Spanish and Polish Heritage Speakers in Canada: The Overt Pronoun Constraint

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Graduate Program in Hispanic Studies
A thesis submitted in partial fulfillment of the requirements for the degree in Doctor of Philosophy
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Spanish and Polish Heritage Speakers in Canada: The Overt Pronoun Constraint

(Thesis format: Monograph)

by

Ewelina Barski

Graduate Program in Hispanic Studies

A thesis submitted in partial fulfillment of the requirements for the degree of Doctor in Philosophy

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Abstract

This study investigates the grammar of Spanish and Polish heritage speakers in Canada: Speakers who grew up speaking their family language at home, where the community language is English. Studies looking at the language of heritage speakers investigate the stability of language and how grammar develops under reduced input conditions (Benmamoun et al., 2010). The aim of this work is to investigate the impact of reduced input on a component within the Null-Subject Parameter - the Overt Pronoun Constraint (OPC) (Montalbetti, 1984). The goal is to understand the interpretations that heritage speakers assign to overt pronouns in very specific contexts.

The OPC is a restriction on an overt pronoun’s possible coreferent. It states the restrictions on this pronoun when its coreferent is a quantified expression (someone, who). As null-subject languages, in Spanish and Polish an overt pronoun in the subordinate clause cannot be bound by a quantified expression (Nadie cree que él va a ganar ‘No one believes that he will win’). The overt pronoun needs to be free within its binding domain.

Following Montalbetti (1984), I assume that all quantifiers will be treated equally. Moreover, following a generative framework, it is assumed that that the Null Subject Parameter is set early in the grammars of these null-subject heritage languages (Chomsky, 1981; Jaeggli, 1982; Rizzi, 1982), and thus they will demonstrate understanding of the interpretative restrictions found with subordinate overt pronouns with quantified antecedents.

Results from this study were gathered from four groups of speakers with 20 participants in each group: Spanish heritage, Spanish monolingual, Polish heritage, Polish monolingual. Participants completed two comprehension tasks: a Picture-Matching task, and a Sentence-Selection task. Both tasks tested interpretation of the implicit knowledge of the OPC with quantified antecedents.
Results for the Picture-Matching task show that advanced heritage speakers understand the interpretative contrast present with overt and null pronouns within OPC contexts. However, heritage speakers appear to have more difficulty in the Sentence-Selection task: They do not differentiate between null and overt pronouns. Results suggest lower-proficiency participants have difficulty with the reading/comprehension component of the task, but the OPC remains in their grammars.

Keywords

Overt Pronoun Constraint, heritage speakers, heritage language, quantifiers, pronouns, Null-Subject Parameter, syntax, Spanish, Polish, Canada
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Chapter 1

1.1 Introduction

This dissertation focuses on (possible) language change and language maintenance that is found in heritage language communities in Canada. The aim is to investigate the question of whether Canadian-born children of these immigrant populations can lose or attrite a specific feature in their language, or whether it remains stable in their grammar. Knowing that English is the dominant language of heritage speakers in Canada, I want to know if their dominant language will affect their interpretation of their family language.

Specifically speaking, this work analyses the level of maintenance of a property of the Null Subject Parameter (NSP) – the Overt Pronoun Constraint (OPC) – in second generation Spanish and Polish heritage speakers. Two comprehension tasks are employed in order to test the interpretative abilities in heritage speakers. In doing so, I will be able to find out whether English has had an effect on these populations in a very specific syntactic construction that is contrastive in English. It is the intention of this study to add to the current work on heritage languages and heritage speakers by analyzing two distinct heritage languages. Two very different languages were chosen in order to be able to put forth a cross-linguistic analysis of heritage language interpretation of the overt pronoun in the subordinate clause when its antecedent is quantified.

This dissertation is organized as follows: First a complete overview of heritage languages is provided, explaining what they are and the relevance of not only studying heritage languages, but studying Spanish and Polish heritage languages. Next, the
theoretical framework for this study is provided, followed by a detailed overview of what has been found in previous works in terms of heritage language characteristics. Finally, this chapter closes with an explanation of heritage languages in Canada and the support that is found in Canada’s ten provinces and three territories. Chapter 2 explains the syntactic phenomenon and how it pertains to both languages studied. Chapter 3 discusses the previous work done on the OPC and null and overt pronouns in general. In Chapter 4 the study’s methodology is presented, which is followed by the results found in both comprehension tasks. Finally, Chapter 6 provides a discussion on the findings and a conclusion to the dissertation.

1.2 Heritage Languages and Heritage Speakers

This work adopts Valdés’ (2000) definition of a heritage language, that is, a language that is spoken in the home, a family language, and crucially, it is not the language of the community. It has been mostly studied in cases of immigration in the USA and Canada, but it also exists in Europe, or other territories that receive foreign immigration. This new migrant situation results in a reduced use of the home country language, confined to familiar contexts, church/religious ceremony, or in very specific and limited contexts. In contrast, the community language is spoken everywhere else, outside of the home and usually it is the language of education. Those who immigrate as adults tend to maintain their home language as their dominant language, and their children who are second generation speakers tend to be dominant speakers of the community language, while their
level of their heritage language becomes the weaker language. Because the linguistic
text of these speakers varies from person to person, so do their levels of fluency.

There are many factors that can affect the level of proficiency of a heritage
speaker such as the country of birth. If the speaker was born in the country of origin and
had the opportunity to attend some sort of schooling such as preschool, kindergarten, or
the initial levels of primary school then this exposure to the family language may
influence the speakers’ overall fluency in their adult years. If the speaker was born in the
country of residence then the amount of exposure to the family language can vary
depending on the family and the amount of contact they have with the heritage language
and community. In the case of Canada, there are families who decide early on that they
will only speak English at home because they feel that the language of opportunity for
their children is English and not their heritage language. Conversely, there are families
who make a conscious effort to maintain the heritage language at home and they have
access to their family language through contact with other family members, church, and
possibly heritage school. If heritage speakers as children have access to their family
language outside the home, this will help in maintaining their fluency in that said
language.

Fishman (2001) states that in the United States, the term heritage language
includes not only immigrant languages but also indigenous and colonial languages.
Carreira (2004) explains that the problem with this classification is that each group comes
with its own historical, social, linguistic, and demographic realities. For example,
Carreira further clarifies that a dramatic difference between an indigenous and an
immigrant language has to do with “the absolute number of native speakers of [that given
language], the proficiency levels of such speakers, and the variety of social networks in which the languages are used” (p. 2). For the point of view of this work, when referring to heritage languages I will always be using Valdés’ definition described above.

Rothman (2009) acknowledges that the term *heritage language* may have a wider definition. For example, according to Fishman (2001) a heritage speaker includes those with just a cultural connection who may not speak the language at all, or may understand set phrases (passive bilinguals, or overhearers). However, Rothman (2009) explains that from a “purely linguistic point of view […] an individual qualifies as a heritage speaker if and only if he or she has some command of the heritage language acquired naturally” (Rothman, 2009, p. 2). There must be something more other than an emotional or cultural tie to the language. The language must have been learned naturally in the home and not in the classroom. There is a crucial difference between those who have grandparents or great-grandparents who spoke Spanish (or Polish) and those who grew up speaking and being exposed to the language at home. Those with just a cultural tie want to learn the language for the first time as adults in the classroom because they feel that emotional connection to the language and culture. These types of speakers are considered to be second language (L2) learners with their own motivation for learning the language for the first time. Conversely, those who grew up speaking the language at home are labeled as heritage speakers. They learned their family language as their first language (or simultaneously with the societal language), and over time as in the case of English-speaking Ontario, English became the dominant language, as is the case for both of the heritage language groups studied here.
Montrul (2011b) points out that many sociolinguistic studies have focused on describing heritage languages as a phenomenon created through various language communities of Spanish in the United States (for example) such as the Spanish spoken in Los Angeles, in New York, Miami, and the Southwest. Looking at these different language varieties, these studies had most frequently addressed theoretical issues in language contact and change as a sociohistorical phenomenon (Lynch, 1999; Otheguy & Zentella, 2012; Otheguy, Zentella & Livert, 2007; Silva-Corvalán, 1994; Zentella, 2007). On the other hand, formal linguistics and psycholinguistic perspectives regard language change in heritage speakers as an individual phenomenon in the mind, at the level of knowledge, which is the concept that I adopt here.

What makes a heritage language special is the quantity and quality of the input received by the speakers of the said language. As mentioned earlier, each individual is different with varied levels of proficiency ranging from beginners to native competence. As mentioned above, the time of exposure to the dominant (community) language also varies. It is most common for heritage speakers to be early bilinguals. This type of bilingual is exposed to two languages (the heritage language and the community language) from birth, which further classifies them as simultaneous bilinguals (birth-age 3). They may also be early sequential bilinguals (age 4-6 preschool), or late sequential bilinguals (age 7-12, elementary school), which indicates that a child learns one language and then starts to learn a second language. This would be an example of heritage speakers who were born in their country of origin and who immigrated after age four. Also, it is possible for the heritage speaker to be born in the country of residence. This typically displays two scenarios: one where the child has little or no contact with the
community language until it is time for preschool, or as mentioned above the child starts learning the community language simultaneously with their heritage language.

Children learning their heritage language at home tend not to be educated in that language. Education is done in the community language (dominant language) and for this reason, in most cases children grow up being illiterate in their heritage language. The fact that they only receive input within the home or in family settings is why the language only develops up to a certain point, which is usually up until they start attending day care or preschool. As the child starts attending school, the dominant language switches from the heritage language to that of the community and the development of the heritage language slows down (and eventually stops developing). This change in the amount of input that is received in the heritage language tends to cause incomplete acquisition and over a given period of time aspects of language that were once fully acquired in childhood will become attrited. Montrul’s (2008) main hypothesis states that “language loss should be more dramatic in early than in late bilingualism” (p. 60). Referring to the Critical Period Hypothesis, she further explains that first language loss affects children and adults differently and this could be because, depending on the age of onset of bilingualism (child vs. adult), a different mechanism could be at play.

While those who argue for incomplete acquisition in heritage speakers (Montrul, 2004, 2005, 2006, 2007; Polinsky, 1997a, 1997b, 2005), compare it to a monolingual grammar and claim that the grammar that is found in heritage speaker bilinguals is due to lack of input in their environment, there is another side to the coin. The opposing side (Cabo & Rothman, 2012; Pires & Rothman, 2009; Prada Pérez & Cabo, 2011; Rothman, 2007) argues that the views that support the theories of incomplete acquisition do not take
into consideration the possibility that the absence of the grammatical aspect in question
may be due to the fact that it simply does not exist in the input. This in turn would not
allow for it to be acquired in the first place and for this reason a heritage language cannot
be termed as being incomplete but instead different. The fact that heritage speakers lack
the input is an inadequate explanation for the difference in the two grammars because
heritage speakers receive input from adults whose language has already undergone some
sort of change or attrition due to lack of access to the heritage language and at the same
time contact with other languages.

Taking all of the previously mentioned factors that affect heritage language
acquisition into consideration, it would not be surprising that as adults “their heritage
language resembles in many aspects a second language acquired in adulthood as opposed
to the first language acquired in childhood, in the same sense that it differs from what one
expects for full ultimate attainment of the heritage language as a first language acquired
in childhood” (Rothman, 2009, p. 3). Montrul, Foote and Perpiñán (2008a) explain that
heritage speakers are similar to both L1 and L2 learners in that they have contact with
their heritage language from birth. Depending on the amount of contact they have with
native speakers of their heritage language and when they begin to be exposed to the
dominant language, they will develop basic knowledge of their heritage language. Just as
monolingual children go through predictable stages as their language develops, bilingual
children go through the same stages. Nevertheless, they also have a lot in common with
L2 learners. Like L2 learners, heritage speakers receive an inconsistent amount of input.
Since the dominant language of both groups of speakers is not the L2 or the heritage
language (due to the pure definition of an L2 and heritage language) both groups commit
transfer errors from their majority language to their weaker language. Finally, L1 acquisition does not rely on any external factors in order to successfully be acquired, while in L2 and heritage language acquisition factors such as “motivation, linguistic identity, and other affective factors play a more significant role in […] language development” (Montrul et al., 2008a, p. 506).

Table 1 below shows very clearly the differences and similarities in the acquisition of the first (monolingual) and adult second language and the factors that are involved in the acquisition process (from Montrul, 2008, p. 28). As can be seen, the two processes tend to overlap in the setting and mode within the input factor, where both children and adults receive naturalistic and aural input. The difference is that adults also receive instructed and written input. There is further overlap in the developmental errors within the target system. Both adults and children go through developmental errors, but adults also commit transfer errors from their first language. Nevertheless, they do vary quite a bit when looking at factors such as previous linguistic knowledge, the timing, amount and quality of input, personality and affect, and most importantly the outcome of the target system. When a child learns its first language it starts off with no previous knowledge of a language system and the acquisition process starts from birth. It will receive constant and linguistically rich input in that language, and without concern for the child’s personality type (i.e. shy vs. social) the child will successfully acquire a full and complete language system in comparison to its linguistic community. Contrastingly, when an adult begins learning a second language this occurs after puberty when there is already a fully developed linguistic system (L1) and the input that will be received in the new L2 will vary in quantity and frequency. The quality of the input tends to be
contextually restricted with less varied structures and vocabulary, and there will be access to input from other non-native speakers. Unlike with children, personality and affective factors are relevant when it comes to adult second language acquisition and the outcome of the L2 tends to be variable and typically incomplete.

**Table 1. Some differences between L1A and L2A (from Montrul 2008, p. 28)**

<table>
<thead>
<tr>
<th>FACTORS</th>
<th>L1A</th>
<th>L2A ADULT</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Previous linguistic knowledge</td>
<td>None.</td>
<td>L1 fully developed</td>
</tr>
<tr>
<td>2. Input</td>
<td></td>
<td></td>
</tr>
<tr>
<td>a. Timing</td>
<td>Early (birth)</td>
<td>Late (after puberty)</td>
</tr>
<tr>
<td>b. Setting</td>
<td>Naturalistic</td>
<td>Instructed and Naturalistic</td>
</tr>
<tr>
<td>c. Mode</td>
<td>Aural</td>
<td>Written and Aural</td>
</tr>
<tr>
<td>d. Amount</td>
<td>Constant and Abundant</td>
<td>Varies in amount and frequency</td>
</tr>
<tr>
<td>e. Quality</td>
<td>Linguistically varied, rich, contextually appropriate</td>
<td>Contextually restricted, less variety of structures/vocabulary, input from other non-native speakers</td>
</tr>
<tr>
<td>3. Personality and affective factors</td>
<td>Irrelevant</td>
<td>Relevant</td>
</tr>
<tr>
<td>4. Target system</td>
<td></td>
<td></td>
</tr>
<tr>
<td>a. Types of errors</td>
<td>Developmental</td>
<td>Developmental and transfer</td>
</tr>
<tr>
<td>b. Fossilization</td>
<td>Non-existent</td>
<td>Typical</td>
</tr>
<tr>
<td>c. Outcome</td>
<td>Successful, complete L1</td>
<td>Variable, typically incomplete</td>
</tr>
</tbody>
</table>
Comparing Table 1 to what is observed in heritage speakers, the first language (L1) of a heritage speaker is their family language, which is acquired naturalistically from birth. The mode of input that they receive is aural and they usually do not have exposure to the written language unless it is introduced in the home or they attend “Heritage/Saturday School”. As children, heritage speakers will receive a constant amount of input from their family language until they are exposed to the community language, which usually occurs around the age of four when they start to attend preschool. Once schooling in the majority language is introduced, the amount of input begins to vary and the quality is contextually and structurally restricted to vocabulary that is centred around the home, family, and church. Personality and affective factors do tend to be relevant for heritage speakers because they are typically more aware of their language abilities. If they believe that their language skills are not as strong, they may choose to not communicate in the heritage language in order to avoid any type of embarrassment. Heritage speakers usually have a fully developed phonetic system in that they sound like native speakers, but they will also produce errors that may be due to lack of development in childhood (incomplete acquisition) or due to a lack of use (language loss).

Montrul (2011b) adds that most heritage speakers speak the heritage language with older family members, while children use the dominant language with each other. She clarifies that “heritage speakers do not reach all the structural milestones in their language because they do not use the language as often as needed for them to reach those milestones (some of which are reached at the age 10 or beyond, such as the subjunctive)”
The limited contact with native speakers of the heritage language stops the development of the language, while immersion in the dominant language, (English in the case of Ontario, Canada) facilitates the acquisition of a language, which resembles that of a first or native language. Studies have shown that the language abilities of heritage speakers are distinct from both native speakers and second language learners (Montrul, 2004, 2005, 2006, 2008; Montrul & Bowles, 2009; Montrul, Foote & Perpiñán, 2008a, 2008b; Rothman, 2009; Valdés, 2005, among others) in that they tend to have strong comprehension skills but varied production skills.

1.3 Relevance of Studying Heritage Languages

Research in heritage speakers has just recently begun to pick up speed not only in the field of education but also in theoretical linguistics. Work is being carried out looking at various immigrant populations within the United States, Canada, Europe, and Australia. It has been found that studying heritage speakers can be just as beneficial as studying first language acquisition. Unlike studying young children, adult heritage speakers have a larger attention span, and they possess a language that is not influenced by external factors. In other words, “a heritage language is what’s left after you have stripped away everything that is rote learned, driven by tradition, enforced by the norm, and driven to non-compositionality by many users” (Benmamoun, Montrul & Polinsky, 2010, p. 55). Benmamoun et al. continue to explain that studying heritage languages is important because these speakers “straddle the boundaries between first and second language acquisition, which makes them extremely valuable in testing fundamental questions about
the nature of linguistic knowledge, the correlation between age of acquisition and linguistic competence, the nature and role of input that contribute or not to native-like competence, and the interplay between the heritage language and the dominant language” (p. 15). Polinsky (2013) explains that the study of heritage languages is important in that it furthers our understanding of natural languages. By this she means that the more we understand the structure of heritage languages and their changes, the more we will be able to understand language as a whole.

In the field of heritage languages and heritage speakers it is thought that heritage languages are special because they resemble their baseline language (the language of their monolingual counterparts) but at the same time they deviate away from it. As a whole, heritage languages are similar to each other by showing certain trends but at the same time not all changes observed are found across the board in all heritage languages. Because of these dichotomies, it is important to know the changes that occur in a first language and their reasons, we can then see how fragile language is as a whole and what the various reasons may be for the observed changes.

1.3.1 Relevance of Studying Spanish and Polish as Heritage Languages

As Section 1.7 will show, Canada is an interesting country to observe the development of heritage languages and allows for the study of both Spanish and Polish heritage languages in contact with English (the dominant community language). As will be explained and discussed in complete detail in Chapter 2, both Spanish and Polish are
null-subject languages and they share the same grammatical phenomenon (the Overt Pronoun Constraint). Studying this constraint with just Spanish heritage speakers, for example, would provide a thorough understanding of the development of the said constraint in the one language group in Canada. Such a study would not permit overarching conclusions about other null-subject heritage languages and would require further testing. However, adding Polish to the investigation allows for a cross-linguistic analysis and thus the results hold greater depth and meaning especially because the comparison is done between two languages from two different family groups\textsuperscript{1}. This study will allow linguists to see if the Null Subject Parameter may be affected by reduced input in a heritage language, while the dominant language of the speakers is a non-null-subject language. As mentioned above, this study aims to help in the understanding of the strength and/or fragility of the first language (family/heritage language) by looking at how persistent a language principle may be in two different heritage languages when the principle does not exist in the dominant language.

### 1.4 Theoretical Framework: Universal Grammar

Chomsky’s Universal Grammar (UG) aims to explain how language works and why humans are the only ones that have this complex faculty of language as their means of communication. According to Chomsky we have a ‘computational system’ that bridges the gap between the sounds that we produce and their meaning in the real world.

\textsuperscript{1} Spanish is a Romance language and Polish is a (West) Slavic language.
Although it is evident that communication takes place between animals of the same species, such as bees, birds, and chimpanzees, their communication differs qualitatively from human language in that the human system contains the capacity of recursion, allowing for a limitless and infinite amount of options to the sentences produced and comprehended (Hauser, Chomsky & Fitch, 2002).

Generative linguists believe that the human brain is separated into different modules that are responsible for a different aspect of mental life; the faculty of language is one of these modules, just as there are those responsible for logic, vision, mathematics, and so forth. Since every human is born with a brain that has these modules, every human is born with the capacity of learning a language. Cook and Newson (2007) explain that, “ultimately the linguist is not interested in a knowledge of French or Arabic or English but in the language faculty of the human species” (p. 47). As previously mentioned, it is the human species that has the language faculty and crucially it is not available to any other animal species.

With this in mind, UG is a template that is present within the faculty of language that sets predetermined principles for all possible languages. The initial state is the faculty of language before any exposure to language. As the brain (or newborn child) is exposed to language through both direct and indirect interactions, UG allows for grammar to develop, for the setting of parameters to take place and for the lexicon to grow. “The initial state changes under the triggering and shaping effect of experience, and internally determined processes of maturation, yielding later states that seem to stabilize at several stages, finally at about puberty” (Chomsky, 2002, p. 85).
Through Chomsky’s (1981) Principles and Parameters Theory, we see that languages are not composed of rules but rather they are composed of principles from which individual rules are derived. Cook and Newson (2007) clarify that “the information stated in rules has to be reinterpreted as general principles that affect all rules rather than as a property of individual rules” (p. 9). Seeing that principles are innate to all languages, are part of UG, and are what makes all languages the same, parameters are what make languages different; they are what determine language variation and solely rely on input in order to set the parametric setting within the grammar of the speaker.

This study follows a generative perspective in the analysis of heritage languages. It is understood here that input is crucial for the development of a first language. Lack of input will affect how a language develops and will cause some divergence from the baseline (monolingual variety) language. Based on what we know about first language acquisition, it is important to study heritage languages to be able to put our already established theories to the test. One such theory is the Critical Period.

1.5 Critical Period

Critical Period work has focused on looking at child first language acquisition and what or how much is acquired before the “critical period” or what can also be a language acquisition plateau. The Critical Period Hypothesis (CPH) in regards to human language and its development, was first introduced by Lenneberg (1967). He proposed that language must fully develop between age two and the onset of puberty, which was estimated to be around age 12, and this was referred to as the critical period. This work
has been backed up by other studies that looked at biological development in animals. Blakemore and Cooper (1970) found that kittens with a visual environment that is only composed of horizontal lines become blind to vertical lines. The opposite is also found to be true (vertical vs. horizontal lines). Support for the critical period hypothesis in first language acquisition can be found in studies that have looked at people who are born deaf and who receive American Sign Language (ASL) input at various ages. Singleton and Newport (1994) were interested in this population and their study looked at exposure to ASL during three different stages: Exposure from birth, exposure between ages 4 to 6, and exposure after 12 years of age. They were interested in examining the production and comprehension of ASL verb morphology and their results showed that performance weakened after first exposure: Each group performed worse than the previous (birth > 4 to 6 > after 12). Other evidence that is available comes from extreme situations where the child was isolated from all language input until after puberty. Unfortunate examples come from the well-documented case of Genie (Curtiss, 1977), who was abused and kept isolated from her family members with no exposure to language until she was 13. Curtiss reported that Genie continued to have persistent problems with syntax even after many years of linguistic rehabilitation, which may support the CPH. However, it has been argued that this case cannot be used as proof of the existence of a critical period in first language acquisition because medical examinations showed that Genie may have been mentally disabled, which could have hindered her language acquisition process.

The CPH is important for both types of sequential learners (early and late) and in the simultaneous acquisition context, where the child receives less input in both languages compared to a monolingual child receiving all of his input from one language
(Montrul, 2008). When looking at child first generation immigrants as well as second
generation heritage speakers who are exposed to two languages simultaneously, the
amount of input received in each language will vary depending on the context and
prestige of the language. Since the amount of exposure and input available in the
heritage language diminishes significantly once the speaker starts to attend school,
development of the heritage language becomes interrupted by that of the new community
language, which impedes in any further growth of the heritage language. The CPH is
valid in this context because according to this hypothesis, a child has a very short window
to receive an adequate amount of input in order to acquire the basic structure of its
language. If contact with the heritage language becomes disrupted very early on then
according to the CPH the language will not develop to its full capacity. According to
Benmamoun, Montrul, and Polinsky (2010), “early language experience is a necessary
but not a sufficient condition for complete language acquisition in heritage speakers.
Amount and quality of exposure during the critical period matter as well” (p. 24).

Further investigation has found that the critical period occurs much earlier than
puberty (age 12 as proposed by Lenneberg) and that “the offset must begin after age five,
the moment at which [typically developing] children exposed to language have most of
the basic grammar of their language in place” (Herschensohn 2007, p. 213). For example,
according to Paradis (2009), when acquiring a first language in childhood procedural
memory is used. Around age 5 procedural memory begins to decline and declarative
memory is relied on. Nevertheless, there is no agreement on the age. While some say
that early second language acquisition starts at 5 years old, that by 5 a child’s first
grammar is fully developed the introduction of a new one is early SLA; others dispute or
argue that at 5 it is still considered early bilingualism. According to Meisel (2011) several studies have shown that age 7 can be used as a critical period cut-off point, while he believes that parts of language slow down in their development around age 3 or 4. Krashen (1973) has shown that important changes in language development occur at around 5 years of age. Additionally, Johnson and Newport (1989) investigated the acquisition of English as a second language and found that children perform like native speakers in morphology and syntax if they acquire the language before 7 years of age. This would indicate that complete acquisition of morphology and syntax does not occur until age 7. Nevertheless, the debate still continues as to when all aspects of language are fully acquired.

Montrul and Potowski (2007, p. 302), explain that in the study of bilingual acquisition, a clear distinction has been made "between children who acquire their languages in early versus later childhood". Simultaneous bilinguals acquire both languages from birth, or "shortly after birth", while sequential bilinguals begin acquiring their second language between ages 4-7, once the foundations of their first language are in place. (Genesee, Paradis, & Crago, 2004; Hulk & Cornips, 2006; Meisel, 2001).

Even though all the basic components of a first language are complete by 3 to 4 years of age, bilingual children who start attending pre-school in the dominant language experience a significant language shift in their use of the heritage language (Montrul & Potowski, 2007). This shift in language use may occur much sooner within the family home, with parents feeling the need to use of the dominant language within the home, and older siblings using the community language predominantly to communicate with the family. It has been proposed that the younger the child is when it is exposed to the
majority language and when access to the minority language becomes restricted, there is a greater chance of the child acquiring the heritage language incompletely or partially (Montrul, 2008). For this reason, it is important to have background information for all speakers in order to be able to ascertain the reason(s) for the results that come out of this study. The amount of input the Spanish and Polish heritage speakers in this study received before the critical period should influence their linguistic abilities in their family language.

