

Transfer, Selectivity, And Competence: First Language Attrition And Minimalism

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1. Introduction

Language attrition, at its most basic level, can be defined as “the non-pathological decrease in a language that had previously been acquired by an individual” (Kopke & Schmid 2004:5). Essentially, the phenomenon refers to a loss in proficiency of a language, either native (L1) or secondary (L2), that is not the result of clear illness or injury, but instead refers to a “change in linguistic behavior” (Schmid 2008:10). Given the differences between first language acquisition and second language learning, a discussion of which is outside of the scope of this paper, it is perhaps unsurprising that an L2 could deteriorate in the absence of input or other forms of language maintenance. The case of first language attrition, however, is not well understood, given that an L1 is acquired at an early age and comprises the first (and perhaps only) linguistic system that a person has until learning an L2. Attempts to explain L1 attrition have mainly focused on descriptions of lexical decay and the intersection between language and identity, especially as it relates to immigrants losing their first languages in a new linguistic community. Schmid (2004), for example, examines the role of identity in the attrition of three groups of German Jews who fled the Holocaust at different periods. Isurin (2000) provides a longitudinal study on lexical decay in a Russian girl adopted by an American family at the age of 9. Both studies provide important description of the phenomenon of language attrition and speculate on its causes, but fail to outline a clear, cognitively realistic model for how language attrition works in the mental grammar of a speaker.

Generative grammar, however, can provide a useful theoretical framework on which to formulate such a model. The most recent iteration of generative grammar, the Minimalist Program, specifically aims to build a descriptively economical and cognitively realistic model of the language system, especially in terms of the interfaces between semantics and syntax and

phonology and syntax. First, this paper will address the theoretical framework at hand and summarize three previous studies in first language attrition from this perspective. Second, this paper will present a case study of L1 attrition in an English/Spanish simultaneous bilingual speaker, raising questions and offering brief proposals about how to study the process of attrition in the case of this speaker to clarify and contribute to existing literature in the future. Finally, the paper will attempt to propose a brief research agenda based on previous studies and theoretical predictions aimed at clarifying and expanding minimalist perspectives on first language attrition.

2. Previous Studies

In this section, I will introduce the Minimalist Program, its predictions for a model of first language attrition, and then review three studies that have been conducted based on this framework.

2.1 Theoretical Framework

The Minimalist Program was proposed by Noam Chomsky in 1995 based on the notion of economy of derivation. Essentially, the goals of the Program were to improve on previous advances in generative linguistics, such as Principles and Parameters Theory, by proposing a computational system of language that is as minimal, universal, and as clearly motivated as possible (Herschensohn 2000:66). Principles and Parameters Theory sought to explain the similarity and variation among human language as a product of the interaction of principles, common to all languages and part of Universal Grammar, and parameters, language-specific phenomena that are acquired by children in the acquisition process. While still retaining an understanding of universality and variation among language, minimalism sees these principles as the underlying syntax that is common to all languages and parameters as the result of restrictions

on interpretability as they are defined by the sound and meaning systems of a particular language (Herschensohn 2000:67).

After lexical items in a derivation are selected and merged by the universal processes of syntax, the derivation must be “spelled out” and interpreted by two different interfaces, the Phonetic Form (PF), which interacts with the articulatory-perceptual system, and the Logical Form (LF), which interacts with the conceptual-intentional (or semantic) system (Platzack 1996:370). The constraints imposed by these systems are the result of bundles of morphological, syntactic, phonological, and semantic features associated with a lexical item (Herschensohn 2000:67). The Principle of Full Interpretation requires that all of the features associated with lexical items in a derivation must be interpretable, or understandable, to PF and LF in order for a derivation to converge (Platzack 1996:371). Some features are weak and can be interpreted by the interfaces without any change to the derivation, but strong features must instead be deleted, often by movement, so that the derivation can continue and not crash (Platzack 1996:372–373).

The task of first language acquisition, thus, is setting the parameters of a language by acquiring lexical items and their associated feature bundles, which children seem to do completely by the time they reach the age of 6 or 7 (Herschensohn 2000:77). Note that first language acquisition does not imply one language exclusively, but that multiple L1s can be acquired during infancy and childhood, as in the case of simultaneous bilinguals. This presents two possibilities for first language attrition: In the first, an L2 becomes dominant over an L1, thus leading to a loss of proficiency in the native language. However, an equally possible scenario is for one of a speaker's L1s to become significantly dominant, leading to attrition in the other(s).

