants hear a series of numbers, such as *ti-ba*, *ti-dee*, etc. and have about five seconds to write down the English equivalent to the numbers.

For part II, phonetic script, the participants learn phonetic script for English. They are presented with four possible transcriptions for each question, and the recording pronounces each of the syllables during a training period. Here are some examples: 1. bot but bok buk and 2. bok buk bov bof. After the training period, the participants have to listen to the speaker on the recording who says only one of the words previously presented. The participants have to choose the written syllable that corresponds with the word on the recording.

For part III, spelling clues, the participants are presented with a word that is not spelled correctly. They then have to pick an answer from the four choices presented that most closely corresponds with the word presented. For example, the participant would be presented with a word such as, *kloz* and would have to choose between A. attire, B. nearby, C. stick, and D. giant.

In part IV, words in sentences, the participants must identify the part of the sentence that has the same function as a previously indicated part, such as in example 1.

- (1) Jill fell down AND Jack came tumbling after.  
Now, you make wait out there, or you may come back on Friday if you wish.  
 A B C D E

In this case, the correct answer would be C because it has the same function as the indicated “and” from the previous sentence.

For part V, paired associates, the participants must memorize Mayan-English word pairs - 2 minutes for 24 words. They do a practice exercise and then answer the questions. A sample questions would be like example 2:

- (2) Vocabulary  
 Maya -- English
- |      |     |
|------|-----|
| c?on | gun |
| bat  | axe |
| pal  | son |

They would then be asked to identify the meaning of the words given, such as *bat* - A. animal, B. stick, C. jump, D. ax, or E. stone.

Though there have been some doubts about using the MLAT as a measure of language aptitude, these doubts do not affect part four, words in sentences, as Dekyser (2000) clearly states:

Carroll and Sapon’s (1959) Modern Language Aptitude Test is usually considered the best verbal aptitude test in terms of its predictive value for L2 learning. Some of the minor technical problems discovered over the years do not affect the “Words in Sentences” part (Carroll, 1990), which is specifically aimed at measuring grammatical sensitivity and therefore should be the best predictor of grammar learning (p. 509).

Besides the reliability of Words in Sentences, one other possible benefit of using only a grammatical sensitivity test for aptitude is that if the aptitude test is kept relatively short, the notion of test fatigue becomes less of an issue. The entire MLAT takes just over an hour to administer, whereas part four,

Words in Sentences, takes only fifteen minutes. In addition, grammatical sensitivity tests, such as the Words in Sentences part of the MLAT, are a valid measure of language analytical ability (e.g. Skehan, 2002). Because of this, they have been used in previous studies as the sole measure of language aptitude (e.g. Otto, 1996) to the extent that when Otto (1996) created the Hungarian version of the MLAT, he chose only to develop a Words in Sentences section to measure language aptitude. For these aforementioned reasons, only part four, Words in Sentences, was used as the aptitude measure for the present study.

## 2. The Study

The current study investigates how language aptitude and previous language experience have varying effects on third language acquisition. The overall research question is the following: Which of the independent variables, previous language experience or language aptitude, most strongly correlates with classroom achievement in first semester Portuguese? In response to the research question, there are three hypotheses for this study:

1. Those students who have studied another language to a high proficiency level prior to their study of Portuguese will perform better in the first semester Portuguese class than those who have studied no other language or another language to a low proficiency level prior to their study of Portuguese.
2. Those who have a high score in language aptitude (as defined by the grammaticality judgment section of the Modern Language Aptitude Test – MLAT) will perform better in first semester Portuguese than those who have a lower language aptitude.
3. Previous language experience will have a significantly higher correlation with success in first semester Portuguese than will language aptitude.

## 3. Method

### 3.1. Participants

The participants were enrolled in first semester Portuguese at a large Midwestern university. The classes were comprised of mostly undergraduate students with the exception of two graduate students. The participants' ages ranged from 18 to 28. The participants had a wide range of previous language experience including Spanish, French, German, Japanese, Gaelic, Latin, Italian, and Zulu. They had the most previous language experience with Spanish, French, and German (see the above literature review for a discussion about cross-linguistic influences).

Though there were initially 26 participants from two different sections, 12 were eliminated for various reasons, such as a native language other than English and problems with the class exam scores. There were five participants who had an L1 other than English, and for reasons of consistency, only those students whose L1 was English could be used. There was also a discrepancy in the range of the students' grades depending on their section of first semester Portuguese.<sup>1</sup> One of the sections had a range of 11.5 for the final test grades (46.3-57.8 out of a possible 60), and the other class had a range of only 4.1 (54.1-58.2 out of a possible 60). It was not possible to compare the grades of one class to the grades of another class because numerically similar grades had different interpretations, depending on the section. For example, a final grade of 55 out of 60 in one of the sections was theoretically higher than the same score from the other section. This factor made it imperative to eliminate the section with an insufficient range of grades, thereby eliminating seven more subjects. For the final analysis, data from only 14 of the participants could be used.