1.6 Grammatical Characteristics of Heritage Speakers

In this section I will briefly describe some of the common characteristics found in heritage speakers. Beginning with native-like accents, it has been found that not all heritage speakers sound like native speakers of their heritage language after a prolonged period of time in a new linguistic environment (country of the L2) with a significantly reduced input and output of the L1 (Au et al., 2002; Oh et al., 2003; Knightly et al., 2003). In a study done by Au, Knightly, Jun, and Oh (2002), they compared heritage language “overhearers” to late L2 learners of Spanish. The overhearers grew up hearing Spanish in the home. They were very seldom spoken to in Spanish, and when this happened it was in the form of one word or short sentences that were embedded into English phrases. The late learners started to learn Spanish after age 14 in the classroom and they also had minimal contact with Spanish. This study reports that heritage speakers, who had a very low proficiency level in Spanish because they simply grew up overhearing the heritage language, had distinct non-native accents in general. Even
though this group of participants had an advantage in pronunciation in comparison to late L2 learners of Spanish, they did not find any advantage in morphology.

When looking at lexical categories in heritage speakers, frequency and exposure appear to affect vocabulary knowledge (Benmamoun et al., 2010). Some studies have looked at the verb-noun distinction. Polinsky (2005) has shown that Russian heritage speakers are more accurate with verbs than with nouns, while Montrul (2009) found the opposite to be true for Spanish heritage speakers. In her study Montrul found that Spanish heritage speakers had a faster response time with nouns and they were slower and less accurate with verbs. Benmamoun et al. (2010) mention that this discrepancy between the two studies may have to do with a difference in heritage languages. The authors further note that it may also be due to the fact that Montrul’s participants had a higher proficiency level in their heritage language when compared to Polinsky’s heritage Russian speakers.

Benmamoun et al. (2010) explain that “[t]he sub-module of language that is generally most affected in heritage speakers is inflectional morphology in languages that exhibit rich morphological systems and regular and irregular paradigms” (p. 30). There has been a large number of studies done that have shown the fragility of nominal and verbal inflectional morphology. Starting with the nominal domain, work done on Spanish, Russian, and Swedish heritage speakers shows that this group of speakers commits errors with gender agreement (Håkansson 1995, Montrul, Foote & Perpiñán 2008a, Polinsky 2008). Similar results were found with definiteness agreement in Swedish and Hungarian (Håkansson 1995, Bolonyai 2007), case marking in Russian and Korean (Polinsky 1997, 2006, Song et al. 1997), and inflected infinitives in Brazilian
Portuguese (Rothman 2007). According to Benmamoun et al. (2010) when compared to verbal morphology, problems in the morphological domain have been shown to be more persistent and evident in nominal morphology. When looking at verbal morphology, problems are found in a specific subset of categories.

Work done on Hindi heritage speakers is an example of this asymmetry. Montrul et al. (2010) report case-marking errors in the range of 23-27% and verbal morphology errors under 7%. Bolonyai (2007) looked at the Hungarian of English-dominant bilingual children and found that her participants’ nominal morphology was attrited and the verbal morphology was intact. When observing verbal agreement Bolonyai reports that the object agreement forms are slightly affected but what causes problems is aspectual and preverbal marking. This leads Benmamoun et al. (2010) to conclude that verbal morphology (marking tense) does not cause problems in heritage language, but what does cause problems is aspectual morphology for mood, polarity, and even negation. The authors add that this asymmetry may be due to how the two types of morphologies differ, in that “nominal morphology is post- or extra-syntactic, whereas verbal morphology is directly reflexive of syntactic structure (cf. Bobaljik & Branigan 2006, Bobaljik 2008). If so, it is possible that heritage speakers retain the syntactic ability to form predication relations and recursive structures…but have a reduced capacity for post-syntactic operations” (p. 33). Furthermore, a full system re-analysis can be seen in the work done by Polinsky (2006) where she discusses the Russian nominal case system in the US. In her work she found that while homeland Russian has six cases (nominative, accusative, genitive, dative, instrumental, prepositional), American Russian has simplified its case system almost completely by using only two cases: Nominative and accusative.
That being said, the work done by Silva-Corvalán (1991, 1996) has shown that these types of changes do not occur rapidly over night. Language dominance and preference will change from one generation to the next. In this study, following Silva-Corvalán (1991, 1996), the first generation is characterized as the one who emigrated with their L1 fully developed and stabilized, learning the L2 as adults. In this case, Spanish remains the dominant language and English proficiency may vary from minimal to excellent. The second generation speakers are the children of the first generation who are either born in the L2 environment or emigrated with their parents as young children. The second generation is exposed to the heritage language (L1) within the home and learns the L2 (community language) in school. Because all schooling is done in the community language, development of the heritage language does not progress and may even regress. The dominant language of this group of speakers is English and their competence in Spanish varies from weak to excellent but normally they are at the intermediate level and they produce many grammatical errors. They use both languages daily but in different contexts. Finally, the third generation is composed of the children of the second generation. They are completely assimilated to the North American culture and they are definitely native speakers of English. Some do not speak any Spanish at all, and others have very limited vocabulary. From generation to generation there is an observed loss of verbal contrasts in Spanish (Silva-Corvalán 1991, 1996).

Table 2. Verbal systems in Spanish (from Silva-Corvalán, 1991, p. 333)

<table>
<thead>
<tr>
<th>Born in the United States</th>
</tr>
</thead>
</table>
Table 2 above shows the different verbal systems (I-V) that are present in Spanish heritage speakers. Silva-Corvalán (2003) explains that the “five different
systems...represent at the community level a steady progression toward a less grammaticalized system” (p. 393). According to the author, systems I and II are present in speakers who immigrated to the US (in the case of her study), while systems III through V are present in those who were born in the US. Silva- Corvalán (1991) explains that the first two systems (I and II) are the most complete and they typically have seven contrasting items in the past and only one in the future. She cites Comrie (1985) in stating that it is typically found that languages have better developed past systems than future systems. The most developed system among the three groups born in the US (system III) “lost two of the past forms, pluperfect indicative and conditional perfect, and retains four absolute-relative forms, two for future in the past (periphrastic conditional and imperfect subjunctive); one for future in the past or present (present subjunctive), and one for future perfect in the past (pluperfect subjunctive)” (Silva- Corvalán 1991, p. 333). System IV has only maintained two of the six absolute-relative tenses (periphrastic conditional and present subjunctive), while system V demonstrates that the last items to disappear are the past participle in the relative tenses, the present perfect in the absolute tenses, and maintains only one absolute-relative tense, the periphrastic conditional. The author does not explain why systems I and II do not have the future perfect but does state that the participants in the study never use the following three tenses: The Present Perfect Participle, the Past Perfect and the Future Perfect. It is then clarified in an endnote that these forms are not found frequently in spoken language. Table 2 clearly supports the conclusion made by Benmamoun et al (2010) that was mentioned above. They concluded that the aspectual morphology which includes mood, polarity, and negation, are what cause problems with heritage speakers. It can be seen in Table 2 that the verbal tenses lost are the absolute-relative tenses.
While Silva-Corvalán (1991, 1996, 2003) found instability in the tense-mood-aspect morphemes in child and adult bilinguals, Montrul (2004) aimed to look at the stability of subject and object expression in Hispanic heritage speakers in the United States, by investigating the Interface Hypothesis. She hypothesized that if interface areas are more affected by language loss than the purely syntactic domains, then her participants should demonstrate strong knowledge of null subjects and object clitics (pure syntax) but problems with the pragmatic distribution of null and overt subjects, the *a* preposition with animate direct objects, and semantically based clitic doubling. In order to test her hypothesis 24 Spanish heritage speakers completed an oral production task, which consisted of looking at pictures of the story *Little Red Riding Hood* and telling the story.

The heritage speakers were all bilingually raised adults of Mexican-American background. They were all enrolled in various Spanish language or literature courses at the university at the time of testing. Montrul divided this group into 10 intermediate heritage speakers and 14 advanced heritage speakers. In addition to her heritage speakers, there was also a group of 20 Spanish monolinguals that were tested as the control group.

When looking at the length of each narrative, her results show that there was no significant difference between the three speaker groups. The production of overt and null subjects was also analyzed. Whether or not they were illicit (null subjects) or redundant (overt subjects) was also taken into account. Montrul explains that an overt subject would be considered redundant if it “referred to the same referent mentioned in the previous sentence (a context where a null pronoun would be felicitous)” (p. 132). On the other hand, a null subject would be considered illicit if it were used in the introduction of
a new referent, which would cause the sentence to be unclear and ambiguous. Results show that there was no difference between the monolinguals and the advanced heritage speakers in the production of overt and null subjects. However, both of these groups were statistically different from the intermediate heritage speakers. It is reported that the monolingual and advanced groups produced more null subjects than overt subjects, but the intermediate group produced more overt subjects than null subjects. When looking at accuracy, the intermediate heritage speakers were the least accurate. They “produced 4.7% of redundant overt subjects when there was no change in referent and 15.5% illicit null subjects when there was a change of referent” (p. 133). The advanced heritage speakers also produced illicit null subjects 8% of the time, and only 0.7% redundant overt subjects.

As previously mentioned, Montrul (2004) looked at various aspects of a heritage grammar and she explains that it is very possible that her intermediate heritage speakers are displaying signs of incomplete acquisition. She bases this analysis on a study done by Paradis and Navarro (2003) who explain that children have a general tendency to over-produce overt subject pronouns in Spanish until they figure out the discourse pragmatic distribution. They argue that the extreme reduction of input in Spanish coupled with an influx of English input caused the children to incompletely acquire the pragmatic distribution of overt subjects in Spanish. The results of this study may support incomplete acquisition for Montrul (2004) by indicating that the intermediate speaker group did not receive enough input in order to fully acquire the referential rules of overt subject expression.

This study is relevant for this dissertation in that it demonstrates that while advanced heritage speakers do not display problems with correct (overt and null) subject
expression, divergence is more noticeable when the proficiency of the speaker is weaker. Both types of heritage speakers (intermediate and advanced) still maintain the Null Subject Parameter, but a considerable difference in production is found in those who have lesser abilities in their heritage language.

Furthermore, when it comes to heritage speakers’ knowledge of syntax, it appears that the Null Subject Parameter remains intact even under reduced input conditions. Håkansson (1995) looked at word order in Swedish heritage speakers and found that they produced the V2 phenomenon with native-level proficiency and they maintained native competence in verb placement when dealing with structural variability. When studying low proficiency Spanish heritage speakers, Montrul (2005) found that they knew the syntactic constraints on unaccusativity.

Moreover null pronominals are found to be less robust. Benmamoun et al., (2010) inform that “heritage languages whose baseline is pro-drop are reported to lose the pro-drop feature or to use it in a more limited manner” (p. 34). Sorace explains that this type of attrition is due to the syntax-discourse interface (Sorace, 2004; Sorace & Serratrice, 2009). The explanation provided by Benmamoun et al., (2010) is that heritage speakers demonstrate problems with making syntactic dependencies and even more so when the dependency is at a distance, like the licensing of a null pronominal and co-indexing with a determiner phrase (DP). Heritage speakers have difficulties in interpreting anaphors due to complexities that arise in creating and maintaining a dependency (i.e. binding). The authors add that this may vary across heritage languages, proficiency levels, or both. Thus far, not enough work has been done to solidify either argument. This dissertation attempts to fill this gap by looking at one syntactic component (the Overt Pronoun
Constraint) across two very distinct heritage languages, Spanish and Polish, to see how this grammatical aspect is developed by both groups of heritage speakers.

Finally, in the field of semantics work has been done on semantically-based or inherent case. Studies done by Montrul (2004) and Montrul & Bowles (2009, 2010) focusing on Spanish heritage speakers found that this group of speakers tends to have problems with the differential object marking (DOM), specifically with animate specific direct objects and dative subjects with psychological verbs (Benmamoun et al., 2010). This speaker group has a tendency to omit the preposition a, which is a case marker of inherent case. In addition, the same preposition a is a case marker for prototypical dative constructions but it is not omitted with indirect objects, which may indicate that “inherent case marking may be more affected than structural case marking” (Benmamoun et al., 2010, p. 40).

Another area that has been shown to be problematic in heritage speakers is the use of articles. Montrul & Ionin (2010) looked at Spanish heritage speakers and transfer effects from their dominant language (English) in the production of articles. An indication that transfer was present was the “use of bare nouns with generic reference in subject position (which are ungrammatical in Spanish but grammatical in English), and…[the interpretation of] definite articles in Spanish as specific in generic contexts” (Benmamoun et al. 2010, p. 40). The authors add that it is known that definiteness causes problems with first language learners and for this reason it should not be surprising that heritage speakers also show difficulties.

As can be seen numerous studies have shown that the language of heritage speakers has specific characteristics, some of which appear to be common across
languages (non-native like accent, nominal and verbal inflectional morphology, subject and object expression, semantically-based case marking). Although these changes have been reported, this is yet another group of speakers that produces a language that is governed by specific rules, which are not always akin to the first or second language.

1.7 Heritage Languages in Canada

The aim of this section is to report on the linguistic situation in Canada in terms of the maintenance of all heritage languages and relating to both Spanish and Polish whenever possible. At times contrasts will be made with the language situation in the United States, however it is not the intention to give a thorough comparison of the two sides.

Canada is a bilingual country where English and French are the two official languages. Nevertheless, not everyone is bilingual. Out of 10 provinces and 3 territories, Quebec is the only francophone province, New Brunswick is the only province that is officially bilingual, while the rest of the eight provinces are mainly English speaking (Carlino, 2008). “English remains the majority language of the Canadian population (59.1%). Francophones (…) account for 22.9% of the population. According to the 2001 Census, only 17.7% of the population use both official languages on a regular basis” (Carlino, 2008, p.266).

In Canada the term heritage language refers to all of the languages spoken other than the two official languages, English and French, and the aboriginal languages (Duff & Li 2009). In fact, the term heritage language education appears to have originated with Canadian programs. Even though there were other similar programs in place in
Australia, the United Kingdom, and the United States, they were using other terminology such as *community*, *complementary*, *ancestral*, *ethnic*, *immigrant*, *minority*, *original*, *non-official*, or *second/third* language programs (Duff & Li, 2009). Since the 1970’s specialists have agreed on the importance of studying languages other than the two official ones, and they have understood how important cultural and ethnic identity is to Canadians. Jedwab (2000) explains that “three out of ten Canadians are of neither British nor French ancestry, some one out of six Canadians first learned a language other than the two official languages and nearly one-tenth of the population speak a heritage language in their home” and that language is not either English or French (p.9).

Since 1971 Canada has had a policy of official multiculturalism in order to “highlight Canada’s aspirations of ethnic inclusiveness and of becoming a truly multicultural, pluralistic ‘mosaic’” (Duff, 2009, p. 72). There is an official branch of the federal government called *Canadian Heritage* and it develops and advocates for official language, heritage language, and multicultural programs by promoting mutual understanding across diverse communities and the participation in fine arts and cultures. Duff continues to explain that many provinces have provided opportunities for people to learn heritage languages either as part of the curriculum or as an after-school program in the evening or during the weekend. The after-school program consists of 2.5 hours a week of instruction taught by a volunteer. The bilingual-heritage program is what is found within the curriculum program and students receive 50% of their instruction in the heritage language from qualified teachers.

Table 3 below provides Canada’s total population for the 2011 Census, which is located at the top of the table. Based on this overall total, the population of Spanish and
Polish heritage speakers is provided for each province or region. The percentage shown is in comparison with Canada’s total population. Ontario results are provided in italics because all data were collected in that province.

Table 3. Total population of Spanish and Polish heritage speakers in Canada in comparison to Canada's population. (Information gathered from Statistics Canada, 2011)

<table>
<thead>
<tr>
<th>Region / Province</th>
<th>Spanish Heritage Speakers</th>
<th>Polish Heritage Speakers</th>
</tr>
</thead>
<tbody>
<tr>
<td>CANADA</td>
<td>31,241,030</td>
<td></td>
</tr>
<tr>
<td>Newfoundland</td>
<td>425</td>
<td>100</td>
</tr>
<tr>
<td>Prince Edward Island</td>
<td>230</td>
<td>60</td>
</tr>
<tr>
<td>Nova Scotia</td>
<td>1,550</td>
<td>820</td>
</tr>
<tr>
<td>New Brunswick</td>
<td>1,135</td>
<td>225</td>
</tr>
<tr>
<td>Quebec</td>
<td>131,850</td>
<td>15,250</td>
</tr>
<tr>
<td>Ontario</td>
<td>178,330</td>
<td>128,440</td>
</tr>
<tr>
<td>Manitoba</td>
<td>8,830</td>
<td>7,365</td>
</tr>
<tr>
<td>Saskatchewan</td>
<td>3,235</td>
<td>1,905</td>
</tr>
<tr>
<td>Alberta</td>
<td>44,020</td>
<td>19,890</td>
</tr>
<tr>
<td>British Columbia</td>
<td>40,795</td>
<td>17,460</td>
</tr>
<tr>
<td>Yukon</td>
<td>170</td>
<td>45</td>
</tr>
</tbody>
</table>
Below, Table 4 provides the populations of Spanish and Polish speaking people in each province and territory in Canada, as provided by Statistics Canada for 2011. As it can be seen, Ontario, Quebec, British Columbia, and Alberta are the provinces with the highest number of both Spanish and Polish speakers. The results for Ontario are in italics because all of the participants in this study came from Ontario.

**Table 4. Canadian population declaring Spanish or Polish as a mother tongue by Province and Territory. (Information gathered from Statistics Canada, 2011)**

<table>
<thead>
<tr>
<th>Region / Province</th>
<th>Population</th>
<th>%</th>
<th>Region / Province</th>
<th>Population</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>SPANISH AS A MOTHER TONGUE</strong></td>
<td></td>
<td></td>
<td><strong>POLISH AS A MOTHER TONGUE</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CANADA</td>
<td>410,690</td>
<td></td>
<td>CANADA</td>
<td>191,610</td>
<td></td>
</tr>
<tr>
<td>Newfoundland</td>
<td>425</td>
<td>0.10348438</td>
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<td>100</td>
<td>0.052189343</td>
</tr>
<tr>
<td>Prince Edward Island</td>
<td>230</td>
<td>0.056003312</td>
<td>Prince Edward Island</td>
<td>60</td>
<td>0.031313606</td>
</tr>
<tr>
<td>Nova Scotia</td>
<td>1,550</td>
<td>0.377413621</td>
<td>Nova Scotia</td>
<td>820</td>
<td>0.427952612</td>
</tr>
<tr>
<td>New</td>
<td>1,135</td>
<td>0.276364168</td>
<td>New</td>
<td>225</td>
<td>0.117426022</td>
</tr>
<tr>
<td>Brunswick</td>
<td>Quebec</td>
<td>131,850</td>
<td>11616.74009</td>
<td>Brunswick</td>
<td>Quebec</td>
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<td>-----------</td>
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<td>-----------</td>
<td>--------</td>
</tr>
<tr>
<td>Ontario</td>
<td>178,330</td>
<td>43.42204583</td>
<td>Ontario</td>
<td>128,440</td>
<td>67.03199207</td>
</tr>
<tr>
<td>Manitoba</td>
<td>8,830</td>
<td>2.150040176</td>
<td>Manitoba</td>
<td>7,365</td>
<td>3.843745107</td>
</tr>
<tr>
<td>Saskatchewan</td>
<td>3,235</td>
<td>0.787698751</td>
<td>Saskatchewan</td>
<td>1,905</td>
<td>0.994206983</td>
</tr>
<tr>
<td>Alberta</td>
<td>44,020</td>
<td>10.71854684</td>
<td>Alberta</td>
<td>19,890</td>
<td>10.38046031</td>
</tr>
<tr>
<td>British Columbia</td>
<td>40,795</td>
<td>9.933283012</td>
<td>British Columbia</td>
<td>17,460</td>
<td>9.112259277</td>
</tr>
<tr>
<td>Yukon</td>
<td>170</td>
<td>0.041393752</td>
<td>Yukon</td>
<td>45</td>
<td>0.023485204</td>
</tr>
<tr>
<td>North West Territories</td>
<td>95</td>
<td>0.023131803</td>
<td>North West Territories</td>
<td>35</td>
<td>0.01826627</td>
</tr>
<tr>
<td>Nunavut</td>
<td>25</td>
<td>0.006087316</td>
<td>Nunavut</td>
<td>15</td>
<td>0.007828401</td>
</tr>
</tbody>
</table>

In addition to Tables 3 and 4 above, Census data for year 2011 adds that the total population in Canada was 31,241,030, while 20,584,770 (66%) of those people stated that they speak English at home, and 6,608,125 (21%) people stated that they speak French at home. 11% of the population (3,472,130) stated that they speak a non-official language at home (not English or French). A total of 1.314% (410,690) reported that they speak Spanish at home and 0.613% (191,610) reported that they speak Polish at home.

2 The rest of the population answered that they spoke, official languages (English and French 94,055), English and a non-official language (406,455), French and a non-official language (58,885), or English, French, and a non-official language (16,600).
With these large numbers of non-official language speakers, Carlino explains that in the last 35 years there have been several publicly funded multilingual programs developed at the province level that have sought to provide minority language instruction. The main goal of these programs is to promote growth in various cultural communities while at the same time provide children with valid academic experience that is centred around their heritage. Two main initiatives were put in place in the 1980’s in order to respond to the large number of immigrants to Canada. One was the Heritage Language Program (HLP) in Ontario and other was Quebec’s *Programme d’Enseignement de Langues d’Origines* (PELO). Similarly to what was mentioned above with regards to after-school language programs, the aim of the HLP in Ontario was to provide the education of community languages either outside of regular school hours, or incorporated into an extended school day adding an extra 2.5 hours a week for language instruction. Cummins (1984, p. 74) reports that there were over 85,000 children who participated in this program between 1982 and 1983, while Quebec’s PELO program involved teaching Italian, Portuguese, Spanish, and Greek to children for half an hour a day which was part of the curriculum but was much smaller in scale and included about 1,600 children between 1983 and 1984.

Both the HLP and PELO programs consisted of instruction at the elementary level and had both linguistic and cultural goals. Culturally, the goal was to inform the children about the validity of their minority language and heritage so that they would be less intent on discarding their heritage for the more dominant English and French languages and Canadian culture. On a similar note, it was expected that by attending these programs, linguistically the children would maintain their skills in their heritage language and
become literate.

More recent work done by Feuerverger (1997) on heritage language teachers in Toronto has shown that although there is great need for continuing support of the HLP in Ontario there are people who believe that ethnic communities should be in charge of supporting their own heritage programs and that the government should not be compensating for afterschool programs that are not part of the regular curriculum. At the same time there are those who see the HLP positively as a program that makes multiculturalism more current by teaching immigrant children to feel proud of their heritage, and building confidence while using their first and second languages. The author explains that the heritage language programs along with the heritage language teachers are marginalized because the teachers’ status is questioned specifically because heritage language teachers are not accredited teachers in their province. This lack of formal recognition prevents heritage language teaching from being improved and the teachers from receiving professional guidance in regulating and improving the curriculum. These HL teachers tend to be first or second generation immigrants and they work in a “non-mainstream, border educational program” where they are rarely appreciated and treated as regular teaching staff.

In Canada, no region is the same with regards to its support for heritage language education, but they do all maintain the underlying belief that learning the minority language is not only a way of transitioning students into monolingual programs but “an important form of educational and community enrichment” (Duff 2009, 73). According to Duff (2009), there are several reasons for emphasizing the value of maintaining a heritage language on a political, social, and educational scale. These include the
validation of multiculturalism in Canada and the recognition of people’s multiple cultural and linguistic identities, the aid in retaining children’s literacy skills in their L1 (heritage language), which in turn will help them build their literacy skills in their L2 (the majority language of the community) once enrolled in school, and finally the availability of public relations and policies in order to help encourage immigrants to settle down in Canada while showing them that their language and culture are valued.

Cummins and Danesi (1990) explain that multiculturalism in Canada was introduced after the end of World War II, when ties with Britain were gradually weakening. According to them, the idea of multiculturalism was brought in to fill the identity vacuum that was left over after the war and in this process it falsified the reality of how Canadians treated immigrants. This covered-up reality of racism did not become clear until 1989 when Gerry Weiner, the Minister of State for Multiculturalism and Citizenship, outright stated that the government and Canadians cannot keep ignoring the researchers and the evidence which shows that one third of the Canadian population believes in racial superiority, while 15% openly discriminates against racial minorities. The Minister continued to name several myths that exist in Canada about different minority groups, specifically addressing the believed to be common issue that racism is caused by immigrants who take good jobs away from Canadians or by those who live off government assistance which “hard-working” Canadians pay for (p. 14). Cummins and Danesi (1990) explain that the greatest myth that Canadians themselves have internalized as a reality is that Canada, unlike the United States, has always been an open country that welcomes all types of immigrants. The authors clarify that by superficially celebrating (multi-) cultural festivals in schools and municipalities, the government masks the main
Table 5. Heritage language programs in Canada. (Adapted from Carlino, 2008)

<table>
<thead>
<tr>
<th>REGION/ PROVINCE</th>
<th>PUBLIC/ NON PUBLIC</th>
<th>FUNDED BY</th>
<th>LANGUAGES TAUGHT</th>
<th>OTHER FEATURES</th>
<th>COMMENTS</th>
</tr>
</thead>
<tbody>
<tr>
<td>The Prairies region (Alberta, Manitoba, Saskatchewan)</td>
<td>Public</td>
<td>Provincial government</td>
<td>Other bilingual programs: English and Hebrew/ Yiddish/ Arabic/ Mandarin/ Polish/ Spanish</td>
<td></td>
<td>These 3 provinces have very active HL associations which train teachers and are in close contact with the provincial educational authorities</td>
</tr>
<tr>
<td>Ontario</td>
<td>Public</td>
<td>Provincial government</td>
<td>Several languages included: Spanish, Polish, and others</td>
<td>After-school programs. Meet up to 5hrs a week. HL instruction is not allowed as part of regular curriculum.</td>
<td>Creation of these programs in 1977 was a response to growing immigration, especially in Toronto. At that time 50% of the students in the Toronto School Board were from non-English-speaking homes.</td>
</tr>
<tr>
<td>Quebec</td>
<td>Public bilingual program</td>
<td>Quebec Ministry of Education</td>
<td>11 languages offered including Spanish, English, and Polish</td>
<td>HLs are taught at elementary level for 30min. a day. Teachers are not specially trained to</td>
<td>Program is known as PELO (Programme d’enseignement des langues d’origine). Created in</td>
</tr>
</tbody>
</table>
Table 5 above shows whether the heritage language programs in place are public or private, the amount of support that each province or region receives at the federal and provincial levels, other features that are part of their programs like whether the heritage languages are offered as part of the regular curriculum or in after-school programs, and finally there is a section for comments that provides any further information on the status of these programs.