2.2 Literature Review and Discussion.

As Tsimpli points out, the lexicon is frequently cited as a domain of vulnerability in first language attrition (2007:84). This finding, compared to attrition in the morphosyntactic domain, is of less importance from a minimalist perspective, however, because it neither explains how attrition relates to feature-based parameter setting at the PF and LF interface level nor explains the influence that an L2 can have on the attrition of an L1. The loss of a particular lexical item is rather understandable in a context of low retrieval, but the loss of L1 morphosyntactic features acquired in childhood is somewhat more surprising. In this section, I will discuss three research studies about morphosyntactic loss in L1 attrition. From my literature search, finding empirical studies based explicitly on a minimalist framework was difficult, so where explicit minimalist analysis is missing in the original studies, I will attempt to discuss the conclusions of the study in that framework myself.

The first study, Håkansson (1995), investigates five bilingual Swedes who, after living abroad for extended periods of time, experienced significant L1 attrition in the morphosyntactic domain. The five subjects, upon returning to Sweden in their twenties to attend university, failed a Swedish proficiency test. Using written and spoken samples, Håkansson attempts to describe the attrition of the five students from an error analysis perspective, comparing deviant forms to Standard Swedish, specifically in the V2 word order rule (which requires verb raising in topicalized declaratives) and agreement in noun phrase morphology (Håkansson 1995:155). While only one of the students violated the word order rule, a pattern consistently found in L2 learners, the others all managed to retain it without exception (Håkansson 1995:160). NP agreement errors, however, were common to all the students, one student in particular making errors 68 percent of the time. These errors ranged from failure to mark definiteness on the noun, adjective, and article internally in noun phrases to errors with adjective/noun agreement in

predicative structures. With regard to possessives in the study, speakers with a French background made different errors from English speakers, which the author suggests is perhaps the result of transfer from the speaker's other language (Håkansson 1995:161–2). This suggestion that the L2 language system can influence L1 attrition specifically, which Håkansson mentioned, but did not have enough data conclude, was generally corroborated by later research and became the theoretical basis for the next study, Gürel (2004). It's important to note that this is not the only view in generative approaches to language acquisition, however: Meisel (2011) later characterized L2 influence on L1 not as transfer, but as “the online activation of the other language” (112). Overall, Håkansson concludes that bilinguals do not “‘unmark’ their language-specific Swedish word order, but it seems as if they have lost important features of the Swedish agreement system” (1995:165). From a minimalist perspective, it seems likely that while the deeper rules of movement and word order in Swedish are not able to be affected by language attrition, agreement features at the PF interface are quite susceptible to the process. This poses the question of what linguistic domains first language attrition can target, a question which led Gürel (2004) to examine selectivity in L1 attrition.

Gürel (2004), like the previous study, seeks to characterize the selective nature of first language attrition by studying a language-specific property, in this case, binding properties of overt and null pronouns in Turkish in speakers of Turkish who have been living in an English-dominant community for at least a decade. The author seeks to test the consensus in the literature that the selective nature of L1 attrition is the direct result of interference from the other language, especially where the L1 shows markedness where the L2 does not—in overt versus null subject, for example (Gürel 2004:54–5). Unlike English, Turkish is not only a pro-drop language, but the Turkish counterpart of the third person singular pronoun *o* ‘s/he’ cannot be bound by the matrix

subject, unlike its English counterpart (Gürel 2004:58–59). Using a written interpretation task, a story task, and a picture identification-listening task to test her predictions, Gürel found that binding properties of pronouns in Turkish were indeed influenced by L2 interference and suggests that “deeper syntactic competence” *is* susceptible to attrition, a finding that is rather surprising given minimalist predictions.