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<sup>1</sup> Though the tests were the same for both classes, the two instructors grading the tests were not normed as far as how many points to take off for each incorrect answer. Therefore, there was a discrepancy in the scores, not because of a difference in student ability, but because of a difference in grading techniques.

### 3.2. Materials

For this study, four types of data were used: test scores, part four of the MLAT, self-assessed language ability, and open-ended questions. The test scores from the first semester Portuguese class is the independent variable. The two dependent variables are part four, Words in Sentences, of the Modern Language Aptitude Test (MLAT) to measure the students' language aptitude and self-reported proficiency of other languages for the variable of previous language experience. In addition, the participants were asked to respond to open-ended questions to further understand their ideas on the relationship between their previous language experience and learning Portuguese.

The test grades of the students were used as a measure of overall achievement in first semester Portuguese. Four tests were administered during the first semester; test 1 and test 2 were worth ten points each, and the midterm and final were each worth 20 points; thus, there was a possibility of 60 points for the semester. These tests measured a variety of skills, such as reading, writing, grammar, and listening, although the focus of the tests was grammar and listening. All of the tests had the same format: a brief listening comprehension section followed by fill in the blank, short answer, or multiple choice questions. Many of the questions dealt with verb tenses: Ex., “Eu \_\_\_\_\_ (fazer) o exame agora.” (*I \_\_\_\_\_ (to do/to take) my test now.*) The answer is “estou fazendo” (*am taking*) with the key word being “agora” (*now*). Other questions dealt with concepts such as vocabulary translations and question formation. There was not an extensive writing or a speaking component to the exams.

Part four, Words in Sentences, of the Modern Language Aptitude Test (MLAT) was used to measure the students' language aptitude. This test requires participants to identify the part of the sentence that has the same syntactic function as a previously indicated part. (See the literature review for a sample question from this test.)

In order to obtain information about the participants' previous language experience, a background questionnaire was used. There were questions that asked that participants to explain in detail when and how they had studied their previous languages. See table 1 below for details of the format.

Table 1

Please complete the chart below for languages that you have studied in the past or are studying at this time.

Language A	How did you learn the language? (Please describe.)	From what age to what age did you learn the language?  _____ to _____	How well do you speak the language? (Please circle one.)  poor / fair / good / advanced / fluent / native-like

There were spaces for the participants to fill out information for up to four previous languages studied, which were labeled language A, language B, language C, and language D. The participants were not asked to specify proficiency in specific skill areas of the previous languages, although the word *speak* was used in the questionnaire. This question was intended to be an overall judgment of general language proficiency.

Though the open-ended question was not a part of the statistical analysis, this question also addressed the idea of previous language experience. The question that the participants answered was, “Do you think that studying other languages prior to your study of Portuguese has helped or hindered your ability to learn Portuguese? Please provide specific examples where appropriate.” Though not

all participants answered this question, those who did answer provided insightful data to their own processes of language acquisition.

### *3.3. Procedure*

The first semester Portuguese class used in this study was largely communicative with brief explicit grammar explanations, mostly at the request of a student. Most of the activities in the class were done in small groups with large class discussions following the small group interaction. Both the target language (Portuguese) and the students' L1 (English) were used as the language of instruction with an increase of the target language as the semester progressed.

The Words in Sentences part of the MLAT was administered to the students during 15 minutes of a regularly scheduled class of first semester Portuguese at a large Midwestern university. The students were then given background questionnaires to complete dealing with previous language experience. The students' test grades from first semester Portuguese were compared to their MLAT scores and their previous language(s) studied to see which component has a stronger relationship with overall performance in first semester Portuguese. Because of the non-normal distribution of the data collected, Spearman's correlations were used to find the relationship of the aforementioned variables.

### *3.4. Analysis*

The purpose of this study is to see if there is a correlation between performance in first semester Portuguese, the language background, and/or language aptitude of the participants. In order to run a Spearman's correlation, all of the data had to be quantified. The test scores from the class and the MLAT scores were easy to quantify because the results were reported in numbers. The test scores are on a scale from 0 to 60 pts; the points from all of the tests during the semester were added together. Test 1 and test 2 were worth ten points each, and the midterm and final were each worth 20 points; thus, there was a possibility of 60 points for the semester. These tests measured a variety of skills, such as reading, writing, grammar, and listening, although the focus of the tests was grammar and listening. The participation, homework, and oral report grades were not included in the analysis because of the subjective nature of these grades. There are 45 items on part four of the MLAT, thus the MLAT score is on a scale of 0 to 45 points. The part which is difficult to quantify is the level of proficiency in languages previously studied. This was done through the language background questionnaires, giving the participants a 1 to 6 choice of language proficiency. The participants were asked to circle one of the following levels for their previous language experience: 1. poor, 2. fair, 3. good, 4. advanced, 5. fluent, and 6. native-like.<sup>2</sup> A Spearman's correlation was then run between the three aforementioned factors.