Starting with the Prairies, which includes the provinces Alberta, Manitoba, and Saskatchewan, Table 5 shows that the heritage language program offered is public (as opposed to being private) and it is funded by the provincial government. Language programs include two-way English-Ukrainian classes, as well as those that strictly teach HL.

| Province/
<table>
<thead>
<tr>
<th>region</th>
<th>Program funding</th>
<th>Curriculum offered</th>
<th>Support sources</th>
<th>Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>British Columbia</td>
<td>Private programs outside school hours</td>
<td>Different sources of funding including the federal government</td>
<td>26 HL are taught including Spanish, and Polish</td>
<td>Provincial government allows school boards to offer HL instruction.</td>
</tr>
<tr>
<td>The Atlantic provinces (Nova Scotia, New Brunswick, Newfoundland, Prince Edward Island)</td>
<td>Non-public programs offered through complimentary schools</td>
<td>Self-supported</td>
<td>Spanish and Polish offered through small cultural organizations.</td>
<td>Language classes are offered outside of school hours.</td>
</tr>
</tbody>
</table>
Ukrainian and German. Other bilingual programs are focused on combining English with Hebrew, Yiddish, Arabic, Mandarin, Spanish and Polish. The school boards in Edmonton, Alberta were the first to offer heritage language education back in 1971, and to this day all three provinces are actively involved in maintaining heritage languages within the system, training their teachers, and are in close contact with the provincial educational authorities.

In Ontario, the program is also public and is provincially funded. Several different heritage languages are taught but the only language explicitly mentioned in Table 5 is Spanish. There, heritage languages are solely offered in after-school programs with a maximum instruction time of 5 hours a week. The program was created in 1977 due to the growing amount of immigrants at the time.

The Canadian Education Association (CEA) sent out heritage language questionnaires to 28 different school boards in Ontario and 23 replied. Out of those that did reply, 19 offered heritage language programs and four did not (CEA 1991). The CEA explains that “of the boards in Ontario offering programs, nine run classes from junior kindergarten through to grade 8; four run classes from kindergarten to grade 8…four boards indicate that they offer heritage languages through the Senior Division as well” (p. 26). Only one school board out of 19 stated that their teachers come from regular teaching staff. The rest stated that they hire staff with no teaching certification but many are certified in their country of origin or they have the “academic/linguistic abilities to satisfy (their) teaching requirements” (p. 28).

The CEA questionnaire also asked about possible training for heritage language
teachers. Six school boards answered that there was none available, while the rest stated that their instructors were free to take part in “professional development activities offered by the board” (p. 28), which are offered two to three times a year. Specifically in North York the heritage language teachers are expected to participate in four activities a year, and Toronto’s Metropolitan Separate School Board and the Scarborough Board of Education provide an obligatory 90 hour certificate program.

Quebec’s public bilingual programs is funded by the Quebec Ministry of Education, which is called PELO (Programme d’Enseignement de Langues d’Origines) and it offers eleven different language programs such as Greek, Portuguese, Spanish, Italian, Arabic, Laotian, Vietnamese, Polish among others. These languages are offered at the elementary level for an extra 30 minutes a day by non-certified teachers who tend to be native speakers of the heritage language being taught.

Between 1986 and 1987 the province of British Columbia offered private programs outside of school hours and they received funding from various sources including the federal government. The provincial government did not have a major investment in heritage language education but allowed the school boards to offer heritage languages. There were a total of 26 different heritage languages that were taught in British Columbia, which included Spanish, Polish and several different Asian languages. There were also bilingual programs offered such as Russian-English and Hebrew-English. After signing the Multiculturalism Act in 1996, heritage language education became part of British Columbia’s provincial legislation (Tavares 2000). Currently, heritage language classes are offered in Burnaby and Vancouver (“British Columbia Heritage Language Association,” 2012). The Vancouver School Board (2010) maintains
strict guidelines for new heritage language school proposals. They do state clearly that it must be non-profit and the school may collect tuition fees only to pay for teachers’ salaries and textbooks. Spanish and Polish are still taught as heritage languages.

Finally, the Atlantic Provinces, which include Nova Scotia, New Brunswick, Newfoundland, and Prince Edward Island, provide non-public programs offered through complimentary schools and do not receive funding from provincial governments. Three different programs are in existence. The first operated between 1986 and 1987, it received different sources of funding that including the federal government and the most popular language offered was Arabic. The other two programs were self-supported: one was in Cape Breton, Nova Scotia and they ran a Gaelic playgroup. The other program was in Halifax, Nova Scotia, ran from 2003 to 2005 and they provided free Spanish lessons to children between the ages of 4 and 6, which were given by a Spanish faculty at a local university. Currently there are Spanish and Polish heritage language classes which are provided by local churches and community groups.

There are many different heritage languages that are supported throughout the entire country and in many cases these communities receive some type of financial support from either the provincial or federal governments. Where the communities are significantly smaller such as the Atlantic provinces, support for heritage language classes must be provided by the community itself.

Carlino clarifies that the information presented in Table 5 above is by no means exhaustive, however it does show how complex the system is in Canada and how the multicultural programs are supported in different provinces and regions. It is important
to note here that the support of these types of programs is by no means political in nature. For example, in the Prairies the programs are actively supported by both the Conservatives and the New Democratic Party, while in Toronto both the Liberals and the Conservatives have denied funding for such programs (p. 270).

According to Carlino, Spanish is a growing language in Canada and there are several factors that contribute to that growth.

These include, 1) the increasing immigration from Hispanic countries, 2) the existence of a legal framework (NAFTA) designed to promote economic, commercial, and educational relations between Canada and Mexico, 3) the already discussed multicultural character of Canadian society, 4) Canadians’ awareness of Hispanic culture gained through inexpensive tourist packages to the Caribbean and other parts of the Hispanic world, and 5) the visibility of the Spanish language in the media and particularly through the internet (p. 272).

In the past few years there has been a rise in the interest in learning Spanish as a second language, and it is now the third language taught after English and French in Canada. Between 1990 and 2000, interest in Spanish as a foreign language grew 300% and the majority of that interest came from Quebec where “31% of the population was able to have a conversation in Spanish” (Carlino, 2008, p. 272). Spanish popularity is up in high schools across Canada, while 15% of elementary school students in both public and private schools choose to study Spanish⁴, which ranked it sixth after Italian, Portuguese,
Polish, Arabic, and Chinese. This information is not surprising given how popular Spanish is to the south of us in the United States. According to the US Census Bureau for 2010, approximately 16% of the population is of Hispanic or Latin origin, that is, 50.5 million people (more speakers than the entire population of Canada). Conversely, Polish is not as popular and there is less access to learning Polish in school at both the high school and university levels. While Hispanic immigrants appear to have more access to their language through the media and in schools, Polish immigrants make up for the lack of resources by sending their children to Polish heritage language schools in after-school programs (in Ontario), by maintaining contact with their heritage language and other Poles through religious ceremony, support of “Polish stores” and businesses, and by creating their own weekly TV shows.

Taking a look at how the two ethnic groups immigrated to Canada, it has been documented by the Canadian Encyclopedia (2012) through the government of Canada that there were six main immigration waves of Poles relocating to Canada (1854-1901, 1902-1915, 1916-1939, 1944-1956, 1957-1979, 1980-1993). Each wave brought Polish immigrants for different reasons: Poland occupied by Austria, freedom returned to Poland, escape after World War II, and economic and political crisis.

The main immigration waves for Latin Americans to Canada are reported to have been in the 1960’s, 1970’s, 1980’s, and between 1996 and 2001. The Canadian Encyclopedia (2012) reports that the 60’s and 70’s brought Chileans (especially after the overthrow of the Allende regime) and Argentineans, while the 70’s brought Ecuadorians, and during the 1980’s there was a large wave of Central American’s. Furthermore, between 1996 and 2001 it is reported that there was an increase of Latin American’s in
Canada by 32%.

Although the two language and immigrant situations are quite different, both groups of immigrants strive to maintain their language in an English dominant country, where language and cultural support is (for the most part) readily available.
Chapter 2

2 Spanish and Polish: The Null Subject Parameter and the OPC

Under the Universal Grammar (UG) framework, it is accepted that parameters are what allow languages to be different, while at the same time explaining in part how it is that children acquire language with such ease and efficiency. According to the Null Subject Parameter (NSP) (Biberauer, Holmberg, Roberts, and Sheehan, 2010; Chomsky, 1981; Jaeggli, 1982; Rizzi, 1982), languages differ as to how they phonetically realize (or not) subject pronouns. The NSP divides languages into those that license and identify null subject pronouns (i.e. pro-drop languages) like Spanish and Polish, where both null and overt pronouns are used, and those that only produce overt pronouns (non-pro-drop languages) like English, where the subject pronoun must always be realized phonetically.

2.1 The Syntax of Spanish and the OPC

Although Spanish as a pro-drop language allows the use of both types of pronouns (empty and overt), they are used in complementary distribution governed by grammatical and discourse principles. Jaeggli (1982) explains that a subject can be dropped in Spanish (and other null-subject languages) because of the overt agreement that is present. For this reason, sentences like (1) and (2) are possible in Spanish (and Polish).
According to Toribio (2000), Spanish has strong nominal features on Agreement but this by itself is not enough to license null subjects. Strong features in Tense are also necessary, which is what is present in Standard Spanish. With that being said, null subjects are used to indicate continuity within a discourse and provide old information, while overt pronouns provide new and contrastive information, as well as a focused interpretation. Zagona (2002) explains that overt subject pronouns are always present in stressed positions and “in contexts of contrastive focus or switching of reference” (p. 25). However, the subject pronoun must be null when the subject of the sentence is non-referring. As seen in example (3), the pleonastic pronoun *it* and the quasi-pleonastic subject of “weather” verbs are always null:

(3) (*Ello) es obvio que (*ello) llovió.
‘(It) is obvious that (it) rained.’

As previously mentioned, the use of null and overt subjects is not entirely optional. An example that Zagona uses to illustrate this is one where the topic of discourse is Juan. If there is no change in referent within the discourse it would be illicit to use the overt pronoun él unless a contrast was being made (p. 25), as in example (4).

(4) Juan no salió con sus amigos anoche. *Juan/?él/?Ø tenía mucha tarea.

Juan no go out with his friends last night. Juan/he/Ø has a lot homework

‘Juan didn’t go out with this friends last night. He had a lot of homework.’

Conversely, example (5) shows how the use of a null subject can also be unacceptable when there is a change of referent.

(5) Hoy no salgo con mis amigos. Juan/él/?Ø no estará contento.

Today no go out with my friends. Juan/he/Ø no be happy.

‘Today I am not going out with my friends. Juan will not be happy.’
Montrul (2004) explains that an overt subject is mandatory when new information is being provided as a contrast. For example, when responding to a question, as in (6), the answer requires focus to be provided with the use of an overt subject.

(6) ¿Quién llegó? El/Juan/*Ø llegó.

‘Who arrived? He/Juan/*Ø arrived.’

Finally, an overt pronoun can co-refer with the subject of the sentence when it is used for emphasis or as topic, as shown in (7).

(7) La madre, dijo que ella/ELLA, preparó la cena.

the mother said that she/(herself) prepared the dinner

‘The mother said that she prepared the dinner.’

In addition to the distribution possibilities of null and overt subjects, Rothman and Iverson (2007a) add that the NSP comes with a cluster of properties as was first proposed by Rizzi (1982) and Jaeggli (1982) and shown below in (8) with examples in (9).

(8) a. the co-occurrence of null and overt subject pronouns in tensed clauses

b. obligatory null expletive subjects

c. free subject-verb inversion
d. no *that*-trace effects

e. the instantiation of the Overt Pronoun Constraint (Montalbetti, 1984)

\[(9)\]

(9) a. Yo hablo francés. *pro hablo francés.*

I speak French. *pro speak French.

‘I speak French. Ø speak French.’

b. *pro hace mucho viento.* *Ello hace mucho viento.*

*pro have a lot wind. It have a lot wind.

‘(It) is very windy. *It is very windy.’

c. Ellas se *fueron.* *Se fueron ellas.*

They themselves went. *Themselves went they.

‘They left. Left they.’

d. *¿Quién cree que no sabe bailar?* *¿Quién cree ___ no sabe*

Who believes that no know to dance? *Who believes ___ no know bailar?*

to dance?
‘Who believes that (he) doesn’t know how to dance? *Who believes ___ (he) doesn’t know how to dance?

e. ¿Quién dice que él tiene mucho dinero? vs. ¿Quién dice que pro tiene

Who says that he has a lot money? Who says that pro has mucho dinero?

a lot money?

‘Who says that he has a lot of money? vs. Who says that Ø has a lot of money?

Rothman and Iverson (2007) explain that properties (8a) – (8d) are found directly in the input. Nevertheless, property (8e) - the OPC - is not as easily identifiable from the input. The OPC is assumed to be a universal linguistic principle, and this interpretive constraint applies to all grammars, but its effects are only displayed in null-subject languages. This constraint accounts for the semantic and syntactic reasons that regulate the ability of subordinate subjects to be pronounced in null subject languages with the presence of quantified (someone, no one) or wh-word (who, which) antecedents.

One example that is provided by Montalbetti (1984, p. 82) to explain the OPC in greater detail is shown in (10).

(10) (a) Muchos estudiantes creen que ellos son inteligentes.

many students believe that they are intelligent
‘Many students believe that they are intelligent.’

(b) Muchos estudiantes creen que $pro$ son inteligentes.

Many students believe that $pro$ are intelligent

‘Many students believe that $\emptyset$ are intelligent.’

Montalbetti explains that sentences (10a, b)\textsuperscript{7} “can be interpreted as containing free pronouns” (p. 82). What he means by “free pronouns” is a pronoun that is free to refer to an object (or objects) within the understood discourse of those participating in the said discourse. It is acknowledged that in sentence (10b), the preferred reading is that where the null pronoun $pro$ is linked to the subject of the matrix clause (the quantified antecedent “muchos estudiantes”). However, it is possible for the null pronoun to also be free and refer to a third party. Following this path of reasoning, if null pronouns are linked or bound to the quantified expression “muchos estudiantes,” then following the English interpretative possibilities\textsuperscript{8}, one might assume that both sentences are also ambiguous in Spanish, allowing for both bound and unbound (coreferential) readings. However, this is not what is found to be possible in null subject languages. Example (10b), the example with the null pronoun, is the only sentence that can be ambiguous. In this sentence, the quantified expression “muchos estudiantes” can be bound in interpretation with the null pronoun in the subordinate clause. This would indicate that many students believe that they themselves are intelligent. The other reading in (10b) would be that where the quantified expression muchos estudiantes refers to a third party...
in the discourse. This would indicate that *many students* believe that *they* (referring to a group of students somewhere else) are intelligent. Example (10a) is unambiguous in that the overt subject pronoun in the subordinate clause can only be interpreted as being unbound. Montalbetti summarizes this finding by stating “[t]he asymmetry is thus established as follows: the lexically realized pronoun (*ellos*) in structures like [(10a)] cannot be construed as a bound pronoun, while the phonologically-null one (*pro*) can” (1984, p. 83). He adds that this contrast in pronoun use can be seen more sharply when using the quantified antecedent *nadie*, as in (11).

(11) (a) Nadie$_i$ cree que él$_{ij}$ es inteligente.

*nobody believes that he$_{ij}$ is intelligent*

‘Nobody$_i$ believes that he$_{ij}$ is intelligent.’

(b) Nadie$_i$ cree que pro$_{ij}$ es inteligente.

*nobody believes that pro$_{ij}$ is intelligent*

‘Nobody$_i$ believes that Ø$_{ij}$ is intelligent.’

According to Montalbetti, the English translation of (11) is ambiguous two ways instead of three. The overt pronoun can be free or bound, but it cannot be coreferential since it is negative. Thus, in Spanish both sentences (11a, b) permit the pronouns (overt and null) to be free (unbound). The same asymmetry discussed in examples (10a, b) is found in
examples (11a, b). The only sentence that permits a bound or linked interpretation is the null subject, which then allows for an ambiguous reading as shown in the options provided in (12).

(12)  
(a) (No x: x a person) x believes that x is intelligent
(b) (No x: x a person) x believes that HE is intelligent

Most important for this dissertation, Montalbetti goes on to add that this constraint can be observed with “different quantifiers” (p. 84), and the examples he uses are *algunos, siete estudiantes,* and *no más de siete estudiantes.* He does not at any point add restrictions to the type of quantifiers that are possible and impossible with the OPC. It is essential to add here that this restriction does not apply when the antecedent is referential (not quantificational). This means that the contrast previously shown in examples (10) and (11) between the overt and null subjects is no longer present, as seen in example (13).

(13)  
(a) Pablo, cree que él es inteligente.

Pablo believes that he is intelligent

‘Paul believes that he is intelligent.’

(b) Pablo, cree que pro es inteligente.

Pablo believes that pro is intelligent

‘Paul believes that Ø is intelligent.’
Montalbetti explains that both sentences (13a, b) are interpreted in the same way. In (13a) the overt subject pronoun can corefer to the referential antecedent or it can refer to a third person within the discourse. As explained above in examplea (4) and (5), there will be a preference for the overt subject to refer to a third person, but a coreference is possible depending on stress. Like in (13a), sentence (13b) can also be ambiguous allowing for two interpretations, however the preference will be for the null subject to corefer to the referential antecedent. All this being said, Montalbetti (1984) suggests the following constraint:

(14) Overt Pronoun Constraint (OPC)

Overt pronouns cannot link to formal variables iff the alternation overt/empty obtains. (Montalbetti, 1984, p. 94)

2.2 Polish

2.2.1 Polish: A Null Subject Language

There are a few contradicting stances on Polish being a null subject language. Although on the surface it appears as though Polish, like Spanish, is a pro-drop language, McShane (2009) argues that it is only a partial pro-drop language because it uses “a combination of overt and elided subjects” (p. 98). Conversely, Bondaruk (2001) states that in Polish, any
pronominal subject that is unstressed should be dropped in a sentence and whenever they are retained it is done because the pronouns are stressed, as shown in (15):

(15)  Ja czytam, a ty śpisz.

I read but you sleep

‘I am reading and you are sleeping.’

Opposing the view of McShane (2009), Bondaruk (2001) compares Polish to Italian reasoning that it is just like any other null subject language in that it only uses overt pronouns when changing referents as a contrast and the rest of the time null subjects are employed, as shown above in example (15).

Chociej (2011) who performed the first real linguistic study looking at the production of null subjects in Polish across generations explains that there are many factors that are considered to be important in Polish as a null-subject language, such as “subject continuity, person and number subject agreement, tense and gender inflection, semantic content of the lexeme, and the type of morpheme found on the clause head” (p. 80). When looking at the production rate of null subjects in her study, she found that Homeland Polish (Baseline Polish or Polish monolinguals) speakers produce null subjects at a rate of 81%. The results of Chociej’s study show that like in Italian (Nagy et al., 2010) and Spanish (Otheguy et al., 2007), in Polish the null subject is found more often with plural subjects compared to singular objects, as well with first person subjects
compared to third person subjects. Additionally, the maintenance of the same subject (referent) within the discourse also drives the use of the null subject.

According to McShane (2009), there are more overt subjects in spoken Polish than in the written mode. She explains that this is so in order for the speaker to “convey emphasis and emotional flavor” (p. 108). However, the use of overt subjects also occurs as a way to code for a switch in reference and contrast (Chociej, 2011, p. 17). Chociej takes McShane’s conclusion and adds that the use of null subjects is more prominent in formal discourse in comparison to informal language use. Chociej’s study further reveals that in Polish the use of overt subjects is not only found in ambiguous contexts. Overt subjects are more commonly used (than null subjects) with negative and interrogative sentences. Additionally, when there is a difference in subject continuity the use of conjunctions that mean “but” tend to produce more overt subject pronouns.

For this dissertation, following the study by Chociej (2011) it is assumed that Polish is a null subject language. The cluster of properties that are present in null subject languages as reported by Rothman and Iverson (2007) and presented earlier in Section 2.1, example (8) are shown as (16). The properties in (16) followed by the examples in (17) are used as evidence that Polish is a null subject language.

(16) a. the co-occurrence of null and overt subject pronouns in tensed clauses

b. obligatory null expletive subjects

c. free subject-verb inversion

d. no that-trace effects

e. the instantiation of the Overt Pronoun Constraint (Montalbetti 1984)
Most importantly the examples provided in (17) demonstrate that Polish is indeed a null subject language, which encompasses all of these properties that are known to be present within the Null Subject Parameter.


*I speak in French. pro speak in French.*

‘I speak French. Ø speak French.’

b. *pro bardzo wieje. To bardzo wieje.*

*pro very windy. It very windy.*

‘(It) is very windy. *It is very windy.’

c. *one sobie poszły. Sobie poszły one.*


‘They left. Left they.’

d. *Kto myśli że nie umie tańczyć? To Kto myśli __ nie umie tańczyć?*

*Who thinks that no knows dance? Who thinks __ no know dance?*
‘Who believes that (he) doesn’t know how to dance? *Who believes ___ (he) doesn’t know how to dance?’

e. Kto mówi że on_{uij} ma dużo pieniędzy? vs. Kto mówi że pro_{uij} ma dużo

Who says that he has a lot money?   Who says that pro has a lot

pieniędzy?

money?

‘Who says that he_{uij} has a lot of money? vs. Who says that Ø_{uij} has a lot of

money?’

Like the examples shown in (9) in Section 2.1 for Spanish, the examples in (17)
demonstrate that Polish also has the cluster of properties that are said to be found only in
null subject languages.

2.2.2 The Overt Pronoun Constraint in Polish

As Section 2.2.1 already established, Polish is a null-subject language. As such, it obeys
the interpretative restrictions that are present on an overt subject pronoun in the
subordinate clause when its antecedent is quantified. The examples provided in (18)
demonstrate the interpretative possibilities on both overt (18a) and null (18b) pronouns.
(18) (a) Nikt₁ nie wierzy że onᵵᵣ jest inteligentny.

no one believes that he is intelligent

‘No one believes that he is intelligent.’

(b) Nikt₁ nie wierzy że proᵵᵣ jest inteligentny.

no one believes that pro is intelligent

‘No one (NEG) believes that Ø is intelligent.’

Sentence (18a) shows that the overt subject pronoun cannot be linked to the quantified antecedent nikt (no one) indicating that the interpretation where “no one believes that no one is intelligent” is not possible in Polish with the overt pro. The only possible interpretation for (18a) is referring to a third person within the discourse (where the pronoun is free). Sentence (18b), however is ambiguous. The null pronoun in the subordinate clause can be linked to the quantified antecedent or it can be interpreted as being free, where it would refer to a third person within the understood discourse or the speakers. For a more thorough explanation of the OPC please see Section 2.1, where the constraint is discussed in further detail with examples from Spanish.
2.3 Quantification

Following Gil (2001), quantifiers can stand alone and they express quantity such as in English *no one, everyone, many*, in Spanish *nadie, todos, muchos*, and in Polish *nikt, wszyscy, wiele*. However, it is important to note that quantifiers can also be labeled in many different ways in that they have both internal and external typologies. Gil explains that the internal typologies provide important semantic and morphosyntactic information such as whether the quantifier is mass or count, existential or universal, definite or indefinite, or collective or distributive. On the other hand, external typologies provide information on the semantic and morphosyntactic properties of the quantifier and its relationship with their quantified expressions, for example looking at nominal or verbal quantification, or continuous or discontinuous quantification.

Furthermore, the semantic configuration that is involved in quantifiers is bilateral in that it consists of the quantifier itself and the determiner phrase (DP) that is quantified by the quantifier. However, it is possible to have just the quantifier (phrase) with no DP where it is pragmatically assumed who is being referred to by the quantifier itself, where the subject is dropped phonologically (as in pro-drop situations). Gutiérrez-Rexach (2012) calls this determiner pronominalization. For example, as seen in (19), the use of the quantifier *todos* refers to “all the members” within the specified context without the need to pronounce the DP itself.

(19) Todos quieren salir a cenar.
    everyone wants to go out to have dinner
‘Everyone wants to go out to have dinner.’

Example (19) shows that the quantifier can indeed stand alone and it does not always have to be followed by a DP such as “los amigos” (the friends) because the context provides that information. Example (19) is important for this work because three out of four quantifier phrases (QPs) used in this study are pronominalized (as in example (19), while one is followed by a DP, and two are wh-words. The theory that will be used to analyze the quantifiers in this study will be the Checking Theory that is proposed by Beghelli and Stowell (1997), which will be discussed in further detail in the next section.

2.3.1 The Checking Theory

Beghelli and Stowell (1997) proposed a theory on the syntactic positioning of quantifiers where they reject the main assumption that all QPs have the same scope possibilities (or also known as Scope Uniformity). The authors propose what they call a hybrid theory composed of the work done by May (1977, 1985) who assumes that a QP’s syntactic position for case never operates as a scope position, and that of Hornstein (1995) who has a more liberal approach and assumes that a QP’s scope position can be at either the case position or its Ø-position. Beghelli and Stowell (1997) incorporate aspects from both May (1997, 1985) and Hornstein (1995) and they distinguish between different QP-types and show that there are QP-types that take scope in their Case positions (and do not move at LF), while there are others that must move to scope positions that are specific for them.
Table 6 below provides the five QP-types that are proposed by Beghelli and Stowell (1997), their properties, and examples for Spanish and Polish.

Table 6. Quantifier phrase types and their properties

<table>
<thead>
<tr>
<th>QP-TYPES</th>
<th>PROPERTIES</th>
<th>ENGLISH EXAMPLES</th>
<th>SPANISH EXAMPLES</th>
<th>POLISH EXAMPLES</th>
</tr>
</thead>
<tbody>
<tr>
<td>(\square) WhQP</td>
<td>Interrogative phrases with [+Wh] feature</td>
<td>Who; What</td>
<td>Quién; Quiénes (who SG; PL)</td>
<td>Kto; Którzy (who SG; PL)</td>
</tr>
<tr>
<td>(\square) NQP</td>
<td>Negative phrases with [+Neg] feature</td>
<td>No one; Nobody</td>
<td>Nadie; Ninguno</td>
<td>Nikt; Źaden</td>
</tr>
<tr>
<td>DQP</td>
<td>Distributive-Universal [+Dist]</td>
<td>Each; Every</td>
<td>Cada (uno)</td>
<td>Każdy</td>
</tr>
<tr>
<td>CQP</td>
<td>Count: includes quantifiers and cardinality expressions. [local scope]</td>
<td>Few; More than four; between six and nine</td>
<td>Pocos; Más de cuatro</td>
<td>Niewiele; Więcej niż cztery</td>
</tr>
<tr>
<td>(\square) GQP</td>
<td>Group-Denoting: definite/indefinite QPs; bare-numeral QPs. [widest scope]</td>
<td>All; Many</td>
<td>Todos; Muchos</td>
<td>Wszyscy; Wiele</td>
</tr>
</tbody>
</table>

The QP-types found in this study.