As minimalism predicts that the computational system of language, i.e. the syntax, is a largely universal element “impenetrable by other modules,” one general prediction is that attrition should not affect syntax itself, but only its interfaces with the articulatory-perceptual and conceptual-intentional systems via PF and LF. Based on this premise, attrition would thus be expected in the domain of morpholexical features that are interpretable on the PF and LF levels, and especially on those where parameters differ between the L1 and L2 (Tsimplici 2007:85–6). The best way to test these theoretical predictions is to, as Tsimplici puts it, “concentrate on features with opposite values in L1 and L2 and examine whether grammaticality judgments, interpretations, and syntactic processing of the L1 may be influenced by the L2” (2007:86). Tsimplici tests these theoretical assumptions using this approach in her analysis of offline data from Tsimplici et al. (2004) and online data from Kaltsa (2006). The offline data, consisting of a production task and an interpretation task, found that L1 speakers of Greek who had lived in Britain for at least six years showed a strong preference for pre-verbal subjects, unlike the control group, who preferred post-verbal subjects, a construction not possible in English (Tsimplici 2007:91–2). The other study consists of online data from four simultaneous bilinguals whose parents had emigrated from Greece to either Germany or Sweden. The task was a grammaticality judgment test designed to assess case on definite and indefinite determiner phrases, on which three out of four participants performed significantly worse than the control group, especially in

judging indefinite DPs (Tsimpli 2007:92–4). Tsimpli suggests that the dominance of Swedish and German (respectively) may interfere with L1 processing, though she also notes that case morphology is not affected in spontaneous production (Tsimpli 2007:94–5). This suggests that attrition is somewhat more complicated than previously thought—that deeper levels such as the parser may be subject to attrition, at least in speeded grammaticality judgment tests (Tsimpli 2007:96).

3. Case Study

In order to better discuss minimalism's predictions about first language attrition and pose questions to further the literature summarized above, I have decided to include a case study of first language attrition and create brief proposals for future research based on my informant's profile. The purpose of this case study is to raise clarifying questions regarding existing research in L1 attrition from a minimalist point of view. Still in its preliminary stages, this case study is included as a proposal for future research, a complete design and pilot of which is outside of the scope of this paper. First, I will build a profile of the speaker using data I have collected regarding his language background and attrition experience. Then, I will use existing minimalist theory and empirical research to discuss and make predictions about the nature of his language attrition process. Finally, I will discuss the limitations of these predictions in light of current information and propose a research agenda for completing this case study of L1 attrition in the future.

To assess my informant's language experience, I initially used the Language Experience and Proficiency Questionnaire (LEAP-Q) as it was developed in Marian, Blumenfeld, & Kaushanskaya (2007), as well as some additional follow-up questions based on his responses. However, in revising the paper, I decided to conduct a second interview using the Bilingual

Language Profile developed by Birdsong, Gertken, & Amengual (2012). It takes a more straightforward approach to assessing language dominance, using a standard and clear scoring system for evaluating four distinct modules covering language history, language use, language proficiency, and language attitudes, and provides an accessible format that is easy to administer via Google Forms.

3.1 Profile of Informant

Here I will cover the most salient points from my informant's Bilingual Language Profile, beginning with biographical information and language history, language use, language proficiency, and finally language attitudes. For a complete look at my informant's responses, please refer to the Appendix A.

3.1.1 Biographical Information and Language History

My informant is a 29-year-old male undergraduate student at Northeastern University. He reports acquiring both English and Spanish at birth and growing up in a family that speaks both English and Spanish. Although he has felt comfortable in English for as long as he can remember, he indicates that he did not feel comfortable using Spanish until age 3. Despite over 20 years of courses conducted in English, he reports no formal education in Spanish. He also reports that he has lived in an English-speaking region for over 20 years, compared to half that amount living in a region where Spanish was spoken. Finally, he indicates over twenty years spent in a work environment where English is spoken and 0 years in a work environment where Spanish is spoken.

3.1.2 Language Use

In an average week, my informant reports using English 100% of the time with his friends and 90% of the time with his family. At school/work, he reports using English 90% of the time,

Spanish 0% of the time, and other languages 10% of the time. He indicates that 80% of his self-talk is in English, 10% in Spanish, and 10% in other languages. Additionally, he reports counting 90% of the time in English, 0% in Spanish, and 10% in other languages.

3.1.3 Language Proficiency.

Despite rating himself 6/6 for understanding both English and Spanish and 6/6 for speaking English, my informant rates himself only 3/6 on his speaking ability in Spanish. Additionally, he rates his reading skills 6/6 in English and 1/6 in Spanish. In writing, he reports 6/6 in English and 0/6 in Spanish.

3.1.4 Language Attitudes

He reports that he feels like himself 6/6 when speaking both English and Spanish. However, he identifies more strongly with a Spanish-speaking culture than an English-speaking culture, rating his identification 4/6 and 6/6, respectively. He considers it equally important to use English and Spanish like a native speaker (6/6 for English and Spanish), but also for others to think he is a native speaker (6/6 for English and Spanish).