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<sup>2</sup> An analysis was also run by classifying the low scores (1-3) as 0 and the high scores (4-6) as 1 to create a binomial analysis. Changing this factor, however, did not significantly change the results. For this reason, only the results that used all six values for the language proficiency will be discussed.

## 4. Results

### 4.1. Quantitative Data

Table 2 presents a summary of the raw scores on all measures.

Table 2

#### Raw Data and Descriptive Statistics

Participant Number	Test Scores (out of 60)	MLAT (out of 45)	Strongest Previous Language (out of 6, self reported)
1	47.5	22	3
2	51.3	16	3
3	50.1	22	2
4	55.6	12	1
5	57.2	21	5
6	54.7	12	3
7	56.1	21	5
8	49.1	18	4
9	55.4	19	3
10	48.1	9	6
11	57.2	19	4
12	54.7	29	4
13	57.4	25	3
14	57.8	25	3
	M=53.23 SD=4.06	M=19.29 SD=5.58	M=3.5 SD=1.29

As noted by the raw scores and the descriptive statistics, the range of the test scores is quite limited, which is one of the shortcomings of this study. With such a limited range within the measure of Portuguese proficiency, the likelihood of finding an independent variable with a strong relationship to Portuguese proficiency proves to be more difficult. This shortcoming will be discussed further in the discussion section of this paper.

Spearman correlation tests were used to find the relationships between the factors: the MLAT, previous languages, and performance in first semester Portuguese. Table 3 below shows a correlation between the MLAT, the strongest previous language studied, and performance in first semester Portuguese:

Table 3

Spearman correlation: test scores, MLAT, and strongest previous language

	Test Scores	MLAT	Strongest Previous Language
Grade	–	.349	-.012
MLAT		–	-.073
Language			–

With the participant number at 14, a correlation of 0.532 is needed to reach significance (a *p*-value of 0.05 or greater), and as seen in table 3, none of the values reach significance, though there are some

interesting trends to be noted. It can be seen that neither the MLAT nor the test scores strongly correlated with the strongest previous language studied. In fact, for both of these factors, the correlation is almost 0 with  $-0.073$  for the MLAT and  $-0.012$  for the strongest previous language studied. However, the MLAT has a correlation to the grade with a value of  $0.349$ . This value is not statistically significant, but is a great deal higher than the other two aforementioned correlations.

#### 4.2. Qualitative Data

Although the quantitative analysis shows no significant differences, the comments in the qualitative analysis bring some interesting points to light. As part of the background information, the participants were asked to respond to the following question: “Do you think that studying other languages prior to your study of Portuguese has helped or hindered your ability to learn Portuguese? Please provide specific examples where appropriate.” The responses of the participants provided fascinating insights to the process of language learning.

There were some comments about the disadvantages of studying multiple languages. One participant commented that “similar words mean different things” and another commented that, “. . . there were many times when I spoke Frenchuguese. . . languages get confused with one another especially when both are fresh in your head.” There were other students who mentioned other aspects of negative transfer such as sentence word order and morphemes. For example, in Portuguese, *ele* means *he*, but, “in German, words that end in ‘e’ are usually feminine, so ‘ele’ first triggers the idea of ‘she.’ ” Another participant commented about the negative transfer in the area of phonetics, “In terms of phonetics, the downside is that often I want to just speak Spanish because in my mind I visualize the two languages as being similar.” These statements from the participants are evidence that negative transfer can occur not only from the L1 to the L2, but also can occur from the L2 to the L3.

In the responses, there were more positive comments than negative ones. Several of the students who had previously studied Spanish or other Romance languages made comments that previous language study helped with the Portuguese acquisition process because of the similarities of the languages. One of the participants who is a Spanish major commented that studying similar languages previously made it very easy to understand, “the structure and vocabulary of the language [Portuguese].” This participant also commented on the similarity between the “basic elements” of Spanish and Portuguese. Another participant stated, “I think that learning French helped me to better learn Portuguese because of the similar structure,” and another said, “. . . with a Latin background it was much easier for me to learn the grammar [of Portuguese].” Another positive comment was that one participant thought that Spanish gave her a “head start” because of cognate recognition and the fact that she already knew “the system” of verb conjugation. This participant stated, “I would say that I have progressed in being able to understand Portuguese at a rate much faster than I did with Spanish” and that Spanish gave her a “framework” for Portuguese.