Table 6 above shows that the QP-types are divided into five different classes: 1. Interrogative QPs (WhQPs); 2. Negative QPs (NQPs); 3. Distributive-Universal QPs (DQPs); 4. Counting QPs (CQPs); 5. Group-Denoting QPs (GQPs). It is explained that WhQPs are interrogative phrases or wh-words such as who, what, which man, etc. and the authors maintain that these WhQPs have a [+Wh] feature. The NQPs are quantifiers such
as *no one, nobody, no man*, etc. (they also mention that the Spanish *nadie* ‘nobody’ also belong in this group), and these quantifiers are known to have the feature [+Neg]. The DQPs are QPs which have a distributive feature [+Dist], such as *each* and *every*. The CQPs include quantifiers such as *few*, or *fewer than four*, but also include cardinality expressions such as *more than four, between six and nine*, etc. The important aspect of this group of QPs is that “they count individuals with a given property, have very local scope…and resist specific interpretations” (p. 74). The final group of QPs, the GQPs, is one of the largest classes. In this group there are indefinite QPs such as *a, some, several*, bare-numeral QPs such as *three students*, as well as definite QPs such as *the students*. Most importantly this group of QPs denotes *groups* and plural individuals and is believed to take the widest scope within their clause, which is said to come from their ability to introduce group referents. For this study I will focus on three specific QP classes, which are the WhQPs, NQPs, and GQPs.

Looking at the various scope positions for the three QP types, it is argued that the WhQPs take scope in the Spec of CP where they check their [+Wh] feature through Spec-Head agreement with the question operator Q. NQPs take scope in the Spec of NegP and they check their [+Neg] feature through Spec-Head agreement with the Neg⁰ head. Finally, GQPs have several options depending the type of Group QP. Those that function as subjects of the predicate occupy the Spec of RefP, thus having widest scope. GQPs that are headed by an indefinite quantifier or a bare numeral take scope in the Spec of ShareP but they may also remain in situ and take scope in their Case positions. In this case they would be interpreted non-specifically like CQPs. Contrastingly, *specific* indefinite GQPs take scope in the Spec of RefP. As well known as it may be that both WhQPs and NQPs need to check their respective [+Wh] and [+Neg] features, the authors
argue that a similar process takes place with other types of QPs. The representation of the outlined positions can be seen in (20) and is to be considered a hierarchy.

As briefly mentioned above, Beghelli and Stowell (1997) explain that GQPs as a class are not assigned one landing site. However once a GQP is the subject of the predicate it will move all the way to RefP. This is important here because all of the QPs used are what
the authors call “logical subjects”. Thus example (21) shows the specific landing sites that are relevant to this study.

(21)

According to (21), the quantifier phrases used in this study only have three options of where they can take scope over their c-commanded arguments: NegP, CP, or RefP. Knowing these three options, it can be added that GQPs have widest scope (taking scope over the entire CP) and NegP has the most narrow scope (taking scope over AgrOP and the constituents below that). With this in mind, Beghelli and Stowell explain that “Checking Theory is sensitive to the inherent semantic type of the QPs involved” (p. 78).
In more detail they add that first there are certain QPs that have to undergo LF movement from their Case positions, while there are those that do not (they remain *in situ*). Then the Checking Theory provides specific scope positions for the QP types mentioned above that do move. Just like WhQPs (‘quién/kto; quiénes/który’) move to the Spec of CP and NQPs (‘nadie; nikt’) move to the Spec of NegP, definite GQPs and indefinite GQPs also have their target positions at the Spec of RefP (with quantifiers ‘muchos/wiele; todos/wszyscy’). Finally the authors make one last claim adding to the Checking Theory stating that “the traditional notion that LF movement is typically optional can be dispensed with. Given that QP-types are endowed with certain intrinsic features, they *must* move to those scope positions where the features in question can be licensed” (p. 79). Based on the observations by Beghelli and Stowell (1997), this work will analyze the results presented in Chapter 5 in order to be able to ascertain whether or not Checking Theory can explain the participant responses.
Chapter 3

3 The Maintenance and Acquisition of the Null-Subject Parameter

One of the first goals of research on second language acquisition was to see if a second language learner could reset a parameter, which was not available in their first language. This was the aim of Liceras (1989) who was investigating the acquisition of Null-Subject Parameter (NSP) in Spanish by native speakers of English and French. In her study she tested 32 speakers of French as a native language and 30 speakers of English as a native language, who were all learners of Spanish as a second language. All speakers were divided into four different proficiency groups: beginners, intermediate, advanced, and high advanced. Regardless of their proficiency level, they all completed a grammaticality judgement task where they were asked to correct any part of the sentence that they considered to be wrong, indicate if the sentence sounded unnatural, and then translate the sentence into their native language in order to see if they had the correct interpretation. Examples (1) and (2) show the types of sentences the participants were asked to judge.

(1) *Ello hace mucho frío en Canadá.

“It is very cold in Canada.”

(2) [pro] Dicen que [pro] va a nevar.
“They say it is going to snow.”

Both examples (1) and (2) test for the use of the pleonastic pro where the participants need to know that the subject pronoun ello in (1) is ungrammatical and the absence of both pronouns in (2) is grammatical, especially with weather verbs (in both sentences). In addition to the use of or acceptance of the null subject, Liceras was also looking at two other components of the NSP: subject-verb inversion and that-trace effect. Her results indicate that overall the pleonastic pro is easily acquired by all learner levels, while the subject-verb inversion occurs steadily in advanced and high advanced speakers of English and is also seen in intermediate speakers of French. When looking at the that-trace effect, highest results are found in the high-advanced groups of speakers in both languages, showing gradient results in the lower groups. These results indicate that not all aspects of the NSP are acquired with an equal amount of ease, which is counterintuitive if one follows the notion of clustering in parameters. When addressing the Null Subject Parameter, it has been found that once a child realizes that its language licenses null subjects, the rest of the properties that are found within that particular parameter are acquired (Jaeggli, 1982; Rizzi, 1982). These properties (both null and overt subjects in finite clauses; obligatory null expletive subjects; free subject-verb inversion; no that-trace effect; the Overt Pronoun Constraint) were discussed in detail in Section 2.1.

WhileLiceras (1989) was interested in the acquisition of the NSP in the interlanguage of a second language learner, Lipski (1996) was specifically interested in the use of overt and null subjects by transitional bilinguals (TB) who were of Mexican, Cuban, and Puerto Rican descent. It is important to note here that Lipski used the term
transitional bilingual before the term heritage speaker became commonly used. Lipski’s TBs are considered to be heritage speakers because they grew up in the US speaking Spanish at home. It is reported that the TBs were of varying proficiency levels in Spanish but no language testing was done to determine the level of language that they possessed. Informally, Lipski found out about their status of being TBs by asking about how they learned Spanish and English and where they use both languages. The speakers were observed and recorded informally, which provided him with a corpus of Mexican, Cuban, and Puerto Rican Spanish. The aim of this study was to learn whether there was divergence in the language use of these bilinguals in comparison with native speakers of their Spanish variety.

Lipski found that no speaker failed at producing null subject pronouns, indicating that the Null Subject Parameter is still intact in all bilinguals, regardless of their proficiency level. Nevertheless, there was a frequent amount of overt subjects used when there was no change in referent or “contrastive focus” (p. 170), regardless of the variety of Spanish they spoke. Interestingly, Lipski reports the use of overt subjects that are interpreted as being bound to their quantified antecedents. This is found in all three varieties of Spanish:

(3) a. Mexico: Todos los americanos dicen que ellos son los mejores.

All the Americans say that they are the best

‘All Americans say that they are the best.’

b. Cuba: Todos los cubanos piensan que ellos van a volver para Cuba.
All the Cubans think that they go to return for Cuba

‘All Cubans think that they are going to return to Cuba.’

c. Puerto Rico: ¿Quién piensa que él sabe más que los demás?

Who thinks that he knows more than the others

‘Who thinks that he knows more than the others?’

The examples in (3) were produced by bilinguals with Mexican, Cuban, and Puerto Rican backgrounds. The interpretation provided by the subscript suggests that the transitional bilingual(s) are violating the Overt Pronoun Constraint and allowing for an interpretation that does not exist in Spanish but is permitted in its English counterpart. Unfortunately, the speaker’s level of proficiency in Spanish is unknown and from other previous work that will be discussed in this section shows that they had to have been at a lower proficiency in their Spanish.

To add further significance to my work, after discussing the oral production data in his corpus, Lipski (1996) included a pilot study, which was based on 15 sentences that looked at various components of the Null Subject Parameter. Of those 15 sentences, five looked at the interpretation of an overt subject pronoun in the subordinate clause when its antecedent was quantified (two were wh-words and three were quantified). This pilot study consisted of two tests; both tests were composed of the same tokens but each had different instructions for the participants: In Test 1, participants read the sentences and were asked to judge if they were “OK”, “unlikely”, or “impossible”. They were also informed that they could make any changes to the sentences directly on the questionnaire. Test 2 consisted of the same sentences but specific components in each sentence were
Participants were asked if the underlined items could refer to one another by indicating with “completely OK”, “possible but not likely”, or “impossible”.

In this study there were three groups of participants: monolinguals, balanced bilinguals, and transitional bilinguals. Since Lipski was interested mainly in what was happening in the Cuban variety of Spanish in the Florida area, the monolingual group consisted of recent Cuban immigrants to Florida who had been in the United States for only a year. The balanced bilinguals were Cuban-Americans who were raised in the United States and they had a native level proficiency in both English and Spanish. In order to be sure of their proficiency in Spanish, Lipski explains that extensive written and oral testing was done by a Cuban native speaker. The transitional bilinguals were also Cuban-Americans raised in the United States but they were not balanced, instead they were English-dominant. All participants were students at Florida universities at the time of testing. Each group contained 10 participants but only five completed each task, ensuring that no one completed both tests.

Results indicated “unexpected variability among all three groups” (p. 177). It was found that in general the TBs accepted overt pronouns (bound to quantified antecedents) much more than the other two groups. However, the other two groups also accepted overt pronouns although at a much lower level. According to Lipski this indicates that in the Cuban variety of Spanish the overt pronoun does not always act as a focused element. Looking at the difference between the two tasks, there was a generally higher acceptance rate of overt pronouns in Test 1. When looking at the types of “corrections” made to Test 1 by the participants, Lipski comments that they are mainly stylistic in nature. Additionally, the TBs made the least amount of corrections to the sentences. The two
tables provided on the two tests show a comparable difference in acceptance rates (percentages) between all three groups. No statistical analysis is provided.

Lipski does explain that there is large variability in the language abilities that the transitional bilinguals have, indicating that they are a very heterogeneous group compared to the other two groups. He advises, “‘transitional bilingual’ is not a category with precise defining characteristics, but rather a range of abilities spanning the gap between balanced bilinguals and imperfect speakers of Spanish as an L2” (p. 178). His concern with this group enforces what has been implemented in the more current studies on heritage languages in order to try to maintain some type of homogeneity in the heritage speaker participant groups.

This early study demonstrates two things: Heritage speakers or Lipski’s “transitional bilinguals” displayed an overproduction of overt subject pronouns, and crucially they displayed uncertainty in their interpretation of sentences that were constrained by the Overt Pronoun Constraint. Although Lipski is unsatisfied with the variability found in the TB group, his results indicate a slight change in interpretation possibilities among all three groups, where the weaker their Spanish is, the more divergence there will be from the monolinguals. Unfortunately very little can be said about the possibility of incomplete acquisition in these bilinguals because no information is provided on when they started to learn both languages.

The work done by Lipski (1996) was important in that it was successful in describing the status of null and overt subjects in the Spanish spoken in the US. Otheguy and Zentella (2007) were also interested in the use of null and overt subjects but their work was concentrated on the Spanish spoken New York city (NYC). Working off a database, which was made up of 415 interviews with a duration of 45-70min in length
each, Otheguy and Zentella along with a research team looked only at those interviews which met their participant criteria. Specifically they were interested in those who were “recent immigrants” to the US and NYC (in NY for less than 5 years and had left their country of origin at 17 years of age or later). These speakers had to have immigrated from the following countries: Dominican Republic, Puerto Rico, Cuba, Ecuador, Colombia, and Mexico. Their next group of participants included those they categorized as “second generation” and they were either born in NYC or had immigrated there at age 13 or earlier. Within this group was a group of participants who “were raised in NYC” and they were those who were born in Latin American but immigrated between 2 and 13 years of age. As well, the “second generation” group included participants who were “born in NYC”. These participants had to be understandably born in NYC or immigrated before 1 year of age. Their final group of participants includes those labeled as “immigrants”. These participants could not have been recent arrivals (so they were in NYC for more than 5 years) and they could not be considered second generation (so they had to have arrived to the city at 13 years of age or older). Table 7 below shows the participant breakdown in the Otheguy & Zentella (2007) study.

Table 7. Participant groups in Otheguy & Zentella (2007)

<table>
<thead>
<tr>
<th>PARTICIPANTS</th>
<th>CHARACTERISTICS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Recent Arrivals</td>
<td>In NYC less than 5 years; Arrived at NYC after 17 years old</td>
</tr>
<tr>
<td>Second Generation</td>
<td></td>
</tr>
<tr>
<td>- Raised in NYC</td>
<td>Born in NYC or Arrive at NYC before 13 years old</td>
</tr>
<tr>
<td></td>
<td>- Born in Latin America &amp; arrive at NYC between 2 and 13 years old</td>
</tr>
<tr>
<td>- Born in NYC</td>
<td></td>
</tr>
<tr>
<td></td>
<td>- Born in NYC or Arrive in NYC before 1 years old</td>
</tr>
</tbody>
</table>
In making their comparisons between the different types of participants, Otheguy and Zentella make a second grouping separating them between “Continental” Spanish and “Caribbean” Spanish. The Continental group includes those participants from Ecuador, Colombia, and Mexico, while the Caribbean group includes those from the Dominican Republic, Cuba, and Puerto Rico.

The first comparison they did was between the Recent Arrivals and the Second Generation, and they found that the Second Generation produces a significant amount more of overt pronouns than the Recent Arrivals. Making a closer comparison they looked at the Recent Arrivals with those Raised in NYC. Here they found that there was a change in overt pronoun use in the group raised in NYC, which appears to occur first in the Caribbean group of speakers. When looking at the Recent Arrivals with those Born in NYC, this is where they start to find change in the Continental group in the participants who were born in NYC. Finally they compared the Recent Arrivals to the Immigrants and they found no statistical difference in the amount of overt pronouns produced indicating that the change found in the Second Generation begins at the second generation and not with the immigrants who had been in NYC for over 5 years.

This study shows that language change in the use of the overt pronoun is happening very slowly. It is not found at all in those who are considered to be recent arrivals (less than 5 years in the US) nor is it found with those who have spent more time in NY. It does however, appear to begin with the Caribbean group, specifically those participants raised in the city (born in Latin America but came to the US between ages 2
and 13). However, the Continental Spanish group also begins to produce more overt pronouns but it is found with those who were born in NYC. Otheguy and Zentella conclude that their study shows that the use of overt pronouns in NYC is slowly increasing. This may be due to two reasons – contact with English as well as close contact with the Caribbean variety of Spanish – both of which are causing a change in the production of both the null and overt pronouns.

Lipski (1996) and Otheguy & Zentella (2007) were only interested in the status of overt and null pronouns in Spanish in the US. However, there is previous work, which was specifically on the Overt Pronoun Constraint (OPC), and it set out to investigate whether second language (L2) learners are capable of acquiring the interpretation factors and the syntactic constraints involved in grammatical constructions that make up the OPC. The focus of the studies that investigated this constraint was to see if adult L2 speakers demonstrate that they have the interpretative abilities that are constrained by the OPC in their second language, while being non-existent in their first language. Although no previous work has looked at the OPC with heritage speakers, the previous works of Kanno (1997), Pérez-Leroux & Glass (1997), Gürel (2003), and Rothman & Iverson (2007a) are important for this work in that they briefly discuss native speaker results, while the results presented on the L2 speakers may also be comparable to this study because if it can be shown that a second language learner can acquire this subtle aspect in their L2 grammar (that is non-existent in their L1), then it would be expected that a heritage speaker should also have this component in their mental grammar. As previously mentioned in Section 1.2, the grammar of heritage speakers has been shown to be similar to that of second language learners, and several previous studies have set out to demonstrate the similarities between heritage speakers and second language learners (Au

One of the first studies that looked at the acquisition of the OPC by L2 speakers was that of Kanno (1997). She looked at 28 L2 Japanese learners whose first language was English in order to see if these L2 learners had access to Universal Grammar (UG) by looking at their interpretations of Japanese sentences that were constrained by the OPC. The task consisted of four bi-clausal sentences (five tokens each) that looked at the presence/absence of an overt subject pronoun in the subordinate clause with a quantified antecedent; and the presence/absence of an overt subject pronoun in the subordinate clause with a referential antecedent. In this task, participants were shown a bi-clausal sentence with a quantified antecedent and an overt or null subject pronoun in the subordinate clause. Following this sentence, there was a direct question about the embedded subject, as shown in (4).

(4) Dareka ga kare ga tomodati kara kuruma o kariru to itteimasita yo.

someone Nm he Nm friend from car Ac borrow that was-saying

‘Someone was saying that he is going to borrow a car from his friend.’

Question: Dare ga tomodati kara okane o karitun desyoo ka.

who Nm friend from money Ac borrow that suppose Q
‘Who do you suppose is going to borrow a car from his friend?’

a. same as dareka  b. another person

Kanno reports that with the presence of an overt subject pronoun in the embedded clause (context for the overt pronoun constraint), her Japanese control group ($N=20$) responded with a 98% correct response rate, indicating that they did not permit the binding between the quantified antecedent and the overt subject pronoun. The L2 learners in this study responded with an 87% correct response rate, indicating that they knew how to correctly interpret sentences that are constrained by the OPC, an interpretation restriction that does not exist in English. The successful completion of the L1 English – L2 Japanese learners leads Kanno to conclude that these speakers maintain access to UG.

These ceiling results from the native speakers could be due to the methodology employed in this study, making it overwhelmingly clear what aspect of grammar was being analyzed. Since the task contained no distractors and all of the sentences contained the same types of structure, it would become clear very quickly as to what was being looked at in each token. Furthermore, by asking directly for the participant’s analysis of the token sentence, this study falls short at looking at the participants’ natural intuitions in their L2. Instead, they are forced to analyze the sentences metalinguistically, which is why the results provided in the article are so high, indicating that the results show the participants’ strength in the syntax and ability to analyze the sentences.
Similar to the study done by Kanno (1997), Pérez-Leroux and Glass (1997) aimed to show that “very experienced L2 speakers of Spanish” (Pérez-Leroux & Glass, 149) also provide interpretations close to native speakers of Spanish, in that they understand the interpretive restrictions on bi-clausal sentences that have a quantified antecedent and contain an overt subject pronoun in the embedded clause. In this study, the interpretation of the OPC in L2 Spanish was tested in 16 adult native speakers of English. Additionally, there was a control group of 18 native speakers of Spanish from various regions of Latin America and Spain. The task consisted of eight short stories in English that were about two to three sentences long. The exercise for the participants was to translate the last sentence in the story, which was prompted by the first word (the antecedent type) being in Spanish. Example (5) shows a story where the translation required the embedded overt subject pronoun to be unbound.

(5) Referential Story: *My Friends are all excited about the U.S. Open Tennis Tournament*. *The player that is most on their mind is Pete Sampras. They’ve barely mentioned Stefan Edberg and Andre Agassi.*

To translate: Everybody thinks that he will win.

Prompt: Todo el mundo…

Target translation: Todo el mundo cree que él ganará.

Example (5) demonstrates that based on the context provided the embedded overt subject cannot be bound to the quantified antecedent. The participant must understand this
reading first in English and then be able to apply it in Spanish. Four stories were designed so that the antecedent was not bound to the overt subject pronoun; in the other four, the antecedent was bound, requiring the participants to know that a null subject is required in the subordinate clause.

Pérez-Leroux and Glass reported that within a bound context, where the participants were expected to produce a null subject pronoun in the subordinate clause, their native speakers did so 75% of the time. At a rate of 15.28% they used an overt subject pronoun, while 9.72% of the time they produced “other” responses, such as “non-responses, lexical NP subjects (i.e., “Todo el mundo cree que Sampras ganará”) and infinitivals in the embedded clause (which require a null subject)” (p. 158). The L2 learners, on the other hand, produced zero embedded overt subject pronouns and outperformed the native speakers by responding with an 87.5% accuracy rate with null subject pronouns\(^\text{13}\), indicating that adult learners have access to UG principles in acquisition. The authors argue that the lack of overt pronouns on the part of the learners is due to the fact that they tend to overuse null pronouns in contexts where its overt counterpart is expected.

Using translation tasks in order to test language abilities has been criticized by linguists. Just as Kanno’s (1997) results appear to be due to the type of task employed, here it is argued that a translation task does not fully activate one language in the brain. If the dominant language is being used within the task, it is possible that the second language, in this case Spanish, is never fully activated and the intuitions provided are that of the dominant language. Additionally, translation is said to be a conscious effort on the part of the speaker, being fully aware of the choice of words selected. In contrast, the
aim of a linguistic task is to test the competence - unconscious knowledge - of an aspect of language. This being said, the results provided by the authors do not appear to be hindered in any way by the translation task or by the presence of English in the task. No priming effect can be reported given the fact that the task was in English, which requires that the subordinate subject always be present. Nevertheless, it would be interesting to see the type of responses gathered using a less controversial and conscious type of task.

While the work of Kanno (1997) and Pérez-Leroux and Glass (1997) looked at the acquisition of the OPC (in Japanese and Spanish respectively) by native speakers of English, Gürel (2003) first wanted to show that although Turkish is a null-subject language, null and overt pronouns have a similar distribution (indicating that the OPC does not hold in Turkish); finally she wanted to see how 28 L1 English and end-state L2 Turkish would acquire both null and overt pronouns. Her control group consisted of 20 native Turkish speakers.

The author explains that Turkish has two overt pronominals (o ‘s/he’ and kendisi ‘self’) in addition to allowing a null pronoun. Unlike the restriction proposed by Montalbetti (1984) on null and overt subject pronominals in the subordinate clause in null-subject language, in Turkish when kendisi and pro are present in the subject position of an embedded clause, they have the same antecedent possibilities as shown in (6).

(6) a. Kimse [o-nun å] akilli ol-dug-u]-nu düşün-m-uyor

Nobody s/he-Gen smart be-Nomz-3sgposs-Acc think-Neg-Prg
Example (6a) shows that *o* works just like an overt subject pronoun in Spanish or Japanese, in that it cannot be bound to the quantified antecedent. Examples (6b) and (6c) demonstrate a phenomenon that appears to be unique to Turkish, in that the overt pronoun *kendisi* and its null counterpart are both unconstrained and allow for an ambiguous reading. Gürel proposes that *pro* is not a null counterpart of *o* but of the overt pronoun *kendisi*.

In order to test whether L1 English speakers who are end-state L2 speakers of Turkish can acquire this contrast between the three pronouns, participants were asked to complete a written interpretation task, which was modeled after the task presented in Kanno (1997). After reading a Turkish complex sentence that met all conditions for the OPC, participants chose a possible antecedent for the embedded subject pronoun between three possible options. Like in Kanno (1997), Gürel made it possible for participants to select both options, indicating that they interpreted both as being correct.

The second task was a truth-value judgment task. It was similar to that carried out by Pérez-Leroux & Glass (1997), in that participants read a short story in English and it
was followed by a sentence in Turkish. Instead of being asked to translate the final sentence into Turkish (like in Pérez-Leroux & Glass, 1997), participants were asked to judge it as true or false based on the short story. It is argued that based on the response provided, the author would know what type of reading the participant was getting (bound or disjoint).

Gürel reports that in the written interpretation task (like that in Kanno 1997), the control group chose a disjoint reading at a rate of 89% in sentences that contained the overt pronoun o. Sentences that contained overt pronoun kendisi received a bound and disjoint answer (selecting “both”) at a rate of 68%, while its null counterpart also overwhelmingly prompted a bound and disjoint answer at a rate of 87%. The L2 learners appear to have answered similarly to the control group when responding to the presence of the overt pronoun o in choosing a disjoint reading at a rate of 77%. According to Gürel, the difference between the control group and the L2 learners is statically significant, indicating that the learners are transferring their interpretation of the overt pronoun o from their L1 English. The interpretation options for the overt pronominal kendisi were not as clear, prompting the learners to choose a bound reading 56% of the time. These results indicate that the L2 end-state learners of Turkish do not see the ambiguity that the pronoun kendisi presents. Furthermore, they appear to prefer a bound and disjoint reading when the null pronoun is present, selecting this option at a rate of 48% and the other two options independently at 26% each.

When given only two options (bound or disjoint) as in the truth-value judgment task, the control group overwhelmingly chose a disjoint reading with the presence of the overt pronoun o at 97%, a bound reading with the overt pronoun kendisi at 81%, and 74% when the pronoun was null. The L2 learners appear to follow this trend by responding
with 73% for a disjoint reading with overt pronoun $o$, 79% for a bound reading with overt pronoun *kendisi*, and 70% for a bound reading with a null pronoun.

According to Gürel, this study shows that the L2 learners indicate knowing that overt pronoun $o$ is not the counterpart of *pro*, and *kendisi* is not treated like $o$, which suggests that these learners know that the two overt pronominals are different in terms of their binding options. The control group further confirms that overt *kendisi* and null *pro* are each other’s counterparts by interpreting them similarly. Lastly, the author concludes that although the OPC is said to be present in all null-subject languages, Turkish is one exception due to the evidence that overt embedded subject pronouns are not treated differently with referential or quantified antecedents.

Unlike the two previous studies mentioned above that investigated the OPC, Gürel clearly shows that although Turkish is a null subject language, syntactically the overt and null subject pronouns do not follow the same rules that are shown to govern both Spanish and Japanese. When looking at the types of tasks used in this study, it is found that they are very similar to that used by Kanno (1997) and Pérez-Leroux & Glass (1997). Because of this similarity, the same types of problems can be found in Gürel’s study. The first task, the written interpretation task, provided no context for the sentences to be interpreted. Participants were specifically asked to provide their judgments on the embedded subject that was either an overt or null pronoun and they had to consciously judge the target sentence and choose which interpretation was best according to them, which made this a metalinguistic task.

While Gürel (2003) showed that Turkish as a null-subject language does not have the OPC restriction on the interpretation of the overt subject pronouns, her study did show that the L2 learners of Turkish did manage to acquire the differences in the
interpretation and use of that two overt pronouns kendisi and o, as well as the null pronoun.