Finally, to the traditional structure of the BLP, I added one additional open-ended question asking my informant if there is anything else he would like to share about his language history. He reports that he seeks opportunities to improve his Spanish to a level that reflects the pride he has in his Latin American heritage. He reports that he is also studying American Sign Language, and although he also seeks to improve his signing skills, his motivations for learning ASL are very different from his motivations to improve his Spanish as ASL, his L2, is not central to his identity.

3.1.5 Score

The BLP, unlike the LEAP-Q, has a standardized scoring system, which offers a quantitative language dominance index (Gertken et al. 2014:212-213). The scores for the questions in each module are given one point, which are then summed and multiplied by factors to give each module equal weight, as each module does not have the same number of questions. The sum of the modules gives a global score for each language, out of a possible 218 points. To determine the language dominance index, one language score is subtracted from the other. Scores near zero indicate the most balanced bilingualism, and scores further from zero represent dominance in one of the informant's two languages (Birdsong et al. 2012). My informant had a global score of 207.95 for English and 107.054 for Spanish, leading to a language dominance index of 100.896 heavily skewed toward English dominance. Please see tables 1 and 2 in Appendix B for the complete module and global scores.

3.2 Discussion

In this section, I will use the case of my informant to propose future research and raise clarifying questions about the nature of L1 attrition based on current minimalist theory and the research summarized above. My informant is highly likely to have experienced attrition in the lexical domain, as he currently only reports using Spanish in two very limited domains: ten percent of the time when speaking to his family and ten percent of the time in self-talk. Long-distance communication with his family, in particular, suggests an ability to get by with fewer lexical items, especially considering he can engage in language mixing practices with his mother, who also understands English. Lexical attrition, however, is not particularly interesting from a minimalist point of view because it does not address the process of attrition as it relates to the grammar. The bulk of this analysis, thus, will—just as above—focus on the attrition in the morphosyntactic domain.

3.2.1 Proposal One

All three of the studies above suggest that L1 attrition is influenced by interference from the now-dominant L2. This interference is predicted to occur where the two languages have different parameters, or in minimalist terms, have “features with opposite values” (Tsimpli 2007:86). For example, Spanish, unlike English, is a pro-drop language, so now that English has become the dominant system in the mind of my informant, one would expect that the use of overt subject constructions would be significantly higher than that of an L1 Spanish speaker without attrition. The best way to test this initially would be an elicitation task such as a picture description task that involves telling open-ended stories based on images provided and observing the frequency of overt subjects in his constructions. These findings could be compared to a simultaneous English/Spanish bilingual who has not experienced significant attrition. However, the lexical attrition of my informant makes elicitation tasks difficult, so the pictures would have to represent concepts that would be familiar and easy to discuss despite significant lexical attrition.

3.2.2 Proposal Two

Another important question that has come out of these first language attrition studies is which linguistic domains are susceptible to attrition, especially whether attrition can target only the PF and LF interfaces or whether it can occur more deeply in the syntax. As Tsimpli summarizes it, the “theoretical prediction [is] that L1 attrition may only affect interface properties and not purely syntactic L1 options,” a claim based on the minimalist view that “the computation system [i.e., syntax] alone [is] modular, while interface levels are interactive in nature” and thus vulnerable to attrition via interference (2007:95). Gürel’s results—that binding principles related to pronouns are subject to attrition—seem to challenge this assumption, though. Considering this, to build an accurate description of the process of attrition in my informant, it would be

necessary not only to test for attrition at the level of the PF and LF interfaces—by testing my informant’s use of case morphology, for example—but also in the deeper syntactic level, by investigating my informant’s judgments about binding principles using an interpretation task similar to the written interpretation task conducted in Gürel (2007:62). A crucial difference, however, is that this task would likely have to be conducted orally, as my informant has low literacy in Spanish.

3.3.3 Proposal Three

Finally, to complete the picture, I would investigate what exactly is being lost—competence or performance—in the L1 attrition of my informant. Minimalism would predict that it is more likely to be ability to perform than actual competence that’s lost in L1 attrition, as many L1 speakers—including my informant, who rated himself 10/10 on understanding Spanish—are still able to easily parse and comprehend their L1 despite attrition. However, the results of Tsimpli’s second study (2007)—that speakers perform worse in judging case morphology in speeded grammaticality judgment tests than using it in actual performance—challenges that notion. A similar speeded grammaticality judgment test in which my informant’s intuitions about Spanish case morphology are compared to those of a non-attributed L1 Spanish speaker could help address this question. This would allow us to see to what extent my informant has experienced attrition in competence in the domain of case morphology.