An especially fascinating comment came from a participant who had not studied a Romance language, but who had studied German. “It [German] has helped me to really understand language, and how it works, not only in German, but in English as well . . . While learning Portuguese, I often think about how this relates to German.” This comment is especially intriguing for a number of reasons. First, this participant studied a non-Romance language, yet he still was able to apply what he learned by studying German to studying Portuguese. Second, he made a comment about how he was able to learn more about his L1, English, by studying another language. Thus, according to this comment, learning a second language can help people understand not only a third language, but a first language as well. The comments of this participant directly support the research stating that bilinguals have a better understanding of language systems as a whole (c.f. Bialystok 1986, 1987, 1991, Yelland, Pollard, and Mercury 1993, and Thomas 1988, 1992), regardless of the languages in question.

### 5. Discussion

As seen from the statistical analyses, there was no correlation between languages studied previously and the performance in first semester Portuguese; therefore, hypothesis one was not supported. Though the correlation between the MLAT scores and performance in first semester Portuguese did not reach significance (the coefficient was  $0.349$ , and  $0.532$  (a  $p$ -value of  $0.05$  or greater) is needed for significance with 14 participants), there was at least a trend that could be noted – students with higher

language aptitude outperformed those with lower aptitude in first semester Portuguese. Thus, although hypothesis two was not supported, an interesting trend was found that shows that this area of research needs further investigation. Hypothesis three was not supported. Previous language experience was not a better predictor than language aptitude for performance in first semester Portuguese. Inversely, for this data, language aptitude seems to be a better predictor than previous language experience for success in first semester Portuguese.

The abovementioned qualitative comments provide insights to both positive and negative aspects of learning multiple languages. These anecdotes reflect the same type of evidence as found in McLaughlin and Nayak (1989), “There is considerable anecdotal evidence that once a person has learned a few languages, subsequent language learning is greatly facilitated” (p. 6). The problem lies in the task of finding a successful method of quantifying these anecdotes.

## 6. Limitations and Future Research

One limitation of this study is the relatively small number of participants. More participants would increase the validity of this study. Though most of the students in first semester Portuguese participated, resulting in 26 participants, 12 of them had to be eliminated for various reasons, such as native language and discrepancy of test scores between the two sections of the class. As a result, only 14 participants could be used for the final analysis, a number not large enough to produce robust statistics; however, even the section of the class that had the higher range of grades did not have a wide enough range to identify those students who truly had a higher proficiency than the other students. The limited range of the test scores make differentiation of the students’ level of Portuguese based on the final test scores is difficult.

Other limitations are the use of class test grades to measure Portuguese language proficiency and self-reported language proficiency of previous languages studied. The use of test grades to determine Portuguese language ability limits the subject pool to one university, and as it turns out, even to one section at one university. Therefore, an independent measure of proficiency, such as a standardized proficiency test, should be used to be able to successfully obtain a greater number of participants. The use of the test scores in and of itself does not decrease validity of this study; it only does so by reducing the opportunity for a greater number of participants because many language classes are not normed in the way that exams are graded. The self-reported language proficiency on the background questionnaire is also potentially problematic because there could be a discrepancy in how proficient a learner thinks he or she is in any given language and his or her actual proficiency level. An ideal solution would be to administer proficiency exams for the languages previously studied by the participants, though the wide range of previous language experience in the current study would make this logistically extremely difficult, and comparing proficiencies across languages may not be feasible. It would also be insightful to be able to compare the self-assessed proficiency scores to actual scores on a proficiency test. The idea of having to numerically quantify language proficiency is also problematic. How is it possible to assign a number to how proficient a person is in a language? How does a person who has studied one language to an advanced level compare to someone who has studied three languages to the intermediate level? These are questions that have no definitive answers.

Perhaps a direction of future research would be to select a group of Spanish-English bilinguals with different levels of Spanish who are learning Portuguese to be better able to control for the question of previous language proficiency. The bilinguals would have English as their L1 and varying levels of Spanish proficiency to be measured by a Spanish proficiency test. This measure would give a more accurate depiction of the level of the language that they had previously studied. The participants in this hypothetical study would be asked to take the Words in Sentences part of the MLAT to test language aptitude and those scores would be correlated with the level of Spanish proficiency and the level of Portuguese proficiency at the end of one semester or one year of study. With further studies that include improvements to the methods and materials, the question of the relationship between aptitude, previous language experience, and second language acquisition can potentially be answered in a more definitive manner.

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