Although Pérez-Leroux and Glass (1997) already showed that learners of Spanish as a L2 can acquire the OPC, Rothman & Iverson (2007a) compared two different second language learner groups of Spanish to see if different linguistic exposure would have an effect on the resetting of the NSP. The aim of their work was to provide evidence that being exposed to an increased amount of native speaker input at a study-abroad program is beneficial in the parameter re-setting process. Because the OPC is just one component of the NSP, this paper analysis will solely focus on the results that specifically pertain to the OPC.

The two participant groups that were compared are adult English intermediate learners of L2 Spanish who completed a study abroad program in Madrid, Spain (n=30), versus those who only had exposure to Spanish in the classroom who were at the same proficiency level (n=24). The authors also included a group of eight monolingual speakers of Spanish from Madrid, Spain as their control group.

The task used to test for knowledge of the OPC was a co-reference judgment matching test, which was modeled after the test done by Kanno (1997) who looked at L2 Japanese as explained above. Participants were provided with a sentence or question, which included all elements that compose the OPC. Directly after this sentence or question, Rothman and Iverson state that, “participants were asked to indicate immediately whether they derived a bound variable or disjoint referential interpretation for the embedded subject pronoun” (p. 199). The following is an example of a target sentence provided:
Question: Who do you suppose never gets angry?

a) the same as Quién b) otra persona ‘someone else’

The results presented by Rothman & Iverson demonstrated that monolinguals respond extremely well to such types of questions in that they do not tend to get a bound variable reading with an overt subject pronoun in the subordinate clause. On average, the native speakers underwhelmingly chose a bound reading at a rate of 8.8%. As for the two learner groups, the study-abroad and the in-class groups responded similarly with a score of 34.3% and 34.2% respectively. These results indicate that 66% of the time they were responding like monolinguals in choosing an unbound interpretation. The authors further explain that a study-abroad program is not a necessary step in the acquisition process in order to reset the NSP.

Nevertheless, when a monolingual is being asked to explicitly judge his/her native language, it is not surprising that the results demonstrate near-ceiling results. This may be also the reason for why intermediate (and not advanced) level speakers were capable of scoring the way they did. When showing the participants one sentence, which is directly followed by a question that pertains to the structure/interpretation of that sentence, participants have no choice but to look closer into the target sentence to see what makes it so special, especially since there is no mention of distractor sentences.
The works presented in this section aimed to demonstrate that adult second language learners of a null-subject language were capable of acquiring or showing interpretative abilities of the Overt Pronoun Constraint in compound sentences. Kanno (1997) did this through her work on adult English speakers of L2 Japanese, Pérez-Leroux & Glass (1997) looked at adult English speakers learning Spanish, Gürel (2003) studied adult English end-state learners of Turkish, and Rothman & Iverson (2007a) investigated adult English learners of L2 Spanish. Overall these studies show that these second language learners of a null subject language were able to reset the Null Subject Parameter successfully, adding evidence to continued access to Universal Grammar even into adulthood.

Rothman & Iverson (2007a) argue that their results are “in line with previous research on the OPC” (p. 205), however this may only be true due to the fact that their study and all the previous works have been modeled on very similar metalinguistic tasks that required the participants to analyze the sentences and possibly the structures being tested. All tasks used thus far have been either a form of translation, or explicit questions about the target questions which contained no context, making the tasks overly metalinguistic in nature. As mentioned previously, such tasks are thus testing very conscious knowledge of language, instead of that what is unconscious. Therefore, what the results show is that consciously these speakers are very aware of the syntactic constraints present in the L2. In addition, there is no mention of distractors within the tasks, nor is there any explanation of the types of quantified antecedents used to see if that could play an effect on how sentences are analyzed. The only study that mentions quantified antecedents is Pérez-Leroux & Glass (1997). They explain that they use quantifiers instead of wh-words due to the problems they had with them in a previous
study (Glass & Pérez-Leroux 1997), and the ones they employ in their current study are
distributive quantifiers (‘each student’), group quantifiers (‘everybody’), and negative
quantifiers (‘nobody’). They do not explain if there was one that elicited better results.

Equally important, no work thus far has been done on the OPC in Polish
monolinguals, or as an acquisition study. For this reason, this work aims to contribute to
the literature on the OPC, further adding to the groups of languages, which have shown to
obey this restriction on the interpretation of the overt subject pronoun in the embedded
clause when its antecedent is quantified or a *wh*-word.

I argue that the studies conducted on the OPC were too metalinguistic in that they
specifically asked their participants on their judgments on specific parts of sentences that
make up the overt pronoun constraint. For this reason alone the results produced by the
participants of these studies do not tap into the real interpretation but instead into the
syntax of the OPC. Instead, the tests conducted for this dissertation attempted to elicit
speakers’ natural intuitions and interpretations on sentences that were constrained by the
Overt Pronoun Constraint.

Building on the previous studies, this dissertation aims to provide a clearer picture
of the restrictions within the OPC on null-subject languages, looking at monolingual and
heritage speakers’ interpretations in both Spanish and Polish. Because the previous
works focused on transitional bilinguals (or heritage speakers) and their use of null and
overt subjects, as well as the L2 learner and how they interpret the OPC, my study
presents data on the L1 and the heritage learner, which aims to close the gap in this topic
of study.
Chapter 4

4 Methodology

4.1 Research Questions and Hypothesis

In Chapter 1, Section 1.6, and in Chapter 3 previous works were discussed that looked at the grammatical characteristics of heritage languages. While some studies looked at incomplete acquisition, others looked at language transfer, and language change over time. While Silva-Corvalán (1991, 1996, 2003) showed very clearly that the verbal system undergoes an internal change, which can be seen from generation to generation, Lipski (1996), Montrul (2004), and Otheguy and Zentella (2007) looked at the production of null and overt subjects and demonstrated that although heritage speakers produce overt subjects at a higher frequency compared to monolinguals, heritage speakers still maintain the Null Subject Parameter and produce null subjects.

This present study looks at the interpretation possibilities of overt subject pronouns in the subordinate clause with a quantified or wh-word antecedent in heritage speakers of Spanish and Polish. All participants were asked to complete two tasks designed to test if English would influence them in their interpretation of sentences constrained by the Overt Pronoun Constraint (OPC). The goal of the first task, the Sentence Selection task (SST), was to see how the speakers would respond when being provided with a context that only allowed for one type of interpretation, and intentionally forced them to choose the “correct” option. The goal of the second task, the Picture-Matching task (PMT), was to see what interpretation the participants would provide when
faced with a sentence with the OPC and given the freedom to choose between two pictures that depicted two different interpretation possibilities. It is hypothesized that due to the design of the first task (SST), participants will respond more accurately (in comparison to the PMT) in choosing the expected response between the two sentences provided. If this bears to be true, this will show that these heritage speakers still maintain access to the interpretative possibilities in their heritage language, specifically in constructions constrained by the OPC. Less accurate responses are expected for the PMT because this is where participants are asked to interpret a sentence and show their interpretation by choosing between two pictures.

Knowing the goals of the tasks, I would now like to turn to my research questions. Previous work on the OPC has shown that the NSP is accessible to second language learners and they in turn are capable of recognizing the interpretation restrictions that are present on the embedded overt subject pronoun when its antecedent is quantified or a wh-word. Furthermore, Lipski (1996) and Montrul (2004) have found that although the Null Subject Parameter has remained intact in heritage speakers, they tend to overproduce the overt subject and use the null subject in illicit environments. Knowing that the grammars of heritage speakers and L2 learners overlap and based on the results of Lipski (1996) and Montrul (2004), I want to know what the state of the heritage language grammar is at the level of the syntax-semantics interface where dominant language transfer is a high possibility. Specifically, I aim to find out if heritage speakers will demonstrate transfer in their interpretation of overt pronouns, which may in turn affect how overt pronouns are interpreted at the level of the OPC. Because it has been reported by Lipski (1996) that his transitional bilinguals have produced sentences that contain OPC elements but the interpretation they provided to the overt subject pronouns is what is allowed in English
and not in Spanish, I expect my lower proficiency speakers to have less clear intuitions within this constraint. Since both Lipski (1996) and Montrul (2004) found that their heritage speakers over-produce the overt subject pronoun, it is valid to ask if this complex interpretative component of the heritage language will be maintained without any interference from English (the dominant language).

It is hypothesized that if heritage speakers demonstrate a contrast in their interpretation of the pronounced subject pronoun, indicating that it cannot refer (or be bound) to the quantified antecedent then transfer will not be observed. However, if heritage speakers do not demonstrate a contrast in their interpretation of the pronounced subject pronoun, indicating that it can refer (or be bound) to the quantified antecedent, then transfer from the dominant language will be observed.

Finally, I wanted to know if all types of quantified antecedents (including *wh*-words) would be treated equally by both monolingual and heritage speakers. All previous experimental work done on the OPC (as discussed in Chapter 3) has aimed to find if second language learners could acquire this constraint since it does not exist in their L1. However, as far as I know no work has looked at the types of quantified antecedents to see if they are all treated equally within the constraint, and if there are those that cause more interpretative problems than others. An analysis will be done of how all participants responded to all antecedent types in order to see if there is a statistically significant difference between the types of quantifiers used in both tasks.

It is hypothesized that all quantified and *wh*-word antecedents should be treated equally. Montaletti (1984) in his dissertation makes no mention of the semantic differences that could be found in the quantified antecedents themselves. He does state that the contrast found in his main examples can also be extended to different quantifiers
Based on Montalbetti (1984) and on the fact that no attention has been given on this topic in the previous works mentioned in Chapter 3 (Kanno, 1997; Pérez-Leroux & Glass, 1997; Gürel, 2003; Rothman & Iverson, 2007a), it is expected that there will be no difference in how different quantified antecedents are treated.

4.2 Participants

4.2.1 Spanish Participants

This study consisted of four participant groups: 20 monolingual Spanish speakers, 20 Spanish heritage speakers, 20 monolingual Polish speakers and 20 Polish heritage speakers. Starting with the Spanish speakers, testing of the monolinguals took place in Madrid, Spain. Eleven were female and nine were male. Age of participants ranged from 19 to 40 with an average age of 29 years old at the time of testing. In order to be qualified to participate in this experiment participants were to be monolinguals with no extensive knowledge of any other language, especially English. Eleven out of the twenty participants stated that they have limited knowledge of other languages such as English or another Romance language such as Italian, Portuguese, or French, but only four had lived outside of Spain from two to four months. Two participants stated that they had lived in London, England for two and three months, while two others lived in France for four months. Although other participants may have had minimal knowledge of English, it is assumed that such knowledge (or that learned over a period of 2-4 months abroad) would not affect native speaker interpretations of sentences that were constrained by the OPC. Participants range in education level, while a few were still in university other
professions include personal assistant, lawyer, manager, electrician, engineer, interior designer, actor, photographer, among others. All information was collected using a background questionnaire.

Testing of the Spanish heritage speakers took place in Ontario, Canada. Inclusion in the experiment was based on the participants’ age of arrival to Canada. It was pertinent that all heritage speakers were either born in Canada or had moved here before the age of five. I did not accept anyone who had left their country of origin any later than five years old because as mentioned earlier in Section 1.5 on the Critical Period, that is when children no longer use procedural memory to acquire language and rely on declarative memory (Paradis, 2009). All participants were literate in Spanish. This was established by asking the participants about their reading and writing skills in their heritage language (for both Spanish and Polish heritage speakers). Of the twenty participants in this group, four were male and sixteen were female. The ages of the participants range from 18 to 32 with an average age of 22.5 at the time of testing. Fifteen participants were born in Canada; three were born in El Salvador and two in Mexico. The average age of arrival of those who were not born in Canada is 3 years old ranging between 5 months and 5 years old. Every single person stated that they started learning Spanish from birth. Five stated that they also started to learn English from birth; they were born in Canada. The average age of acquisition of English (not including those who stated that they were simultaneous bilinguals) is 3 years old, ranging from 2 to 5 years old. When self-assessing their language abilities in Spanish (out of 5) the average was 3.9 ranging from 3 to 5. When rating themselves on the same self-assessment for their English abilities, all participants but one chose “5” indicating that they are native speakers of English. The one participant chose “4” for both self-assessments in
Spanish and English, even though this person was born in Canada. Thirteen participants stated that they have stayed in a Spanish-speaking country for an extended period of time, ranging from two to 24 weeks with an average of 6.6 weeks. Participants range in education level; while the majority were university students, other professions include elementary school teacher, settlement worker, articler in an acquisition firm, housing coordinator, and massage therapist. All information was collected using a background questionnaire. Table 8 below shows background information for both Spanish and Polish heritage speakers in this study.

4.2.2 Polish Participants

The Polish monolingual speakers were all tested in Poland near Wroclaw. The average age in this participant group is 31 years old, ranging from 19 to 58. There were 10 females and 10 males. It was important that the participants were not Polish-English bilinguals having spent a significant amount of time living outside of Poland in order to maintain strong Polish intuitions. Ten participants stated that they have had contact with other languages: two with Russian and eight with English. Only one participant had spent time in an English speaking country, stating that she spent 3 months in Canada but had minimal contact with English speakers because she was visiting family. Crucially, this was not a typical immersion trip and for the work presented here, 3 months is not considered long enough to skew syntactic intuitions. The rest of the participants who had indicated that they knew English had started learning it in school between ages 12 and 16. When self-assessing their language abilities in English they all stated that they were at an
intermediate level in writing and speaking, except for one person who stated that he was at a beginners level. Eight of the participants were students in university. The rest of the professions included an economist, a chemist, a few seamstresses, a building technician, a few contractors, a store supervisor, and a health and safety advisor for the workplace. All information was collected using a background questionnaire.

Testing of the Polish heritage speakers took place in Ontario, Canada. The average age was 20, ranging from 18 to 26 years old. There were four were males and sixteen females. Inclusion in the experiment was the same as the Hispanic heritage speakers. It was based on the participants’ age of arrival to Canada. It was pertinent that all heritage speakers were either born in Canada or had moved here before the age of five for the same reasons listed above in Section 1.5. All participants were literate in Polish. Fifteen participants were born in Canada, four were born in Poland, and one was born in Greece. Of those born in Poland, one immigrated to Canada when she was 5 years old, one immigrated when he was 2 years old, one immigrated at the age of 1 year, and finally one immigrated when she was one month old. The participant who emigrated from Greece was 2 years old. In this case, both parents speak Polish and are of Polish descent. All participants indicated that they started learning Polish from birth. Three participants indicated that they also started to learn English at birth; those were two participants who were born in Canada and the one who immigrated at one month. The rest of the participants range between ages 3 and 5.5. When self-assessing their language abilities in Polish (out of 5), using the same scale that the Spanish heritage speakers used, the average was 3.9, ranging from 2 to 5. On the same self-assessment for their English abilities, everyone chose “5” indicating that they are native speakers of English. Six participants stated that they have never been to Poland for an extended period of time.
The rest stated that they have stayed in Poland for an extended period of time, ranging from 4 to 40 weeks with an average of 11.8 weeks. All but two participants were undergraduate students at the local university. The other two were graduate students in comparative literature and economics. All information was collected using a background questionnaire. Table 8 below shows all background information for all Spanish and Polish heritage speakers tested in this study based on the descriptions provided above.

Table 8. Summary of background information for Spanish and Polish heritage speakers

<table>
<thead>
<tr>
<th>PARTICIPANTS</th>
<th>DEMOGRAPHICS</th>
<th>RESPONSES</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>SPANISH</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SEX m/f</td>
<td></td>
<td>4/16</td>
</tr>
<tr>
<td>AVG. AGE AT TEST</td>
<td></td>
<td>22.5</td>
</tr>
<tr>
<td>PLACE OF BIRTH</td>
<td></td>
<td>15-Canada; 3-El Salvador; 2-Mexico</td>
</tr>
<tr>
<td>AVG. ARRIVAL IN CANADA</td>
<td></td>
<td>3 years old</td>
</tr>
<tr>
<td>SPA FROM 0</td>
<td></td>
<td>20</td>
</tr>
<tr>
<td>ENG FROM 0</td>
<td></td>
<td>5</td>
</tr>
<tr>
<td>AVG. SPA SELF-RATE</td>
<td></td>
<td>3.9</td>
</tr>
<tr>
<td>AVG. ENG SELF-RATE</td>
<td></td>
<td>5</td>
</tr>
<tr>
<td># VISITED SPA-COUNTRY</td>
<td></td>
<td>13</td>
</tr>
<tr>
<td>AVG. # WEEKS</td>
<td></td>
<td>6.6</td>
</tr>
<tr>
<td><strong>POLISH</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SEX m/f</td>
<td></td>
<td>4m/16f</td>
</tr>
<tr>
<td>AVG. AGE AT TEST</td>
<td></td>
<td>20</td>
</tr>
<tr>
<td>PLACE OF BIRTH</td>
<td></td>
<td>15-Canada; 4-Poland; 1-Greece</td>
</tr>
<tr>
<td>AVG. ARRIVAL IN CANADA</td>
<td></td>
<td>2 years old</td>
</tr>
</tbody>
</table>
4.3 Proficiency

A third task, an Oral Production Task, was administered at the end of the experiment. The purpose of this task was to have naturalistic oral data in order to be able to conduct a proficiency analysis. In this task, participants were asked to watch a 2-minute clip of the television series “Friends” in Spanish (for the Spanish heritage speakers) or Polish (for the Polish heritage speakers) and then explain what happened in that scene. Participants were allowed to watch the clip as many times as they wanted because memory was not a factor in this study. It was instructed to the participants that they were to explain the scene using as many details as possible. The scene included all five main characters from the TV series sitting at “Central Perk”, a popular coffee house on the show. This scene was chosen because all of the main characters (male and female) were present and they were all engaging in a conversation. The presence of all six characters in the scene allowed the participants to use a variety of different subject pronouns.

For the analysis of the oral task, two native speakers of both languages were used as language judges. Both of the Spanish language judges were linguists, while one of the Polish language judges was a linguist and the other was a nurse with little linguistic
knowledge. These judges were provided with a guideline on which aspects of language they should be paying attention to when providing their ratings. They were asked to provide an evaluation for each speaker on their pronunciation, vocabulary use, morphology, syntax, as well as a general opinion (See Appendix E). They provided their ratings on a scale of 1-5, where “1” indicated that the speaker sounded completely foreign, and “5” indicated that the speaker sounded native. The judges listened to the recordings once, indicating their response for each linguistic aspect on an answer sheet, and then listened to the recordings a second time providing their judgments one more time. Both sets of numbers were handed to me and I entered the raw data on Excel and then calculated an average for each participant.

This type of proficiency measure was used instead of a standardized written grammar test because heritage speakers are oral/aural language learners (in the home) and in most cases they are not literate in the heritage language, nor are they aware of it metalinguistically. By asking them to tell a story, or explain what happened in a scene (like in this study), heritage speakers are free to speak using language that they are comfortable with and linguistic constructions that they are familiar with. Afterwards, two native speakers of the baseline language listened and applied their ratings to the recordings, providing a way of qualifying the language of the heritage speakers. This type of analysis was previously used in White & Genesee (1996) as well as in Bruhn de Garavito (2011) to evaluate nativeness.

The mean for each participant was calculated based on the ratings provided by the native speaker judges. Looking at Spanish heritage speakers, on a scale of 1-5 participant ratings ranged from 1.85 to 4.96, with an average of 3.33. The ratings for Polish heritage speakers ranged from 3 to 5 with an average of 4.28. Using ReCal2 an intercoder
reliability analysis was done, which assesses intercoder agreement in terms of rating the participants. The analysis of the two judges of Spanish resulted in a KALPHA value of 0.744. The analysis of the two judges of Polish resulted in a KALPHA value of 0.768. It is possible that the values for both languages is lower than the accepted value of 0.8 because on an individual level they may have had different ideas of what a native speaker should sound like. It is interesting that the Polish language group has a higher intercoder reliability rate than the Spanish language group, given that the Spanish language judges were both linguists with the same linguistic background. Table 9 below shows the division of participants according to proficiency scores.

<table>
<thead>
<tr>
<th>PARTICIPANTS</th>
<th># ADVANCED</th>
<th># INTERMEDIATE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Spanish</td>
<td>8</td>
<td>12</td>
</tr>
<tr>
<td>Polish</td>
<td>13</td>
<td>7</td>
</tr>
</tbody>
</table>

Table 9 above shows that in the Spanish heritage language speaker group there are 8 advanced speakers and 12 intermediate speakers. In the Polish heritage language speaker group there are 12 advanced and 7 intermediate speakers. Polish heritage speakers were grouped as advanced speakers if they scored at least 4 out of 5 on their proficiency rating. Spanish heritage speakers were grouped as advanced if they scored at least 3.5 out of 5 on their proficiency rating. Any speaker who scored below 4 (Polish) or 3.5 (Spanish) was grouped as an intermediate speaker.
4.4 Experimental tasks

All participants, monolinguals and heritage speakers, were asked to complete two experimental tasks. The first task was a sentence selection task (SST) and the second was a picture-matching task (PMT). The sentence selection task tested the interpretation of a target bound reading (with the presence of a null subordinate subject) with quantified and *wh*-word antecedents, while the picture-matching task tested the interpretation of bound and unbound readings (with the presence of both null and overt subordinate subjects) with quantified and *wh*-word antecedents. Both experimental tasks controlled for the type and occurrence of antecedents present in each token. The two tasks were multiple-choice and there were both Spanish and Polish versions of the tasks.

4.4.1 Task 1: Sentence Selection Task

In this experiment, participants read a context in Spanish and were then instructed to choose an appropriate concluding sentence between sentence (a), (b), or (both). Participants were choosing between embedded clause sentences that included a null or overt subordinate subject and included a specific quantified or *wh*-word antecedent. The context purposefully forced a bound reading between the embedded subject and the antecedent, thus requiring the participants to recognize that the preferred option was the sentence choice that included the null subject in the subordinate clause.

The task consisted of 56 tokens in total, 32 target scenarios and 24 distractors. Six different types of antecedents were tested with four tokens per antecedent type. Furthermore, the task contained eight referential antecedent tokens in order to determine
the participants’ interpretive preferences on antecedents not constrained by the OPC. Table 10 below describes the types and quantities of antecedents found in both experimental tasks. The following are examples of Spanish and Polish tokens found in the SST. Please see Appendix A for the complete version of the Spanish copy and Appendix B for the complete version of the Polish copy.

**Quantified Antecedent (Spanish)**

Examples (6)/(6’) and (7)/(7’) illustrate the forced bound context in the SST.

(6) Un grupo de amigos siempre sale a bailar los fines de semana. Toman por lo menos 5 cervezas.

* A group of friends always goes out dancing over the weekend. (They) drink at least 5 beers.*

a) Nadie cree que él toma demasiado.

* No one believes that he drinks too much.*

b) Nadie cree que pro toma demasiado.

* No one believes that Ø drinks too much.*

c) (a) y/and (b)

Target response: b
In examples (6)/(6’) with the quantified antecedent, the participants are expected to choose answer (b), where the null subject is bound to the quantified antecedent, showing the interpretation that no one within the group of friends thinks that they drink too much. Based purely on the context provided, selecting (a) is not an option because the context only provides a group reading.

Quantified Antecedent (Polish)

(6’) Grupa kolegów chodzi na tani ce w ka dy weekend. Pij przynajmniej pięć piw.

A group of friends goes out dancing every weekend. (They) drink at least 5 beers.

a) Nikt nie wierzy, e on za du o pije.

No one believes that he drinks too much.

b) Nikt nie wierzy, e pro za du o pije.

No one believes that Ø drinks too much.

c) (a) i/and (b)

Target response: b

Wh-word Antecedent (Spanish)
(7) Los amigos pasaron toda la semana estudiando para el examen. Antes del examen se preguntan:

_The students spent the entire week studying for the exam. Before the exam they ask each other:_

a) ¿Quién cree que pro aprobará el examen?

_Who thinks that Ø will pass the exam?_

b) ¿Quién piensa que él aprobará el examen?

_Who thinks that he will pass the exam?_

c) (a) y/and (b)

Target response: a

Similarly, the context in the following examples (7)/(7’) with the wh-word antecedent forces a bound reading with the null subject. Here it is expected that the participants choose (a). Since the students as a group spent the week studying, they ask each other who thinks that he will pass the exam, noting that one individual was not singled out in the context. For this reason, the question can only refer to the group.

_Wh-word Antecedent (Polish)_

(7’) Przyjaciele sp dzili cały weekend ucz c si na egzamin. Przed egzaminem pytaj si :
Friends spent the entire weekend studying for the exam. Before the exam they ask each other:

a) Kto my e pro zaliczy egzamin?

*Who thinks that Ø will pass the exam?*

b) Kto my li e on zaliczy egzamin?

*Who thinks that he will pass the exam?*

c) (a) i/and (b)

Target response: a

**Referential Antecedent (Spanish)**

(8) Juan siempre hace mil cosas a la vez y siempre está al teléfono.

*John is always doing a million things at the same time and is always on the phone.*

a) Juan cruza la calle mientras él habla por el teléfono.

*John is crossing the street while he is talking on the phone.*

b) Juan cruza la calle mientras pro habla por el teléfono.

*John is crossing the street while Ø is talking on the phone.*

c) (a) y/and (b)
Finally, examples (8)/(8’) show a sample of a referential antecedent. Here, there is no “right or wrong” answer but rather a preference. Within a dialogue, it is more natural to omit the subject of the sentence once it has already been established. With this in mind, it is preferred to omit the subject of the subordinate clause, as in answer (b).

Referential Antecedent (Polish)

(8’) Jan zawsze robi tysi ć rzeczy na raz i zawsze wisi na telefonie. 

\textit{John is always doing a million things at the same time and is always on the phone.}

a) Jan przechodzi przez ulice podczas gdy on rozmawia przez telefon. 

\textit{John is crossing the street while he is talking on the phone.}

b) Jan przechodzi przez ulice podczas gdy \textit{pro} rozmawia przez telefon. 

\textit{John is crossing the street while Ø is talking on the phone.}

c) (a) \textit{and} (b)

Target response: b
4.4.2 Task 2: Picture Matching Task

The purpose of this task was to test for the participants’ interpretation of null and overt pronouns with quantified and wh-word antecedents in strictly controlled contexts. In this experiment, participants read a context in Spanish followed by a set of two pictures, and a concluding sentence. Based on the concluding sentence, the participants were instructed to choose a picture (A or B) as the correct depiction of the whole scenario. In this task, the participants were choosing between bound and unbound readings with quantified, wh-word, and referential antecedents with the presence of both null and overt pronouns in the subordinate clause.

The task consisted of 78 pairs of pictures (or scenarios) in total, where 14 were distractors. Six different types of antecedents were tested with eight tokens per antecedent type. Furthermore, there were 16 tokens of referential antecedents in order to see how participants reacted to antecedents that do no fall within the OPC. Table 10 below provides the types and quantities of antecedents found in both experimental tasks. Below are examples of Spanish and Polish tokens found in the picture matching task. Please see Appendix C for a complete version of the Spanish copy and Appendix D for a complete version of the Polish copy.