4. Conclusion

While many previous studies in L1 attrition have focused on lexical loss and the sociolinguistic, identity-based reasons why attrition may occur, studies outlining morphosyntactic attrition have begun to appear, attempting to explain the process of attrition not just from the lexical point of view, but also from the point of view of the grammar. The Minimalist Program, whose goals are

to create a clear, economical, and cognitively-motivated model of language, can be a useful perspective from which to examine attrition as a cognitive process.

The studies I have outlined have raised three main questions: First, to what extent is L2 transfer responsible for L1 attrition? While Håkansson (1995) tentatively proposed that it might be responsible for differences he observed in the Swedish attrition of native Swedish/French and Swedish/English simultaneous bilinguals, by the time Gürel (2004) and Tsimpli (2007) were published, this had become a starting assumption for studies in morphosyntactic attrition, prompting a research methodology that tests changes specifically in features that differ from the L1 to the L2, as these are presumably the best candidates for finding morphosyntactic attrition to examine. While this notion of “parameter resetting” based on the differences between the morpholexical features in the L1 and L2 is theoretically grounded, a research priority should be to examine further whether this morphosyntactic decay is indeed the result of L2 transfer, or whether general patterns of morphosyntactic decay in L1 attrition can be explained by external factors. A second question raised by the studies: which linguistic domains are subject to first language attrition, and which are not? Minimalism predicts that attrition should not target syntax, which is considered a module unto itself, but instead target the way that this module interacts with external systems at the PF and LF interfaces. While the results of Håkansson (1995) and the offline results from Tsimpli (2007) support this view, attrition in binding constraints outlined in Gürel (2004) and attrition in the case morphology in the online data from Tsimpli (2007) have begun to challenge the assumption that deeper syntactic competence cannot be subject to attrition. In future research, it will be important to continue examining attrition in a wide variety of linguistic features to clarify which domains can be subject to attrition and which cannot. A final question: is there a difference in attrition between competence and performance?

Minimalist theory assumes, because speakers are generally able to understand their L1 despite demonstrated attrition in production tasks, that L1 attrition is not an issue of underlying competence, but in fact an issue of retrieving that information in performance. Tsimpli's (2007) online data study, however, saw the opposite case, where L1 Greek speakers continued to perform native-like in case morphology, but were unable to quickly and accurately use that underlying competence in a speeded grammaticality judgment task. Future research should aim to replicate this finding to assess why and how morphosyntactic competence may be affected by attrition despite no observable difference in production or performance, as this is quite a surprising finding.

Finally, I have presented a case study of L1 Spanish attrition in a Spanish/English simultaneous bilingual who grew up in a Spanish-speaking household, but now only uses Spanish in a very limited context. The prediction that his attrition would be focused on areas where features differ between English and Spanish could be tested by his use of overt subjects in Spanish, a pro-drop language, compared to a typical L1 Spanish speaker. The question of whether deeper syntactic competence could be affected by morphosyntactic attrition could be tested by using a binding interpretation task similar to that of Gürel (2007). Finally, a speeded grammaticality judgment test focused on case morphology could investigate whether deeper syntactic competence, and not just performance, can be targeted by attrition. While a minimalist viewpoint would generally predict that only performance is compromised in L1 attrition, the recent results from Tsimpli's (2007) online data suggest that that prediction may no longer be warranted. Overall, the inclusion of this case study was intended not only to expand the discussion on the theoretical framework and literature summarized above, but also to raise

questions and offer brief proposals for future research to expand upon the results of these studies in order to better understand the nature of L1 morphosyntactic attrition.

Appendix A: Complete Bilingual Language Profile Responses

Bilingual Language Profile: English-Spanish

We would like to ask you to help us by answering the following questions concerning your language history, use, proficiency, and attitudes. This survey was constructed with support from the Center for Open Educational Resources and Language Learning at the University of Texas at Austin to better understand the profiles of bilingual speakers in diverse settings with diverse backgrounds. The survey consists of 19 questions and will take less than 10 minutes to complete. This is not a test, so there are no right or wrong answers. Please answer every question and give your answers sincerely, as only this will guarantee the success of the investigation.

Thank you very much for your help.