Table 10 lays out all of the antecedent types that were tested in both the sentence selection task and the picture matching task. The PMT was twice as long and for that reason it has double the amount of tokens found in the SST.

<table>
<thead>
<tr>
<th>Table 10. Antecedent types in both tasks</th>
</tr>
</thead>
<tbody>
<tr>
<td>ANTECEDENT TYPES</td>
</tr>
<tr>
<td>English</td>
</tr>
<tr>
<td>------------------</td>
</tr>
<tr>
<td>No one</td>
</tr>
<tr>
<td>Most of</td>
</tr>
<tr>
<td>Many</td>
</tr>
<tr>
<td>Everyone</td>
</tr>
<tr>
<td>Who (sg.)</td>
</tr>
<tr>
<td>Who (pl.)</td>
</tr>
<tr>
<td>Referential antecedents</td>
</tr>
</tbody>
</table>

**Quantified antecedent**

Examples (1)/(1’) through (4)/(4’) illustrate bound and unbound contexts (for each type of pronoun) in the PMT.

**Overt subject in subordinate clause**

Spanish:

(1) Los primos están en un restaurante. Ya han cenado.

_The cousins are in a restaurant. They already had dinner._

Polish:

(1’) Kuzyni s w restauracji. Ju zjedli objad.

_The cousins are in a restaurant. They already had dinner._
Spanish:

Nadie sabe si él prefiere té o café.

*No one knows if he prefers tea or coffee.*

Polish:

Nikt nie wie czy on woli herbat czy kaw.

*No one knows if he prefers tea or coffee.*

Target response: B

In the first example (1) (1’ for the Polish example) there is a quantified antecedent and an overt subject in the subordinate clause. Here, the participants are expected to choose picture (B), where the overt subject is not bound to the quantified antecedent, showing
the interpretation that no one within the pair of friends knows if their one friend prefers to order tea or coffee. All pictures were adjusted to reflect the language being tested. For example, for the Polish participants, they saw pictures that included Polish dialogues or comments.

Quantified antecedent

Null subject in subordinate clause

Spanish:

(2) Los empleados están esperando las noticias.

*The employees are waiting to hear the news.*

Polish:

(2’) Pracownicy czekają na wiadomości.

*The employees are waiting to hear the news.*

(In the picture: *Sala de Juntas* = ‘conference/meeting room’)

Spanish:

La mayoría de la compañía sabe que recibirá un ascenso.

*The majority of the company knows that (they) will receive a raise.*

Polish:

Większość pracowników wie że otrzyma awans.

*The majority of the workers know that (they) will receive a raise.*

Target response: A

Next, the contexts in following examples (2)/(2’) contain a null subject and the quantified antecedent. The presence of a null subject pronoun in the subordinate clause allows for the sentences to be ambiguous and thus permitting two readings: the null pronoun may be bound to the quantified antecedent indicating that the majority of the company will receive a raise, or it may be disjoint and refer to a third person (‘the majority of the company knows that someone specific will receive a raise’). Because there is no restriction between a null subject pronoun and a quantified antecedent, the response is based purely on preference. With that being said, the more natural preference is for a bound reading, having the participants choose picture (A). In this picture several people
are thinking that they themselves will receive a raise. On the other hand in picture (B), several people are thinking that one specific person will receive a raise. It is the role of the introductory sentence combined with the pictures to provide an accurate context for the OPC.

**Wh-word antecedent**

**Overt subject in subordinate clause**

Spanish:

(3) Los estudiantes escribieron un examen ayer en la clase de francés.

*The students wrote an exam yesterday in French class.*

Polish:

(3’) Studenci napisali egzamin wczoraj z francuskiego.

*The students wrote an exam yesterday in French class.*

(In picture (A): Examen = ‘exam’; Yo no estudié suficiente = ‘I didn’t study enough’; Yo tampoco = ‘Me either’; Yo sí = ‘I did’. Picture (B): Examen = ‘exam’; Ellos no estudiaron = ‘They didn’t study’)}
Spanish:

¿Quiénes creen que ellos no estudiaron suficiente para el examen?

Who believes that they did not study enough for the exam?

Polish:

Którzy myślą, że oni nie uczyli się wystarczająco na egzamin?

Who believes that they did not study enough for the exam?

Target response: B

Examples (3)/(3’) are an example of a wh-word antecedent with the overt subject in the subordinate clause. The participants are expected to choose picture (B) as the correct answer since the overt subject in the subordinate clause cannot be bound to the wh-word antecedent and the picture gives the interpretation of two people talking about another group (of students) who did not study enough. Picture (A) depicts students talking about themselves as those who did not study enough, which would require a null subject to be present in the subordinate clause.
Wh-word antecedent

Null subject in subordinate clause

Spanish:

(4) Los amigos están discutiendo la posibilidad de ir a México.

The friends are discussing the possibility of going to Mexico.

Polish:

(4’) Przyjaciele dyskutują nad możliwością wycieczki do Meksyku.

The friends are discussing the possibility of going to Mexico.

Spanish:

¿Quién cree que se irá a México?

Who believes that (he) will go to Mexico?
Polish:

Kto sądzi, że pojedzie do Meksyku?

*Who believes that (he) will go to Mexico?*

Target response: A

Next, (4)/(4’) show a *wh*-word antecedent token with a null subject in the subordinate clause. The preferred answer is picture (A) for the same reason stated above for examples (2)/(2’). The null subject in the subordinate clause allows for an ambiguous reading, however there is a stronger preference to bind the null pronoun to the *wh*-word antecedent. In this case, everyone is thinking about going to Mexico and not just one person. In order to be able to choose picture (B) the sentence would have to have an overt subject in the subordinate clause. This would allow for a reading where the one person is thinking that he himself will be going to Mexico.

**Referential antecedent**

Spanish:

(5) En el baño…

*In the bathroom…*

Polish:

(5’) W łazience…
In the bathroom...

Spanish:
María se mira por el espejo mientras ella se lava los dientes.

*Maria looks at herself in the mirror while she brushes her teeth.*

Polish:
Marta patrzy w lustro podczas gdy ona myje z by.

*Maria looks at herself in the mirror while she brushes her teeth.*

Target response: A

Finally, just like in the SST, examples (5)/(5’) are of referential antecedents and they show what type of referential antecedents all participants were asked to judge. Here, there is no “right or wrong” answer but rather a preference. These tokens shows that it is
preferred to omit the subject of the subordinate clause once it has already been mentioned therefore the expected answer is picture (A), although picture (B) is also acceptable when more context is provided.

### 4.5 Testing Protocol

In both Poland and Spain participants were recruited through family and friends who were living there at the time. All participants were tested individually in a quiet room. They were informed that the study would take approximately an hour and a half and that it consisted of two multiple choice tasks, which looked at their natural intuitions in their native language. They were given a letter of information that notified them that there were no known risks involved in participating, they were free to stop participating at any time, and if they had any questions afterwards they had my email along with my supervisor’s.

After signing a consent form, all participants were asked to fill out a background questionnaire, which asked about previous language knowledge and use. The first experimental task that they were given was the Sentence Selection task. The SST was given first because it required that the participants pay attention to the context to be able to choose the correct option ((a), (b), or (c)). Next, participants were asked to complete the Picture Matching task. This task required that participants interpret the pictures according to the contexts provided. Both SST and PMT were provided through PowerPoint where participants were asked to read the slides and then mark their response on an answer sheet (pen and paper).
The Oral Production task, which was used as a proficiency test was shown last. It was brief ranging from 5 to 10 minutes to complete depending on how many times the participant chose to see the clip. As previously mentioned, participants were free to watch the 2min. clip as many times as they wanted to in order to feel that they knew what was going on in the scene and they were able to explain it to me in their heritage language.

All testing of heritage speakers was also done individually and in a quiet room. Three of the Spanish heritage speakers were tested via Skype because they lived in a different city. Video chat was used and I sat with the participant through the entire testing session. All heritage speakers were given the same set of instructions at the monolinguals, which were provided in their heritage language. Their background questionnaire was a bit more extensive because it was assumed that they use both their heritage language and English in different contexts and it was important to see when they started to learn each language and how they rated themselves in each language.

At the end of each testing session if a participant wanted to know what I was looking at specifically they would be fully informed of the aims of the study. Prior to testing ethics approval was received (Appendix F).
Chapter 5

5 Results: Description

The main goal of this section is to present the empirical data collected in both the Sentence Selection Task (SST) and the Picture Matching Task (PMT) by monolingual and heritage speakers of Spanish and Polish. Data are given at the group and individual levels for both tasks. Results are provided first for Spanish monolinguals, followed by Spanish Heritage speakers, Polish monolinguals and Polish heritage speakers. A comparison between all groups is provided at the end of this section.

5.1 Test 1: Sentence Selection Task

As described in Section 4.1 the purpose of the SST was to test for the participants’ interpretation of null and overt subject pronouns in an embedded clause with strictly controlled quantified and wh-word antecedents. Participants were provided with a context and were asked to choose a logical concluding sentence for that context, choosing between three options. The context purposefully forced a bound reading between the embedded subject and the antecedent, thus requiring the participants to recognize that the preferred option was the sentence choice that included the null subject in the subordinate clause.

There were a total of 32 target scenarios, where four quantified antecedents and two wh-word antecedents were tested, with four tokens per antecedent type.
Additionally, there were eight tokens of referential antecedents in order to determine participants’ interpretative preferences on antecedents not constrained by the Overt Pronoun Constraint (OPC). These antecedents were common names. In the following sections, results will be provided for this task of both monolingual and heritage speaker groups of Spanish and Polish.

5.1.1 Spanish Monolinguals

As mentioned in Section 5.1, the context in each target scenario was manipulated in such a way that participants were expected to choose a concluding sentence with a null pronoun. Figure 1 displays the overall results for the monolingual Spanish participant group. The results in this figure are grouped according to antecedent type (quantified, wh-word, and referential) to show how this group performed overall and which sentence they chose as their concluding sentence (containing which type of pronoun: null, overt, or both). Because the only acceptable answer was to choose the sentence with a null pronoun, the other two options were grouped together as one (overt/both) since both options are rendered as inadequate. Based on this figure, participants chose the null option most frequently with referential antecedents (common names) at a rate of 89%, and they chose the sentence with the null pronoun with quantified and wh-word antecedents 75% and 74% respectively.
A paired samples $t$-test was done comparing the means of the null and overt pronouns for each antecedent type: Quantified, WH-word, and Referential. It is important to note here that within the analysis for the SST the “overt” option also includes the results for choosing “both” as their option. These two means are grouped together because they are both considered to be the incorrect or unexpected response for the contexts provided. The results show the difference in pronoun choice in the SST is significant for all antecedent types: Quantified ($M = .431, SE = .081, t(19) = 5.334, p < .001$); WH-word ($M = .475, SE = .078, t(19) = 6.024, p < .001$); Referential ($M = .762, SE = .102, t(19) = 7.494, p < .001$). These results indicate that when being forced to choose the null subject, they understood the difference in interpretation between the two pronoun types.

A one-way repeated-measures ANOVA was calculated to look at the difference between the three antecedent types (Quantified, WH-word, Referential) in responding with a null subject pronoun and the results show that the type of quantifier had a
significant effect, $F(2, 38) = 6.816, p = .003$. Tests of a within-subjects contrast show that the difference in responses between the quantified antecedents and the referential antecedents is significant, $F(1, 19) = 12.55, p = .002$. A Bonferroni post hoc test showed that the difference between quantified and referential antecedents is significant, $p < .05$ as well as between WH-word and referential antecedents, $p < .05$. There is no significant difference between quantified and WH-word antecedents, $p > .05$.

In Figure 2, the groups of antecedents (as show in Figure 1) are separated in the specific six quantifiers that were used throughout this task. Also the group of referential quantifiers is present here again. Because this group consists of common names, it will not be divided per token. Instead it will in all future figures appear as one individual entity. Figure 2 shows that again, participants chose the null option most frequently with referential antecedents at a rate of 89%, quién at 81%, la mayoría de at 79%, nadie at 78%, followed by todos at 69%, quiénes at 66%, and finally muchos at 61%.

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**Figure 2. Monolingual Spanish choice of null or overt subject based on specific quantifiers**
A paired sample $t$-test was done in order to compare the means of the null and overt pronouns for each quantifier used in this task. All contrasts appear to be significant, except for the *muchos* antecedent, where the difference between the two pronouns is not significant ($M = .225, SE = .123, t(19) = 1.831, p = .083$). The rest of the contrasts are significant, $p < .01$.

A one-way repeated-measures ANOVA was calculated to look at the difference between the seven antecedent types used in this study in responding with a null subject pronoun and the results show that the type of quantifier had a significant effect, $F(6, 114) = 4.24, p = .001$. Tests of a within-subjects contrast show that there is a significant difference between singular *quién* and plural *quiénés*, $F(1, 19) = 7.28, p < .05$, as well as between *quiénés* plural and referential antecedents, $F(1, 19) = 10.8, p < .05$. A pairwise comparison shows that there is a significant difference between *nadie* and referential antecedents, $p < .05$. No other contrast displayed a significant difference.

Moreover, the quantifiers were grouped into Quantifier Types as discussed in Chapter 2. It was discussed in greater detail in Chapter 2 that according to Beghelli and Stowell (1996) all quantifiers fall within a specific type that has its own syntactic position as explained in their “Checking Theory”. The three types that are found in this study are the Negative QP, Group QP, and Wh QP. When working with a negative quantifier phrase, Spanish monolinguals choose the correct null subject at a rate of 79%. The Wh-phrase quantifiers are chosen correctly at a rate of 73.5% and the group quantifier phrases scored closely at 69.6%.

A one-way repeated-measures ANOVA was used to calculate the significance of the quantifier type looking specifically at Spanish monolinguals. The results show that
the quantifier type is not significant within the language group of the Spanish monolinguals, $F(2, 38) = .832, p > .05$, this result indicates that the Spanish monolinguals do not discriminate between the quantifier-types in how they responded to the SST.

### 5.1.2 Spanish Heritage Speakers

Just as in the previous sections that discussed Spanish and Polish monolingual results, this section aims to report on how the Spanish heritage speakers responded in the SST when the context in each target scenario was manipulated in such a way that participants were expected to choose a concluding sentence with a null pronoun. Figure 3 displays the overall results for the Spanish heritage speaker group. Again, the results in this figure are grouped according to antecedent type (quantified, *wh*-word, and referential) to show how this group performed overall and which sentence they chose as their concluding sentence (containing which type of pronoun: null, overt, or both). Because the only acceptable answer was to choose the sentence with a null pronoun, the other two options were grouped together as one (overt/both) as both of these options are rendered as inadequate. Unlike previous results, Figure 3 shows that this group of participants chose the null option very similarly across the board. However the quantified antecedents provided a slightly higher null pronoun response at a rate of 59%. Moreover, they responded at a rate of 58% with both *wh*-word and referential antecedent types.
A paired samples *t*-test was used to compare the means of the null and overt subjects for each antecedent type when responding to the SST. The results of the *t*-test show that even though Spanish heritage speakers appear to be responding more appropriately in choosing the null pronoun, there is no significant difference in the two pronoun choices: Quantified (*M* = .168, *SE* = .083, *t*(19) = 2.030, *p* > .05); WH-word (*M* = .162, *SE* = .121, *t*(19) = 1.347, *p* > .05); Referential (*M* = .163, *SE* = .131, *t*(19) = 1.239, *p* > .05).

A one-way repeated-measures ANOVA was calculated and the results show that the type of antecedent did not have a significant effect, *F*(2, 38) = .008, *p* = .992.

In Figure 4, the groups of antecedents (as show in Figure 3) are separated in the specific six quantifiers that were used throughout this task, plus the group of referential quantifiers is present here again. Figure 4 below shows that participants chose the null option most frequently with quantified antecedent *la mayoría de* at a rate of 71%, next it
was with *nadie* at 68%, singular *quién* at 60%, the referentials at 58%, plural *quién*es at 56%, *todos* at 53%, and finally *muchos* at a low 46%.

**Figure 4. Heritage Spanish choice of null or overt subject based on specific quantifiers**

A paired sample *t*-test was used to compare the means of the null and overt pronouns in the SST. Results show that there is a significant difference in antecedents *nadie* (*M* = .350, *SE* = .115, *t*(19) = 3.036, *p* < .01) and for *la mayoría de* (*M* = .350, *SE* = .117, *t*(19) = 2.999, *p* < .01). The rest of the contrasts between overt and null pronouns are not significant (*p* > .05).

A one-way repeated-measures ANOVA was calculated and the results show that the type of quantifier did not have a significant effect, *F*(6, 114) = 1.64, *p* > .05. These results indicate that this speaker group treats all antecedents equally.

Again, here the quantifiers were grouped into Quantifier Types. It was found that when working with a negative quantifier phrase, Spanish heritage speakers choose the
correct null subject at a rate of 68%. The Wh-phrase quantifiers are chosen correctly at a rate of 58% and the group quantifier phrases scored closely at 56%.

A one-way repeated-measures ANOVA was used to calculate the significance of the quantifier type looking specifically at Spanish heritage speakers. The results show that the quantifier type is not significant within the language group of the Spanish heritage speakers, $F(2, 38) = 2.47, p > .05$. Once again, these results show that the quantifier-type does not influence the way the speakers interpret the overt pronoun.

5.1.3 Spanish Monolinguals and Heritage Compared

A comparison was done between the Spanish monolinguals and the Spanish heritage speakers looking at how they responded in their interpretation of the null and overt pronouns in the Sentence Selection task. The analysis is grouped into “expected” and “unexpected” answers. Because participant responses for “overt” and “both” are both considered to be “unexpected” responses for this task, they are grouped together. Figure 5 below shows that the Spanish heritage speakers appear to differ from the Spanish monolinguals in how they interpret the null pronoun and overt pronouns in the subordinate clause. The monolinguals appear to respond stronger with the referential antecedents but the heritage speakers appear to treat all of the antecedents in the same manner. For responses to the null pronoun, the Spanish monolinguals responded at a rate of 75% with the quantified antecedents and the Spanish heritage speakers responded with 59%. With the WH-word antecedents, the monolinguals responded with 74% and the heritage group responded at a rate of 58%. Finally, the monolinguals responded with 89% with the referential antecedents and the heritage speakers responded again at a rate
of 58%. For the “overt/both” response, the monolinguals responded at a rate of 25% with quantified antecedents and the heritage speakers responded with 41%. With the WH-word antecedents the monolinguals responded with 26% and the heritage speakers responded with 42%. Finally, for the referentials, the monolinguals responded at a rate of 11% and the heritage speakers responded with 42%.

![Monolingual vs. Heritage Subject Choice](image)

**Figure 5. Comparison between Spanish monolinguals and Spanish heritage speaker interpretations of null and overt pronouns in SST**

A repeated measures ANOVA was used to compare the means of the antecedents and the pronouns chosen in the SST. A within-subjects contrast, which looked at the interaction between the pronoun choice with the antecedent type, found that there is no significant effect, $F(1, 38) = .077, p > .05$. This indicates that the type of antecedent did not influence the type of pronoun used in the task. Next, a MANOVA was run to look at the
difference between the monolingual and heritage speaker groups and their choice in choosing the null and overt/both options and it found that there is a significant difference between the two speaker groups and the antecedent types ($p < .05$). Comparing heritage and monolinguals with the choice of the null subject: quantified ($F(1, 38) = 5.862, p < .05$), WH-word ($F(1, 38) = 4.699, p < .05$), referential ($F(1, 38) = 13.067, p < .001$). Comparing heritage and monolinguals with the choice of the overt subject: quantified ($F(1, 38) = 4.397, p < .05$), WH-word ($F(1, 38) = 4.699, p < .05$), referential ($F(1, 38) = 13.067, p < .001$).

5.1.4 Proficiency Comparison

The Spanish heritage speaker group was divided into those who were considered to be advanced speakers of Spanish and those who were intermediate, as per the native speaker judgments that were described in full detail in Chapter 4. A proficiency comparison was done between the monolinguals and the advanced and intermediate speakers in order to be able to compare their interpretation possibilities of the null and overt subject pronouns in contexts where they had to recognize that the sentence choice with the null subject was the correct choice. Starting with the null subject responses (expected responses), with the quantified antecedents, monolinguals responded at a rate of 75%, advanced heritage speakers at 62% and the intermediate group responded with 58%. With the WH-word antecedents, monolinguals responded with 74%, the advanced group with 66%, and the intermediate with 53%. With referentials as antecedents, the monolinguals responded with 89%, the advanced speakers responded with 62.5% and the intermediate group
responded with 52%. Moving onto the participants choosing the “overt/both” response, the monolinguals responded at a rate of 25% with quantified antecedents, while the advanced groups responded with 38% and the intermediate group with 42%. With the WH-word antecedents, the monolinguals responded with 26%, the advanced speakers with 34% and the intermediate with 47%. Finally, with the referential antecedents the monolinguals responded at a rate of 11%, the advanced heritage speakers responded at a rate of 37.5% and the intermediate group at 48%.

![Proficiency Comparison: Subject Choice in SST](image)

**Figure 6. Comparison between proficiency levels in SST**

A MANOVA was run to compare the means of all three proficiencies of their choices of null and overt/both pronouns with different antecedent types (quantified, WH-word, and referential). Results show that overall there is no significant difference between the three proficiency groups when looking at the two quantified antecedent groups that pertain to
the OPC: Quantified, \(F(2, 37) = 3.012, p > .05\); WH-word, \(F(2, 37) = 3.109, p > .05\). A Bonferroni post-hoc test was run and found that there is a significant difference between monolinguals and intermediate speakers in their treatment of null and overt subjects with referential antecedents \((p < .001)\).

5.1.5 Polish Monolinguals

Just as in Section 5.1.1, which reported on the Spanish monolingual results, this section aims to report on how the Polish monolinguals responded in the SST when the context in each target scenario was manipulated in such a way that participants were expected to choose a concluding sentence with a null pronoun. Figure 7 displays the overall results for the monolingual Polish participant group. The results in this figure are grouped according to antecedent type (quantified, wh-word, and referential) to show how this group performed overall and which sentence they chose as their concluding sentence (containing which type of pronoun: null, overt, or both). Again, since the only acceptable answer was to choose the sentence with a null pronoun, the other two options were grouped together as one (overt/both) as both of these options are rendered as inadequate.

Based on this figure, participants chose the null option most frequently with referential antecedents (common names) at a rate of 83%, and they chose the sentence with the null pronoun with wh-word and quantified antecedents at a rate of 72% and 64.75% respectively.
A paired samples $t$-test was used to compare the means of the overt and null pronouns in the SST. Results show that the difference in the choice between the two pronouns is significant: Quantified ($M = .294$, $SE = .114$, $t(19) = 2.575$, $p < .05$); WH-word ($M = .437$, $SE = .105$, $t(19) = 4.145$, $p < .01$); Referential ($M = .650$, $SE = .114$, $t(19) = 5.710$, $p < .001$). These results indicate that Polish monolinguals distinguish between the two pronoun types when responding to an OPC context.

In Figure 8, the groups of antecedents (as show in Figure 7) are separated in the specific six quantifiers that were used throughout this task. Also the group of referential quantifiers is present here again. As previously explained in Section 5.1.1, because this group consists of common names, it will not be divided per token. Instead it will in all future figures appear as one individual entity. Figure 8 below shows that participants chose the null option most frequently with referential antecedents at a rate of 83%, *które* at 75%, both *wiekności* and *którze* are at 69%, *niki* at 65%, *wiele* at 64% and finally *wszyscy* at 61%.
A paired samples $t$-test was used to compare the means of the null and overt pronouns for each antecedent used in the SST. Results show that there is no difference in pronoun use with all antecedents except for *wiele* and *wszyscy* ($p > .05$), the rest of the contrasts in pronoun choice are significant:  

- *Nikt* ($M = .300$, $SE = .128$, $t(19) = 2.349$, $p < .05$);  
- *większość* ($M = .375$, $SE = .153$, $t(19) = 2.445$, $p < .05$);  
- *kto* ($M = .500$, $SE = .096$, $t(19) = 5.210$, $p < .001$);  
- *którzy* ($M = .375$, $SE = .139$, $t(19) = 2.680$, $p < .05$);  
- referential ($M = .650$, $SE = .114$, $t(19) = 5.710$, $p < .001$). These results indicate that Polish monolinguals do not discriminate in the pronoun choice between the two antecedents *wiele* and *wszyscy* but they do with the rest of the antecedents.

A one-way repeated-measures ANOVA was calculated and the results show that in general the type of antecedent had a significant effect, $F(6, 114) = 2.346$, $p < .05$, but tests of a within-subjects contrast do not show any significant difference between the specific antecedents.
The quantifiers were also grouped into Quantifier Types when looking at the Polish monolinguals. When working with a negative quantifier phrase, Polish monolinguals choose the correct null subject at a rate of 65%. The Wh-phrase quantifiers are chosen correctly at a rate of 74.5% and the group quantifier phrases scored closely at 63%.

A one-way repeated-measures ANOVA was used to calculate the significance of the quantifier type looking specifically at Polish monolinguals. The results show that the quantifier type is not significant within the language group of the Polish monolinguals, $F(2, 38) = 1.089, p > .05$.

5.1.6 Polish Heritage Speakers

Just as in the previous sections that discussed Spanish heritage speaker results, this section aims to report on how the Polish heritage speakers responded in the SST when the context in each target scenario was manipulated in such a way that participants were expected to choose a concluding sentence with a null pronoun. Figure 9 displays the overall results for the Polish heritage speaker group. Again, the results in this figure are grouped according to antecedent type (quantified, wh-word, and referential) to show how this group performed overall and which sentence they chose as their concluding sentence (containing which type of pronoun: null, overt, or both), where “overt and both” are group together as one response. Similarly to the results discussed in Section 5.1.4 on Spanish heritage speakers, the referential antecedents were not the antecedent group that received the most null pronoun responses. In fact Figure 9 shows that this group of participants chose the null pronoun sentences the most with quantified antecedents at a
rate of 58%. Next, it was the \textit{wh}-word antecedents with 52\% and finally the referential antecedents with a low 47\%.

![Figure 9. Heritage Polish choice of null or overt subject based on grouped quantifiers](image)

A paired samples \textit{t}-test was used to compare the means of the null and overt pronouns that were chosen by the Polish heritage speakers in the SST. The expected response in this task was to choose the token sentence with the null pronoun. Results show that overall this speaker group does not differentiate between the null and overt pronouns in each antecedent type ($p > .05$).

A one-way repeated-measures ANOVA was calculated to test the significance between the quantifier types used. Mauchly’s test indicated that the assumption of sphericity has been violated ($X^2(2) = 9.83, p < .05$); therefore degrees of freedom were corrected using Greenhouse-Geisser estimates of sphericity ($\epsilon = .70$). The results show that the type of quantifier is not significant, $F(1.41, 26.75) = 1.144, p > .05$. 
In Figure 10, the groups of antecedents (as shown in Figure 9) are separated in the specific six quantifiers that were used throughout this task, in addition to showing the referential antecedents. Figure 10 below shows that participants chose the null option most frequently with quantified antecedent *większość* at a rate of 66%, next it was with *nikt* at 63%, singular *kto* at 59%, *wiele* at 56%, the referentials at 47%, and both plural *którzy* and *wszyscy* at a rate of 45%.

![Polish Heritage: Subject Choice in Subordinate Clause](image)

**Figure 10. Heritage Polish choice of null or overt subject based on specific quantifiers**

A paired samples *t*-test was used to compare the means of the null and overt pronouns for each antecedent used in the SST. Results show that the null-overt pronoun contrast is not significant for all antecedents except for *większość* (*M* = .325, *SE* = .127, *t*(19) = 2.557, *p* < .05).

A one-way repeated-measures ANOVA was calculated and the results show that the type of quantifier had a significant effect, *F*(6, 114) = 2.37, *p* < .05. However, a
pairwise comparison shows that there is no significant difference between the specific antecedents.

Once again, the quantifiers are grouped into Quantifier Types. When working with a negative quantifier phrase, Polish heritage speakers choose the correct null subject at a rate of 63%. The Wh-phrase quantifiers are chosen correctly at a rate of 52% and the group quantifier phrases scored closely at 55.6%.

A one-way repeated-measures ANOVA was used to calculate the significance of the quantifier type looking specifically at Spanish monolinguals. The results show that the quantifier type is not significant within the language group of the Spanish monolinguals, $F(2, 38) = 1.259, p > .05$.

A between-group analysis was done using a one-way ANOVA comparing responses of all four groups to how they responded overall to the SST with the three antecedent types (Quantified, WH-word, Referential). The one-way ANOVA shows that there is a significant difference between groups overall, $F(3, 76) = 4.34, p = .007$. A post hoc test was done to compare each variable against one another and found that there was no significant difference between both speaker groups of the same language (monolinguals vs. heritage speakers of Spanish/Polish), nor was there a significant difference between monolinguals of both languages or heritage speakers of both languages.

5.1.7 Polish Monolinguals and Heritage Compared

A comparison was done comparing the Polish monolinguals to the Polish heritage speakers in order to see if there was a difference in how the two groups responded to the
SST. The comparison looked at each speaker group’s correct/expected (choosing a null subject) and incorrect/unexpected responses (choosing an overt subject or choosing that “both” options are correct). Figure 11 below shows that when choosing the null subject accurately, the monolinguals responded at a rate of 63% with quantified antecedents and the heritage speakers responded with 58%. With WH-word antecedents, the monolinguals responded at a rate of 75% and the heritage speakers responded at a rate of 52%. For the referential antecedents the monolinguals responded with 83% and the heritage speakers responded at 47%. Looking at their incorrect or unexpected responses in choosing the overt subject or indicating “both”, the monolinguals responded at a rate of 37% with quantified antecedents and heritage speakers responded at a rate of 42%. With WH-word antecedents, monolinguals responded with 25% and heritage speakers responded at a rate of 48%. Finally with referential antecedents, monolinguals responded with 17% and heritage speakers with 53%. 
A MANOVA was run to compare the means of both monolingual and heritage speaker groups looking at how they responded with each antecedent type and the pronoun choice (null or overt/both). Results show that there is no significant difference between the null and overt choices with the quantified antecedents, $F(1, 38) = .806, p > .05$, but there is a significant difference between the rest of the antecedent types and the null/overt subject choice ($p < .05$).

### 5.1.8 Proficiency Comparison

The Polish heritage speaker group was separated into advanced and intermediate speaker groups. This process was fully described in Chapter 4. With two distinct heritage speaker groups, a proficiency analysis was done in order to be able to compare the difference in the interpretation possibilities with a null subject pronoun in the subordinate
clause. Starting with the expected null responses, when looking at the quantified antecedents, Figure 12 shows that the monolinguals and advanced heritage speakers responded with 63%, while the intermediate heritage speakers responded with 46%. With the WH-word antecedents, the monolinguals responded at a rate of 75%, the advanced speakers with 58%, and the intermediate with 41%. Finally, with referential antecedents, the monolinguals responded with 83%, the advanced responded with 54%, and the intermediate with 34%. Moving onto the unexpected responses in choosing the overt subject or stating that both were correct options, the monolinguals and the advanced heritage speakers responded at a rate of 37%, and the intermediate groups responded with 54%. For the WH-word antecedents, the monolinguals responded with 25%, the advanced heritage speaker group responded with 42% and the intermediate group responded with 59%. With the referential antecedents, the monolinguals responded with 17%, the advanced speakers responded at a rate of 46% and the intermediate group responded at a rate of 66%. 
Figure 12. Comparison between proficiency levels in the SST

A MANOVA was used to compare the means of the three proficiency groups among the Polish heritage speakers and the monolinguals looking at how they responded (choosing a null option vs. overt/both) with each antecedent type. Results show that there is no significant difference between the three groups and their responses to the quantified antecedent, \( F(2, 37) = 1.474, p > .05 \). There is however, a statistical difference between the three groups in how they respond to the rest of the antecedent types \( (p < .05) \). A Bonferroni post-hoc test shows that there is no significant difference between the three proficiencies with the Quantified antecedents (null and overt pronouns). Looking at the WH-word antecedents, there is a significant difference between the monolinguals and the intermediate group in their choice of null and overt pronouns in the SST \( (p < .05) \), but there is no difference between the monolinguals and the advanced speakers, nor is there a difference between the advanced and the intermediate speakers. By looking at the Referential antecedents, there is a clearer picture of the difference between the three
proficiencies: there is a significant difference between the monolinguals and the advanced speakers, \( p = .045 \), and there is also a significant difference between the monolinguals and the intermediate groups, \( p = .004 \).

5.1.9 Heritage Compared

A comparison was done between the Polish heritage speakers and the Spanish heritage speakers in order to see if there would be a difference between two heritage speaker populations and in how they chose the subject for contexts within the SST. As previously explained throughout this section, the expected response was to choose the null subject. When looking at the two heritage speaker groups, they appear to be responding very similarly across the board when choosing both subjects – null and overt. Starting with the null subject, the Spanish heritage speaker group responded at a rate of 59% with quantified antecedents and the Polish group was right there next to them at 58%. With WH-word antecedents, the Spanish heritage group responded at 58% and the Polish heritage group responded at 52%. For referential antecedents, the Spanish heritage speakers responded at a rate of 58% and the Polish heritage speakers responded at 47%. When looking at the responses for the overt pronoun or “both”, the Spanish heritage group responded at 41% for the quantified antecedents and the Polish heritage group responded at 42%. With the WH-word antecedents the Spanish heritage group responded at a rate of 42% and the Polish heritage speakers responded with 48%. Finally, for the referential antecedents, the Spanish heritage speakers responded at a rate of 42% and the Polish heritage group responded with 53%.
An independent samples *t*-test was run to compare the means between the Spanish heritage speakers and the Polish heritage speakers in their responses in choosing the null and overt/both subject options for all three antecedent types. Results show that there is no significant difference between the two speaker groups and how they chose the null or overt/both subjects, $p > .05$.

5.1.10 Monolinguals Compared

A comparison of the Polish and Spanish monolingual speakers was done in order to see if their responses align in terms of choosing a null or overt subject or in stating that both options were adequate. Figure 14 below shows that both groups of appear to be responding identically in how they chose the null subject and for each quantifier type.
Starting with the null subject, the Spanish monolinguals (in red) responded with 75% with quantified antecedents and the Polish monolinguals responded with 63%. With the WH-word antecedents, the Spanish group responded with 74% and the Polish group was right there with them at 75%. For the referential antecedents, the Spanish group responded at a rate of 89% and the Polish group responded at 83%. Moving onto the overt pronoun or “both” as the subject choice in the SST, the Spanish monolinguals responded with 25% with the quantified antecedents and the Polish group responded at a rate of 37%. With the WH-word antecedents, the Spanish group responded with 26% and the Polish monolinguals responded at a rate of 25%. Finally, with the referential antecedents, the Spanish monolinguals responded at a rate of 11% and the Polish monolinguals responded with 17%.

Figure 14. Monolingual means compared for subject choice in SST
An independent samples *t*-test was used to compare the means between Polish monolinguals and Spanish monolinguals in the subject choice in the SST: null vs. overt/both. This analysis was also looking at the antecedent types. Results show that there is no statistically significant difference between the how the two groups chose the null and overt subjects for each antecedent type, $p > .05$. These results indicate that both null subject languages are working similarly in this task.

### 5.2 Test 2: Picture Matching Task

As described in Section 4.1, the purpose of the PMT was to test for the participants’ interpretation of null and overt subject pronouns in an embedded clause with strictly controlled quantified and *wh*-word antecedent types. Participants were provided with a context followed by two pictures and a target sentence that was underneath both pictures (each target scenario was presented on one PPT slide). Based on this sentence, participants were asked to indicate which picture best depicted that final sentence. It is assumed that participants indicated their interpretation of that target sentence by choosing one of the two pictures. Examples of tokens are provided in Chapter 4.

There were a total of 64 target sentences, where four quantified antecedents and two *wh*-word antecedents were tested, with eight tokens per antecedent type. Additionally, there were 16 tokens of referential antecedents that were common names in order to see how participants reacted to antecedents that do no fall within the Overt Pronoun Constraint (OPC). In the following sections, results will be provided for this task of both monolingual and heritage speaker groups of Spanish and Polish.
5.2.1 Spanish Monolinguals

As mentioned in Section 5.2, after reading the concluding target sentence, which contained either a null or overt pronoun, participants were expected to choose between two pictures and decide which picture best depicted that target sentence. Figure 15 below provides overall results for the monolingual Spanish participant group when there was an overt pronoun or a null pronoun in a target sentence. Like in the previous section, the results in this figure are grouped according to antecedent type (quantified, wh-word, and referential) to show the overall accuracy of this group and which picture they chose as the one depicting the concluding sentence that contained either an overt or null pronoun. The presence of the null subject indicates to the reader of the sentence (token) that the preferred interpretation is that where the null pronoun is bound to its quantified antecedent. The presence of the overt subject requires the reader to know that the overt subordinate subject pronoun cannot be bound to its antecedent and it must refer to a third party within the discourse (it must be unbound). Results showed, when the null subject was present in the subordinate clause, participants responded correctly with quantified antecedents at a rate of 70%. With Wh-word antecedents, Spanish monolinguals responded at a rate of 61% and with referential antecedents, they responded with 91%. When the overt pronoun was present in the subordinate clause, participants responded correctly with quantified antecedents at a rate of 68%, 73% with Wh-word antecedents, and 67% with referential antecedents.
A paired samples $t$-test was run to compare the means of the correct responses with the null pronoun (choosing a bound reading) to the uncanonical responses for the null pronoun (choosing an unbound reading), looking at the three antecedent types. Results show that there is a significant difference between the expected and unexpected responses for the null pronoun for all antecedent types, indicating that they are making a difference between bound and unbound readings in the null pronoun context, $p < .01$.

Next, a paired samples $t$-test was run to compare the means of the correct responses with the overt pronoun (choosing an unbound reading) to the unexpected responses for the overt pronoun, where choosing a bound reading violates the OPC. Results show that there is a significant difference in their choice of subject interpretation with the overt pronoun, $p < .01$. These results indicate that these monolinguals are distinguishing between the null and overt pronouns in their interpretation possibilities.
A further analysis was done of the average response of Spanish monolingual speakers looking at quantifier types in following with Beghelli & Stowell (1996) Checking Theory. As mentioned previously, the three quantifier types that are analyzed in this study are negative quantifier phrases (NQP), Wh-word quantifier phrases (WHQP), and group quantifier phrases (GQP). It was found that with a negative quantifier phrase Spanish monolinguals chose to bind a null subject at a rate of 77.5% and to interpret the overt subordinate subject as unbound at a rate of 69%. With a Wh-word quantifier phrase, participants bound the null subject at a rate of 61% and did not bind the overt subject at 73%. With a group quantifier phrase as an antecedent, participants bound the null subject at 67.5% and chose an unbound interpretation with the overt subject at 68%.

A factorial repeated-measures ANOVA was conducted in order to test the effect of the three quantifier-types used in this study with null and overt pronouns in the Spanish monolingual speaker group. ANOVA results show that there is no significant main effect for the quantifier-type used, $F(2, 38) = 1.41, p > .05$, and the type of pronoun is not significant either, $F(1, 19) = .167, p > .05$. There is a significant effect in the interaction between quantifier-type and pronoun, $F(2, 38) = 4.72, p < .05$. A within-subject contrast shows that there is a significant contrast between Negative QP type and Wh-word QP type with null and overt pronouns, $F(1, 19) = 7.81, p < .05$, but the contrast between Wh-word QP type and Group QP type with null and overt pronouns is not significant, $F(1, 19) = 3.02, p > .05$.

In Figure 16, the groups of antecedents (as show in Figure 15) are separated in the specific six quantifiers that were used throughout this task. Also the group of referential quantifiers is present here again. Figure 16 shows participants’ correct responses (their
preference of pictures) when there was null subject in the target sentence and when there was an overt pronoun in the target sentence. Specifically, it shows that when there a null pronoun in the subordinate clause, participants chose the bound reading (expected) most frequently with the referential antecedents at a rate of 91%, *nadie* at 78%, *todos* at 73%, plural *quién* at 70%, followed by *la mayoría de* at 66%, *muchos* at 64% and finally singular *quién* at 53%. When the overt subject pronoun was present in the subordinate clause, participants chose the unbound reading (expected) most frequently with quantified antecedent *la mayoría de* at a rate of 88%, singular *quién* at 80%, *nadie* at 69%, referentials at 67%, plural *quién* at 66%, *muchos* at 60%, and *todos* at 58%.

![Figure 16. Monolingual Spanish correct interpretation of null and overt subjects based on specific quantifiers in PMT](image)

A paired samples *t*-test was run to compare the means of expected (unbound readings) and unexpected (bound readings) responses to the presence of the overt pronoun in the
subordinate clause for each antecedent. Looking at the red bars in Figure 16 above,
results show that there is no significant difference between antecedents *muchos* and *todos* 
(*p > .05*) with how they interpret the overt pronoun. For the rest of the antecedents, there
is a significant difference between the bound and unbound readings with the presence of
the overt pronoun: *nadie* (*M = .375, SE = .095, t(19) = 3.943, p < .001*), *la mayoría de* (*M*  
= .750, *SE = .105, t(19) = 7.092, p < .001*), *quién* (*M = .600, SE = .100, t(19) = 6.000, p  
< .001*), *quiénes* (*M = .494, SE = .110, t(19) = 2.942, p < .01*).

5.2.2 Spanish Heritage Speakers

Figure 17 below provides overall results for the Spanish heritage participant group when
there was a null or overt pronoun in a target sentence. Like in the previous section, the
results in this figure are grouped according to antecedent type (quantified, *wh*-word, and
referential) to show how this group performed overall as well as to show which picture
they chose as the one depicting the concluding sentence that contained either a null
pronoun or overt pronoun. The results are interpreted as the participant providing a
bound or unbound reading, depending on which picture was chosen. The presence of the
null pronoun indicates that there should be a strong tendency for a bound reading (in
blue). However, an unbound reading is also possible because the presence of a null
pronoun makes the sentence ambiguous. Results showed, when looking at the null
pronoun, participants chose the bound option most frequently with referential antecedents
at a rate of 96%, next it was the quantified antecedents at a rate of 70% and *wh*-word
antecedents at a rate of 61%. The presence of the overt pronoun indicates that there can
only be an unbound reading (in red) as the OPC states. A bound reading is not possible
in null subject languages, but it is possible in English. Figure 17 further shows that
participants chose the unbound option most frequently with the \textit{wh}-word antecedents at a rate of 68%, next it was the quantified antecedents at a rate of 63% and finally the referential antecedents at a very low rate of 39%.

![Figure 17. Heritage Spanish interpretation of null and overt subjects based on group quantifiers](image)

A paired samples \textit{t}-test was run to compare the means between the null responses (bound vs. unbound) to see if there is a difference in how participants are treating the null pronoun. Results show that there is a significant difference between the bound and unbound interpretations with the null pronoun within each antecedent type, \( p < .01 \). These results indicate that participants are not randomly choosing one type of interpretation with the null pronoun in the subordinate clause, but instead they are showing that they prefer a bound reading.
Next, a paired samples \( t \)-test was used to compare the means of the overt pronoun interpretations (bound vs. unbound), where the unbound reading is the one that does not violate the OPC. Results show that here again, there is a significant difference in their interpretation of the overt pronoun in the subordinate clause, \( p < .01 \) with all antecedent types, except for the referentials where there is no significant difference, \( p > .05 \). These results show that the heritage speakers do interpret the sentences well.

Once again, an analysis was done of the average response of Spanish heritage speakers looking at quantifier types as per the Checking Theory. It was found that with a negative quantifier phrase Spanish heritage speakers chose to bind a null subject at a rate of 72.5% and to interpret the overt subordinate subject as unbound at a rate of 59%. With a Wh-word quantifier phrase, participants bound the null subject at a rate of 61% and did not bind the overt subject at 67.5%. With a group quantifier phrase as an antecedent, participants bound the null subject at 69% and chose an unbound interpretation with the overt subject at 64%.

A factorial repeated-measures ANOVA was conducted in order to test the effect of the three quantifier-types used in this study with null and overt pronouns in the Spanish heritage speaker group. ANOVA results show that there is no significant main effect for the quantifier-type used, \( F(2, 38) = .153, p > .05 \), for the type of pronoun, \( F(1, 19) = 2.15, p > .05 \), or in the interaction between quantifier-type and pronoun, \( F(2, 38) = 2.71, p > .05 \).

In Figure 18, the groups of antecedents (as show in Figure 17) are separated in the specific six quantifiers that were used throughout this task. Also the group of referential quantifiers is present here again. Figure 18 shows that with the null subject pronoun in the subordinate clause, participants chose the bound reading most frequently with the
referential antecedents at a rate of 96%, next the quantified antecedent *todos* at 76%, *nadie* at 72.5%, *la mayoría de* at 70%, singular *quién* at 64%, followed by *muchos* at 61%, and finally plural *quién* at 59%. With the presence of the overt subject pronoun, participants chose the unbound reading most frequently with the quantified antecedent *la mayoría de* at a rate of 84%, then plural *quién* at 73%, singular *quién* was next at 62.5%, *todos* at 61%, *nadie* at a rate of 59%, and finally *muchos* at 46% and the referential quantifiers had an unbound response rate of 39%.

![Spanish Heritage: Interpretation of Null/Overt Subjects in OPC Context](image)

**Figure 18. Heritage Spanish interpretation choice of null and overt subjects based on specific quantifiers in the PMT**

A paired samples $t$-test was run to compare the means of bound (unexpected) and unbound (expected) readings with an overt pronoun for each antecedent. Results show that heritage speakers do not have the correct reading with an overt pronoun with
antecedents *muchos, todos, and nadie, p > .05*. They do however see the interpretative restriction with antecedents *la mayoría de* ($M = .675, SE = .372, t(19) = 8.102, p < .001$), *quién* ($M = .250, SE = .117, t(19) = 2.127, p < .05$), and *quiénes* ($M = .450, SE = .095, t(19) = 4.723, p < .001$).

5.2.3 Spanish Monolinguals and Heritage Compared

It was necessary to conduct a comparison between the Spanish monolinguals and the Spanish heritage speaker groups in order to see how much of a difference there is in the interpretation possibilities between heritage speakers and their monolingual counterparts. This comparison will allow for a more general picture of what is going on in the language of heritage speakers in terms of language maintenance and change.

Figure 19 below compares the means of Spanish heritage speakers to Spanish Monolinguals in their interpretation of the overt subject pronoun in the subordinate clause with three different types of antecedents: quantified, WH-word, and referentials. It is important to note that the presence of the overt subject pronoun in the subordinate clause along with a quantified antecedent is what provides us with the environment for the OPC. For this reason, the comparison between the two speaker groups looks only at the overt pronoun. The analysis provided below indicates the means for choosing an unbound reading with the overt pronoun, which is the canonical response when following with the interpretation possibilities put forth by the OPC. The figure below shows that there is very minimal difference between how the two speaker groups interpret the overt pronoun with quantified and WH-word antecedents (the Spanish monolinguals with 68% and the heritage speakers with 63.25% with the quantified antecedents; monolinguals with 73% and the heritage speakers with 67.25% with the WH-word antecedents). There is a
greater contrast in how they treat the referential antecedents, where the monolinguals responded at 67% and the heritage speakers with 39%.

Figure 19. Comparison of interpretation of overt pronoun with three different quantifiers between Spanish monolinguals and Spanish heritage speakers

A MANOVA was run to compare the means of the monolingual and heritage speaker groups looking at how they responded to an overt subject (providing an expected unbound reading or an unexpected bound reading) with the three different antecedent types. Results show that there is no statistical difference in how they treat quantified and WH-word antecedents, however there is a difference between the responses with a referential antecedent, $F(1, 38) = 10.106, p < .05$.

Figure 20 below provides a comparison between Spanish monolinguals and Spanish heritage speakers in their interpretation possibilities of the overt subject pronoun in the subordinate clause when its antecedent is quantified. The figure below breaks
down the analysis into the seven quantifiers used in the study in order to be able to see how the two speaker groups differ in their interpretations. Overall, the two speaker groups pattern one another. In general, the heritage speaker responses are very similar to that of the monolinguals in how they interpret the overt subject pronoun. With antecedent *nadie* the monolinguals responded with 69% and the heritage speakers with 59%. With antecedent *la mayoría de* the monolinguals responded at a rate of 88% and the heritage with 84%. The monolinguals responded with 60% with *muchos*, while the heritage responded with only 49%. For antecedent *todos*, the monolinguals responded with 58% and the heritage with 61%. For the singular *quién*, the monolinguals responded at a rate of 80% and the heritage at 62.5%, while for the plural *quién* the monolinguals responded at a rate of 66% and the heritage speakers at 72%. With the referential antecedents, the monolinguals responded with 67% and the heritage with a low 39%.

![Figure 20. Comparison of correct interpretations of overt pronoun with specific quantifiers between Spanish monolinguals and Spanish heritage speakers](image-url)
An independent samples $t$-test was run to compare the means of overt pronoun responses for each specific antecedent used in this task between Spanish monolingual and heritage speakers. Results show that overall there is no significant difference between the two speaker groups. The only significant differences that are found are with the antecedent quién ($M = .175$, $SE = .077$, $t(38) = 2.268$, $p < .05$) and with the referential antecedents ($M = .281$, $SE = .088$, $t(38) = 3.179$, $p < .01$). These results indicate that heritage speakers respond very closely to that of the monolinguals when it comes to the overt pronoun (an OPC context) with specific antecedent types.

### 5.2.4 Proficiency Comparison

Just like with the Sentence Selection task, a proficiency comparison was done comparing the advanced and intermediate Spanish heritage speakers to the monolingual group in order to see the difference in their interpretation possibilities of the overt and null subject pronouns in the subordinate clause with a quantified antecedent. Figure 21 below compares how these three groups responded with quantified antecedents, WH-word antecedents, and with referential antecedents. The figure shows that all three speaker groups respond very similarly when it comes to the quantified and WH-word antecedents, where there appears to be almost no difference in their interpretation of the overt or null pronouns with those antecedents. Starting with the overt pronoun, with quantified antecedents, the monolinguals respond at 68%, the advanced Spanish heritage speakers at 58.5%, and the intermediate at 65%. With the WH-word antecedents, the monolinguals
respond at 73%, the advanced at 69%, and the intermediate at 66.6%. However, with referential antecedents, the two heritage groups are very similar to one another, but respond lower than the monolinguals, where the monolinguals respond at 67%, and the advanced speakers respond at 37.5%, and the intermediate at 39.5%. With the null subject, the monolinguals responded at 70% with quantified antecedents, advanced speakers were very close with 72.6%, and intermediate speakers were just behind the advanced group, responding at 68.23%. With the WH-word antecedents, the monolinguals responded at 61%, the advanced group was a little lower at 54.68%, and the intermediate group responded a bit stronger here with 65.6%. Finally with the referential antecedents, all three groups were very strong. The monolinguals responded at a rate 91%, the advanced group responded at 96.87% and the intermediate group responded with 95.83%.

![Figure 21. Comparison between proficiency levels in Spanish heritage speakers in the PMT](image-url)
A MANOVA was run to compare the means of all three proficiency groups looking at how they responded when there was a null pronoun in the target sentence (ambiguous reading) and when there was an overt pronoun in the target sentence (an OPC context). The analysis looks at each of the pronouns for each antecedent type. Results show that overall there is no significant difference between the three proficiencies. A Bonferroni post-hoc test confirms that there is no significant difference in how the three proficiency groups respond to the null and overt subordinate subjects. The only main effect that is found is with the referential antecedent with the presence of an overt pronoun. Here it is found that the monolinguals differ slightly from the advanced group ($p = .054$), but there is a greater difference between the monolinguals and the intermediate group ($p = .036$). These results indicate that there is a slight difference between the two heritage speaker groups and they deviate more from the monolinguals as proficiency lowers.

### 5.2.5 Polish Monolinguals

Figure 22 below provides overall results for the monolingual Polish participant group when there was a null pronoun in a target sentence. Like in the previous section, the results in this figure are grouped according to antecedent type (quantified, *wh*-word, and referential) to show how this group performed overall and which picture they chose as the one depicting the concluding sentence that contained a null pronoun. The results are interpreted as the participant providing a bound or unbound reading, depending on which picture was chosen. The presence of the null pronoun indicates that there should be a
strong tendency for a bound reading (in blue). However, an unbound reading is also possible because the presence of a null pronoun makes the sentence ambiguous. Results showed, when there was a null subject pronoun in the subordinate clause, participants chose the bound option most frequently with referential antecedents at a rate of 73%, next it was the quantified antecedents at a rate of 69% and \textit{wh}-word antecedents at a rate of 68%. The presence of the overt pronoun indicates that there can only be an unbound reading (in red) as the OPC states. A bound reading is not possible in null subject languages, but it is possible in English. As Figure 22 shows, participants chose the unbound option most frequently with quantified antecedents at a rate of 67%, next it was the \textit{wh}-word antecedents at a rate of 60% and referential antecedents at a rate of 59%.