Please click continue to begin.

I. Biographical Information

First Name *

Last Name *

Age *

29

Sex *

M

F

Current place of residence: City/State *

MA

Current place of residence: Country *

United States

Highest level of formal education *

Less than high school

High school Some

college College

(B.A, B.S.)

Some graduate school

Masters

PhD / MD /

JD Other:

II. Language History

In this section, we would like you to answer some factual questions about your language history. Please answer each question by selecting the appropriate answer from the drop-down menu.

At what age did you start learning ENGLISH?

Since birth ▼

At what age did you start learning SPANISH?

Since birth ▼

2. At what age did you start to feel comfortable using the following

At what age did you start to feel comfortable using ENGLISH?

For as long as I can remember. ▼

At what age did you start to feel comfortable using SPANISH?

9 ▼

3. How many years of classes (grammar, history, math, etc.) have

How many years of classes (grammar, history, math, etc.) have you had in ENGLISH (primary school through university)?

20+ ▼

How many years of classes (grammar, history, math, etc.) have you had in SPANISH (primary school through university)?

0 ▼

4. How many years have you spent in a country/region where the following languages are spoken?

How many years have you spent in a country/region where ENGLISH is spoken?

20+ ▼

How many years have you spent in a country/region where SPANISH is spoken?

10 ▼

5. How many years have you spent in a family where the following languages are spoken?

How many years have you spent in a family where ENGLISH is spoken?

20+ ▼

How many years have you spent in a family where SPANISH is spoken?

20+ ▼

6. How many years have you spent in a work environment where the following languages are spoken?

How many years have you spent in a work environment where ENGLISH is spoken?

20+ ▼

How many years have you spent in a work environment where SPANISH is spoken?

0 ▼

III. Language use

In this section, we would like you to answer some questions about your language use.

Please answer each question by selecting the appropriate answer from the drop-down menu.

7. In an average week, what percentage of the time do you use the following languages with friends?

Total use for all languages should equal 100%.

In an average week, what percentage of the time do you use ENGLISH with friends?

100% ▼

In an average week, what percentage of the time do you use SPANISH with friends?

0% ▼

In an average week, what percentage of the time do you use OTHER LANGUAGES with friends?

0% ▼

8. In an average week, what percentage of the time do you use the following languages with family?

Total use for all languages should equal 100%.

In an average week, what percentage of the time do you use ENGLISH with family?

90% ▼

In an average week, what percentage of the time do you use SPANISH with family?

10% ▼

In an average week, what percentage of the time do you use OTHER LANGUAGES with family?

0% ▼

9. In an average week, what percentage of the time do you use the following languages at school/work?

Total use for all languages should equal 100%.

In an average week, what percentage of the time do you use ENGLISH at school/work?

90% ▼

In an average week, what percentage of the time do you use SPANISH at school/work?

0% ▼

In an average week, what percentage of the time do you use OTHER LANGUAGES at school/work?

10% ▼

10. When you talk to yourself, how often do you talk to yourself in the following languages?

Total use for all languages should equal 100%.

When you talk to yourself, how often do you talk to yourself in ENGLISH?

80% ▼

When you talk to yourself, how often do you talk to yourself in SPANISH?

10% ▼

When you talk to yourself, how often do you talk to yourself in OTHER LANGUAGES?

10% ▼

11. When you count, how often do you count in the following languages?

Total use for all languages should equal 100%.

When you count, how often do you count in ENGLISH?

90% ▼

When you count, how often do you count in SPANISH?

0% ▼

When you count, how often do you count in OTHER LANGUAGES?

10% ▼

IV. Language proficiency

In this section, we would like you to rate your language proficiency by giving marks from 0 to

6. Please answer each question by clicking on the appropriate button.

12. How well do you speak the following languages?

How well do you speak ENGLISH?

| | | | | | | | | |
|-----------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|----------------------------------|-----------|
| | 0 | 1 | 2 | 3 | 4 | 5 | 6 | |
| not well at all | <input type="radio"/> | <input checked="" type="radio"/> | very well |

15. How well do you write the following languages?

How well do you write ENGLISH?

| | | | | | | | | |
|-----------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|----------------------------------|-----------|
| | 0 | 1 | 2 | 3 | 4 | 5 | 6 | |
| not well at all | <input type="radio"/> | <input checked="" type="radio"/> | very well |

How well do you write SPANISH?

| | | | | | | | | |
|-----------------|----------------------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------|
| | 0 | 1 | 2 | 3 | 4 | 5 | 6 | |
| not well at all | <input checked="" type="radio"/> | <input type="radio"/> | very well |

7. Language attitudes

In this section, we would like you to respond to statements about language attitudes by giving marks from 0-

6. Please respond to each statement by clicking on the appropriate button.

I feel like myself when I speak ENGLISH.

| | | | | | | | | |
|----------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|----------------------------------|-------|
| | 0 | 1 | 2 | 3 | 4 | 5 | 6 | |
| disagree | <input type="radio"/> | <input checked="" type="radio"/> | agree |

I feel like myself when I speak SPANISH.

| | | | | | | | | |
|----------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|----------------------------------|-------|
| | 0 | 1 | 2 | 3 | 4 | 5 | 6 | |
| disagree | <input type="radio"/> | <input checked="" type="radio"/> | agree |

17. I identify with the following cultures.

I identify with an ENGLISH-speaking culture.

| | | | | | | | | |
|----------|-----------------------|-----------------------|-----------------------|-----------------------|----------------------------------|-----------------------|-----------------------|-------|
| | 0 | 1 | 2 | 3 | 4 | 5 | 6 | |
| disagree | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input checked="" type="radio"/> | <input type="radio"/> | <input type="radio"/> | agree |

I identify with a SPANISH-speaking culture.

| | | | | | | | | |
|----------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|----------------------------------|-------|
| | 0 | 1 | 2 | 3 | 4 | 5 | 6 | |
| disagree | <input type="radio"/> | <input checked="" type="radio"/> | agree |

I identify with the following languages like a native speaker.

It is important to me to use (or eventually use) ENGLISH like a native speaker.

| | | | | | | | | |
|----------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|----------------------------------|-------|
| | 0 | 1 | 2 | 3 | 4 | 5 | 6 | |
| disagree | <input type="radio"/> | <input checked="" type="radio"/> | agree |

It is important to me to use (or eventually use) SPANISH like a native speaker.

| | | | | | | | | |
|----------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|----------------------------------|-------|
| | 0 | 1 | 2 | 3 | 4 | 5 | 6 | |
| disagree | <input type="radio"/> | <input checked="" type="radio"/> | agree |

19. I want others to think I am a native speaker of the following languages.

I want others to think I am a native speaker of ENGLISH.

| | | | | | | | | |
|----------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|----------------------------------|-------|
| | 0 | 1 | 2 | 3 | 4 | 5 | 6 | |
| disagree | <input type="radio"/> | <input checked="" type="radio"/> | agree |

I want others to think I am a native speaker of SPANISH.

| | | | | | | | | |
|----------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|----------------------------------|-------|
| | 0 | 1 | 2 | 3 | 4 | 5 | 6 | |
| disagree | <input type="radio"/> | <input checked="" type="radio"/> | agree |



Is there anything else you'd like to share about your language history?

Although my Spanish use and fluency isn't what I would like it to be, I am constantly seeking other native Spanish speakers to communicate and socialize with. My Latin American heritage is something I am proud of and wish was a bigger part of my life. Unfortunately, NEU's linguistics department isn't full of people who look like me, or speak Spanish natively. I am also not surrounded by native Spanish speakers in my work or home life.

Communicating fluently in Spanish is something I strive to do so that I am better able to be apart of my cultural identity.

Signing in ASL fluently is something that I strive for so that I am seen as a competent signer in my field. ASL is something I aim to practice to avoid embarrassment, and to justify the many years I've devoted to studying ASL. It's also important for me to grasp the language for my studies as a researcher in the field of ASL linguistics. I do seek deaf individuals to communicate with, but the motivation and need are different from what I experience when seeking native Spanish speakers to socialize with.

This form was created inside of Northeastern University.



Appendix B: Bilingual Language Profile Scores

Table 1.

Modular Scores

| Language History | | Language Use | | Language Proficiency | | Language Attitudes | |
|------------------|---------|--------------|---------|----------------------|---------|--------------------|---------|
| English | Spanish | English | Spanish | English | Spanish | English | Spanish |
| 54.48 | 27.694 | 49.05 | 2.18 | 54.48 | 22.7 | 49.94 | 54.48 |

Table 2.

Total Scores

| English | Spanish | Dominance |
|---------|---------|-----------|
| 207.95 | 105.054 | 100.896 |

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