![Graph showing interpretation choice of null and overt subjects based on group quantifiers](image)

**Figure 22.** Monolingual Polish interpretation choice of null and overt subjects based on group quantifiers
A paired samples $t$-test was run to compare the means of responses when the null subject was in the subordinate clause target sentence. The comparison looks at the canonical bound interpretation (in blue with the null pronoun) with the non-canonical (but also expected) unbound reading (in red). Results show that there is significant difference between the bound and unbound readings for null pronouns, indicating that these speakers are not randomly choosing a bound reading with a null pronoun: quantified ($M = .352, SE = .057, t(19) = 6.118, p < .001$), WH-word ($M = .312, SE = .090, t(19) = 3.455, p < .01$), referential ($M = .462, SE = .055, t(19) = 8.373, p < .001$).

Finally, a paired samples $t$-test was run to compare the means of the responses to the overt pronoun in the subordinate clause with each antecedent type (OPC context). Results show that there is a significant difference between the bound and unbound readings with the overt pronoun with quantified antecedents ($M = .339, SE = .063, t(19) = 5.360, p < .001$), and with WH-word antecedents ($M = .250, SE = .116, t(19) = 2.153, p < .05$). These results indicate that participants are not choosing random pictures when the overt pronoun is in the subordinate clause of the target sentence. These participants are obeying the OPC.

Additionally, an analysis was done of the average response of Polish monolinguals looking at quantifier types. It was found that with a negative quantifier phrase Polish monolinguals chose to bind a null subject at a rate of 89% and to interpret the overt subordinate subject as unbound at a rate of 49%. With a Wh-word quantifier phrase, participants bound the null subject at a rate of 66% and did not bind the overt subject at 62.5%. With a group quantifier phrase as an antecedent, participants bound the null subject at 60.5% and chose an unbound interpretation with the overt subject at 73%.
A factorial repeated-measures ANOVA was conducted in order to test the effect of the three quantifier-types used in this study with null and overt pronouns in the Polish monolingual speaker group. ANOVA results show that there is no significant main effect for the quantifier-type used, $F(2, 38) = .831, p > .05$. There is a significant main effect for the type of pronoun used, $F(1, 19) = 7.23, p < .05$, as there is a significant effect in the interaction between quantifier-type and pronoun, $F(2, 38) = 22.81, p < .001$. A within-subject contrast shows that there is a significant interaction between Negative QP type and Wh-word QP type with null and overt pronouns, $F(1, 19) = 18.01, p < .001$. The contrast between Wh-word QP type and Group QP type with null and overt pronouns is also significant, $F(1, 19) = 5.87, p < .05$.

In Figure 23, the groups of antecedents (as show in Figure 22) are separated into the specific six quantifiers that were used throughout this task. Also the group of referential quantifiers is present here again. As in the section that described the SST, the group of referential quantifiers will not be divided per token. Figure 23 shows that with the null subject pronoun in the subordinate clause, participants correctly chose the bound reading most frequently with the quantified antecedent *nikt* at a rate of 89%, *wiele* at 75%, referential antecedents at 73%, singular *kto* at 66%, plural *który* at 65%, followed by *większość* at 60%, and finally *wszyscy* at 47%. While with the overt subject pronoun, participants correctly chose the unbound reading most frequently with the quantified antecedent *wszyscy* at a rate of 82%, then *większość* at 79%, singular *kto* was next at 64%, plural *który* at 61%, both *wiele* and referential antecedents had a response rate of 59%, and finally *nikt* at 49%.
A paired samples $t$-test was used to compare the means of the correct and incorrect responses to the presence of the null pronoun in the subordinate clause (blue bars in Figure 23 above). Results show that there is no significant difference in bound and unbound readings with the null pronoun with the presence of antecedents *wszyscy* and *wielość*. There is a significant difference with the rest of the antecedents: *wiele* ($M = .500, SE = .095, t(19) = 5.210, p < .001$), *nikt* ($M = .775, SE = .067, t(19) = 11.461, p < .001$), *kto* ($M = .325, SE = .116, t(19) = 2.795, p < .05$), and *którzy* ($M = .300, SE = .127, t(19) = 2.349, p < .05$).

Next, a paired samples $t$-test was used to compare the means of the correct and incorrect responses to the presence of the overt pronoun in the subordinate clause (red bars in Figure 23 above). Results show that there is no significant difference between bound and unbound readings for all of the antecedents except for *wszyscy* ($M = .633, SE$...
= .113, \( t(19) = 5.596, p < .001 \) and \( większość (M = .575, SE = .091, t(19) = 6.328, p < .001) \).

5.2.6 Polish Heritage Speakers

Figure 24 below provides overall results for the Polish heritage participant group when there was a null or overt pronoun in a target sentence. Like in the previous section, the results in this figure are grouped according to antecedent type (quantified, \( wh \)-word, and referential) to show how this group performed overall and which picture they chose as the one depicting the concluding sentence that contained either a null or overt pronoun. The results are interpreted as the participant providing either a bound or unbound reading, depending on which picture was chosen. The presence of the null pronoun indicates that there should be a strong tendency for a bound reading (in blue). However, an unbound reading is also possible because the presence of a null pronoun makes the sentence ambiguous. Results showed, when the null subject pronoun was present in the subordinate clause, participants chose the bound option most frequently with referential antecedents at a rate of 97%, next it was the quantified antecedents at a rate of 72% and \( wh \)-word antecedents at a rate of 67%. The presence of the overt pronoun indicates that there can only be an unbound reading (in red) as the OPC states. A bound reading is not possible in null subject languages, but it is possible in English. Figure 24 shows that when the overt subject pronoun was present participants chose the unbound option most frequently with the \( wh \)-word antecedents at a rate of 54%, next it was the quantified antecedents at a rate of 53% and finally the referential antecedents at a very low rate of 23%. 
A paired samples $t$-test was run to compare the means of the responses to the presence of the null pronoun in the subordinate clause (bound vs. unbound), looking at the three different antecedent types. Results show that there is a significant difference between the bound and unbound interpretations with the null pronoun, $p < .01$. These results indicate that participants prefer to provide a bound reading with the null pronoun.

Next, a paired samples $t$-test was run to compare the means of the responses to the presence of the overt subject in the subordinate clause, which is the context for the OPC. It is expected that participants know that there should be an unbound reading with the overt pronoun. Just as Figure 24 above shows, the results from the $t$-test demonstrate that there is no significant difference in how these heritage speakers are responding to the
overt pronoun in the subordinate clause, \( p > .05 \). These results indicate that participants are unsure of what to do with the overt pronoun.

A further analysis was done of the average response of Polish heritage speakers looking at quantifier types. It was found that with a negative quantifier phrase Polish heritage speakers chose to bind a null subject at a rate of 86% and to interpret the overt subordinate subject as unbound at a rate of 37.5%. With a Wh-word quantifier phrase, participants bound the null subject at a rate of 66% and did not bind the overt subject at 54%. With a group quantifier phrase as an antecedent, participants bound the null subject at 68% and chose an unbound interpretation with the overt subject at 59%.

A factorial repeated-measures ANOVA was conducted in order to test the effect of the three quantifier-types used in this study with null and overt pronouns in the Polish heritage speaker group. ANOVA results show that there is no significant main effect for the quantifier-type used, \( F(2, 38) = .479, p > .05 \). There is a significant main effect on type of pronoun, \( F(1, 19) = 42.56, p < .001 \), and on the interaction between quantifier-type and pronoun, \( F(2, 38) = 12.62, p < .001 \). A within-subject contrast shows that there is a significant contrast between Negative QP type and Wh-word QP type with null and overt pronouns, \( F(1, 19) = 13.53, p < .01 \), but the contrast between Wh-word QP type and Group QP type with null and overt pronouns is not significant, \( F(1, 19) = .195, p > .05 \).

In Figure 25, the groups of antecedents (as show in Figure 24) are separated in the specific six quantifiers along with the referential quantifiers that were used throughout this task. This figure below shows that when there was a null subject pronoun in the subordinate clause, participants chose the bound reading most frequently with the referential antecedents at a rate of 97%, next the quantified antecedent nikt at 86%, singular kto at 70%, quantified antecedent wszyscy at 69%, wiele at 68%, followed by
większość at 66%, and finally plural ktoś at 63%. When there was an overt subject pronoun, participants chose the unbound reading most frequently with the quantified antecedent większości at a rate of 76%, then wszyscy at 65%, plural ktoś was next at 55%, singular kto at 53%, nadie at a rate of 59%, and finally nikt at a low 38%, wiele at 35%, and the referential quantifiers had an unbound response rate of only 23%.

![Polish heritage: Interpretation of Null/Overt Subjects in OPC Context](image)

**Figure 25.** Polish heritage interpretation of null and overt subjects based on specific quantifiers

A paired samples t-test was used to compare the means of the correct and incorrect responses to the presence of the null pronoun in the subordinate clause (blue bars in Figure 25 above). Results show that there is a significant difference in bound and unbound readings with the null pronoun with the presence of all antecedents (wiele (M = .366, SE = .113, t(19) = 3.240, p < .01), wszyscy (M = .375, SE = .102, t(19) = 3.684, p <
Next, a paired samples t-test was run to compare the means of the responses to the presence of the overt subject in the subordinate clause, which is the context for the OPC. It is expected that participants know that there should be an unbound reading with the overt pronoun. Results show that there is no significant difference in their interpretation of the overt pronoun with bound and unbound readings with antecedents kto and ktorzy, p > .05. There is however a significant difference with the rest of the antecedents indicating that these speakers are distinguishing between an expected and unexpected interpretation of the overt pronoun when it is in the subordinate clause: (wiele (M = -.300, SE = .123, t(19) = -2.438, p < .05), wszyscy (M = .300, SE = .105, t(19) = 2.854, p < .01), nikt (M = -.250, SE = .092, t(19) = -2.703, p < .05), wiekszosc (M = .525, SE = .099, t(19) = 5.294 p < .001).

5.2.7 Polish Monolinguals and Heritage Compared

A comparison was done between the Polish monolinguals and heritage speakers in how they responded in the Picture Matching Task, specifically looking at how they interpreted the overt and null subject pronouns. According to figure 26 below, when looking at the overt subject, responses appear to be similar with the quantified and WH-word antecedents, where the monolinguals responded at 67% and heritage speakers responded at 53% with quantified antecedents. With WH-word antecedents, monolinguals
responded at 60% and heritage speakers responded at 54%. While the contrast in responses with referential antecedents is much more sharp, where monolinguals responded with 59% and heritage speakers responded at a rate of 23%. When looking at the responses for the null subject, the figure shows that monolinguals responded at 69% with quantified antecedents, and Polish heritage speakers responded at 68.5%. With WH-word antecedents, the monolinguals responded at 68% and the heritage group was right there with them at 67%. Finally with the referential antecedents, the monolinguals responded at a rate of 73% and the heritage group responded with a high 97%.

![Polish Monolinguals vs. Heritage: Correct Response to Overt/Null Subjects](image)

Figure 26. Polish monolinguals compared to Polish heritage speakers with correct responses to overt and null subjects in the PMT

An independent samples \(t\)-test was run to analyze the means of responses to null (ambiguous reading) and overt pronouns in the subordinate clause (an OPC context) with
the three types of quantifiers used and comparing Polish monolinguals to Polish heritage speakers. Results show that there is a statistical difference between the two speaker groups with the quantified antecedents when the pronoun is overt \( (M = .135, SE = .048, t(38) = 2.817, p < .01) \) and with the referential antecedents for both null and overt pronouns \( (M = .356, SE = .089, t(28.347) = 3.981, p < .001) \).

Figure 27 below shows a much more detailed comparison between the two speaker groups, looking at the specific quantifiers to see what sort of difference there is in how the overt subject is interpreted by Polish monolinguals and Polish heritage speakers. The figure shows that the heritage speaker group patterns the responses of the monolinguals very nicely. Looking at the antecedent \( \text{nikt} \), monolinguals respond at 49% while the heritage speakers respond at 38%. With antecedent \( \text{większość} \), monolinguals respond at 79% and heritage speakers respond at a close 76%. Monolinguals respond with 59% with antecedent \( \text{wiele} \), while heritage speakers respond with 35%. With \( \text{wszyscy} \), monolinguals respond at a rate of 82%, and heritage speakers respond at 65%.

Looking at the WH-word antecedents, monolinguals respond at a rate of 64% with singular \( \text{kto} \) and heritage speakers respond at a rate of 53%. With plural \( \text{którzy} \), monolinguals respond at 61% and the heritage group responds with 55%. Finally, looking at the referentials, monolinguals respond with 59% and the Polish heritage speakers respond with a very low 23%.
An independent samples $t$-test was run to compare the means of overt subject responses between Polish monolinguals and Polish heritage speakers looking at the specific quantifiers. Results show that the only significant difference is found in antecedents $wiele$ ($M = .237$, $SE = .080$, $t(38) = 2.944$, $p < .01$), $wszyscy$ ($M = .166$, $SE = .077$, $t(38) = 2.158$, $p < .05$), and referentials ($M = .356$, $SE = .089$, $t(28.347) = 3.981$, $p < .001$). The rest of the group comparisons are not significant.

5.2.8 Proficiency Comparison

Again, like with the previous Spanish heritage group, the Polish heritage speaker group was divided according to proficiency level: Advanced and intermediate. A comparison was done to see how the two heritage speaker groups responded in comparison to the
Polish monolinguals. Figure 28 below shows the correct responses when there was a null or overt pronoun in the target sentence. The presence of the null pronoun expected a bound reading and an overt pronoun required an unbound reading. The figure below shows that the advanced Polish heritage speakers perform much like the monolinguals, while the intermediate speakers perform at a lower level. Specifically looking at the overt pronoun with the quantified antecedents, the Polish monolinguals responded with 67%, the Polish advanced heritage speakers with 59%, and the intermediate speakers with 44%. With the WH-word antecedents, the monolinguals responded with 60%, the advanced group with 62.5%, and the intermediate with a low 37.5%. Finally with the referential antecedents, the monolinguals responded with 59%, the advanced speakers responded with a low 28% and the intermediate speakers responded with an even lower 14%. Looking at the null pronoun with quantified antecedents, the monolinguals responded at 69%, the advanced speakers were close by at 71.11% and the intermediate group responded at a rate of 74.7%. With the WH-word antecedents, monolinguals responded at 68%, the advanced group responded at 64.42% and the intermediate heritage speakers responded with 69.64%. Finally with the referential antecedents, the monolinguals responded with 73%, the advanced speakers responded with 97.11% and the intermediate speakers responded at a rate of 96.42%.
A MANOVA was run to compare the means of correct responses with a null pronoun (ambiguous reading) and overt pronoun in the subordinate clause (OPC context) and comparing them between the three proficiency groups for the three quantifier types. Results show that when looking at the responses with the null pronoun, there is no significant difference between the quantified antecedents (quantified and WH-word), \( p > 0.05 \). However, there is a significant difference between the quantified antecedents with the overt pronoun. When comparing the proficiency groups, a Bonferroni post-hoc test was done and it shows that when looking at the quantified antecedents (with the overt pronoun in the target sentences), the only significant difference that is found is between the monolinguals and the intermediate heritage speakers \( p < 0.01 \). Since this is the context for the OPC the results point to the fact that this proficiency group is having trouble with the overt pronoun with quantified antecedents. When looking at the WH-word antecedents with an overt pronoun, there is a significant difference between the
monolinguals and the intermediate heritage speakers \((p < .05)\), and between the intermediate and advanced speakers \((p < .05)\). There is no difference between the advanced speakers and the monolinguals, which suggests that they perform very closely to one another in how they respond to the overt pronoun in the subordinate clause.

5.2.9 Heritage Compared

A comparison of the two heritage speaker groups was done in order to see if there was any similarity between their interpretation possibilities of the overt subject pronoun in the subordinate clause, given that both languages are null-subject languages, but they are from two distinct language families: Spanish is a Romance language and Polish a Slavic language. Overall Figure 29 below shows that the two groups respond similarly, however it appears that the Spanish heritage speaker group is a little stronger. The figure below further shows that both groups appear to respond better with the quantified (Polish at 53\% and Spanish at 63.25\%) and WH-word (Polish at 54\% and Spanish at 67.25\%) antecedents and they both have lower rates with the referential antecedents (Polish at 23\% and Spanish at 39\%).
Figure 29. Comparison of Polish and Spanish heritage speaker responses to overt subject in the PMT

An independent samples $t$-test was run to compare the means of correct (unbound) and incorrect (bound) responses with the presence of the overt pronoun in the subordinate clause (OPC context) with the different antecedent types between the two heritage groups. Results show that there is no significant difference between the two groups in terms of response to the quantified antecedents ($p > .05$), but there is a significant difference in the two heritage groups with the WH-word antecedents ($M = -.137, SE = .058, t(38) = -2.354, p < .05$), and with the referential antecedents ($M = -.156, SE = .074, t(38) = -2.102, p < .05$).

A more detailed comparison was done between Polish and Spanish heritage speakers looking at how they treated the specific quantifiers used in this study. Overall, Figure 30 below shows that they are very similar to one another in how they treat the different quantifiers. It appears as though the general tendency is that the Spanish
heritage speaker group is a bit stronger than the Polish heritage speaker group. According to the figure below, with the antecedent nadie/nikt the Polish heritage speaker group responded at 38% and the Spanish heritage speakers responded at 59%. With la mayoría de/większość the Polish group responded with 76% and the Spanish group responded with 84%. Antecedent muchos/wiele also had weaker results, where the Polish group responded with 35% and the Spanish speakers responded with 49%. The Polish group responded with 65% with the antecedent todos/wszyscy and the Spanish group responded with 61%. With the singular quién/kto the Polish group responded at a rate of 53% and the Spanish group responded at a rate of 62.5%. With the plural quiénes/którzy the Polish group responded at a rate of 55% while the Spanish group responded at a rate of 72%. Finally looking at the referential antecedents, the Polish group responded at a low 23% and the Spanish group responded similarly at 39%.
An independent samples $t$-test was used to analyze the means of the correct responses to the overt pronoun in the subordinate clause between Polish and Spanish heritage speakers, looking at the specific antecedent types used. Results show that there is no significant difference in how they responded to the overt pronoun with these antecedents except for antecedents nadie/nikt ($M = -.212, SE = .076, t(38) = -2.779, p < .01$), quiénes/którzy ($M = -.175, SE = .073, t(38) = -2.375, p < .05$), and referential ($M = -.156, SE = .074, t(38) = -2.102, p < .05$).
5.2.10 Monolinguals Compared

A comparison was done between Polish and Spanish monolinguals looking at how they responded to the overt subject pronoun with quantified, WH-word, and referential antecedents. This comparison was done in order to better understand the type of cross-linguistic variation that exists between two null-subject languages. Figure 31 below demonstrates that the difference between the languages is minimal. With quantified antecedents, Polish monolinguals responded at a rate of 67% and Spanish monolinguals responded almost identically at a rate of 68% for an unbound reading with overt pronouns. With WH-word antecedents, Polish monolinguals responded with 60% and Spanish monolinguals responded with 73%. Finally, with referential antecedents, Polish monolinguals responded with 59% and Spanish monolinguals responded at a rate of 67%. The figure below further shows the percentages for choosing a bound reading with an overt pronoun, which is an unexpected answer in an OPC context. For quantified antecedents, Polish monolinguals chose a bound reading at a rate of 33% and Spanish monolinguals did so at a rate of 32%. With WH-word antecedents, Polish monolinguals chose responded with 40%, while the Spanish group responded with 27%. Finally, with referential antecedents, the Polish group responded with 41% and the Spanish monolinguals responded at a rate of 33%.
An independent samples t-test was run to compare the means between Polish and Spanish monolinguals of correct (unbound) and incorrect (bound) responses to the presence of an overt pronoun in the subordinate clause, looking at the three antecedent types. Results show that there is no significant difference between the two monolingual groups in how they treat the overt pronoun when it is in the subordinate clause and within the context of the OPC.

Figure 32 below shows a more detailed comparison done between Spanish and Polish monolinguals looking at the specific quantifiers used in this study. Overall the figure below shows that there is very little difference in how the two language groups respond to the different quantifiers. With antecedent nadie/nikt the Polish monolinguals responded with 49% and the Spanish monolinguals responded with 69%. With la mayoría de/większość Polish monolinguals responded with 79% and Spanish monolinguals responded with 88%. The Polish group responded with 59% with
muchos/wiele while the Spanish group responded almost identically with 60%. With antecedent todos/wszyscy the Polish monolinguals responded with 82% and the Spanish group responded at a rate of 58%. With singular quién/kto Polish monolinguals responded with 64% and the Spanish group responded with 80%. Polish monolinguals responded with 61% with plural antecedent quiénes/którzy and Spanish monolinguals responded with 66%. Finally Polish monolinguals responded with 59% with referential antecedents and the Spanish group responded with 67%.

![Graph showing comparison between Polish and Spanish monolinguals](image)

**Figure 32. Comparison between Polish and Spanish monolinguals in the interpretation of the overt subject with specific quantifiers**

An independent samples $t$-test was run to analyze the correct responses with the presence of an overt pronoun in the subordinate clause between Spanish and Polish monolinguals.
This time an analysis was done looking at the specific antecedents and the results show that in general there is no significant difference between the antecedents used except for antecedents *todos/wszyscy* \((M = .242, SE = .088, t(38) = 2.729, p < .05)\), and *nadie/nikt* \((M = -.200, SE = .084, t(38) = -2.387, p < .05)\).
Chapter 6

6 Discussion/Conclusion

6.1 Introduction

The goal of this dissertation has been to investigate cross-linguistic variation in the interpretation of a component of the Null-Subject Parameter in heritage speakers of Spanish and Polish with the help of two comprehension tasks. Specifically, it was investigated whether Spanish and Polish heritage speakers, dominant speakers of English, had distinct interpretation possibilities from their monolingual counterparts when the antecedent of an overt subject pronoun in the subordinate clause was quantified or a wh-word. The intention was to see if English, a non-null-subject language, would influence these heritage speakers in how they interpret sentences that are constrained by the OPC. Furthermore, the objective was also to see if the quantity and quality of input that heritage speakers receive is sufficient for setting the NSP and maintaining the interpretative distinctions that are present within the OPC. Taking a closer look at this constraint, it was then asked if all the quantified antecedents used in this study would be treated equally in following with the constraints proposed by the OPC.

As it has been previously discussed, the OPC is only found in null-subject languages. This constraint acknowledges the interpretative restrictions that are found on an overt subject pronoun in the subordinate clause when its antecedent is quantified. The presence of an overt pronoun restricts the breadth of possible interpretations to just one: The pronoun must refer to a third party in the discourse and crucially, it cannot be bound
to its antecedent. Conversely, the presence of a null pronoun allows for an ambiguous reading, which is more akin to what is found in the interpretative possibilities in English. With a null pronoun in the subordinate clause, the sentence becomes ambiguous allowing for both bound and unbound readings. Because English is a non-null-subject language, the overt pronoun in the subordinate clause of a complex sentence, where its antecedent is quantified, allows for the same ambiguous reading that is found with null subjects in null-subject languages.

In order to test the interpretative possibilities in Spanish and Polish heritage speakers and to investigate whether English interferes with the interpretation of the overt pronoun, two comprehension tasks were used: A Sentence Selection task and a Picture Matching task.

This final chapter discusses the general findings from both comprehension tasks and establishes the contributions made to the field of heritage languages, which specifically looks at language maintenance, and dominant language transfer, as well as it aims to contribute to the field of linguistics as a whole. Finally, the limitations of the study and future work will be discussed.

### 6.2 Summary of Results

Results from the SST have found that Spanish monolinguals and Polish monolinguals respond very similarly to each other. It is reported that no significant difference was found between these two speaker groups. The same results were found when comparing the Polish heritage speakers to the Spanish heritage speakers, showing that both groups
are similar in their interpretation possibilities of the overt pronoun. There was a significant difference between the responses by the Polish monolinguals and Polish heritage speakers, and between the Spanish monolinguals and Spanish heritage speakers.

Table 11 below summarizes the results found in the SST and in the PMT, looking at each speaker group and whether or not they obeyed the OPC in that specific task. This decision was made based on the statistical analysis done in Chapter 5. Because there was no significant difference between null and overt pronouns, it is analyzed as though they do not obey the OPC. The table is divided into tasks, then language group, and then each language group is divided into speaker groups: monolinguals and heritage speakers. The table shows that both of the monolingual speakers obeyed the OPC in each task. In the SST, both of the heritage groups were having problems with the OPC, and in the PMT it was the Polish heritage group that continued to have problems with the OPC.

<table>
<thead>
<tr>
<th>Task</th>
<th>Speaker Groups</th>
<th>OPC Obeyed</th>
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</thead>
<tbody>
<tr>
<td>Sentence Selection</td>
<td>Spanish</td>
<td>Monolinguals</td>
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<td></td>
<td></td>
<td>Heritage</td>
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<td></td>
<td>Polish</td>
<td>Monolinguals</td>
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<td></td>
<td>Heritage</td>
</tr>
<tr>
<td></td>
<td>Polish</td>
<td>Monolinguals</td>
</tr>
</tbody>
</table>
Looking at how the heritage speakers responded in the SST, it appears as though they are having problems with the OPC in this task. In this task in particular they were to notice that the null subject was the correct response and at the same time that the overt pronoun would violate the restrictions of the OPC. The results showed that the responses of these speakers did differ significantly between the null and overt pronouns.

Moreover, the SST showed that when looking at the proficiencies within the two heritage speaker groups, there was no significant difference between the advanced and the intermediate speaker groups, or between the monolinguals and the intermediate speaker groups of both languages. The only significant difference found was between the Polish monolinguals and their advanced heritage speakers, when looking at the WH-word antecedents. A closer comparison between the three Polish proficiencies (monolinguals, advanced, and intermediate) when looking at the quantified antecedents found no significant difference at all. With the WH-word antecedents, the only difference that was found was between the monolinguals and the intermediate group. These results indicate that there may be no need to separate the heritage speakers into two proficiencies since they appear to be performing the same. However, it is possible that different results would be found if there were more participants in each group. Similarly to the Polish group, it also appears that there is no need to separate the Spanish heritage speakers into different proficiencies because there is no significant difference between the monolinguals and the advanced, the monolinguals and the intermediate, or between the
advanced and the intermediate. A slight difference was found between the monolinguals and the intermediate group with the WH-word antecedents, just like with the Polish group, but here the difference is almost significant ($p = .052$), which strongly suggests that more participants are needed in order to see what sort of effect is being formed with the WH-word antecedents in particular.

Results from the PMT are not as clear-cut as they are with the SST because there was a difference in how the two tasks were designed. The SST did not leave too much room for personal interpretation because the contexts were set up to force one specific reading. The PMT on the other hand employed the use of pictures and asked participants to provide their own interpretations of sentences that were formulated following the OPC.

Overall results show that there is no significant difference between the two monolingual groups in this task. When comparing the two heritage speaker groups, there is no significant difference when looking at the quantified antecedents, but there is a difference with the WH-word antecedents, pointing to these antecedents once again. When comparing the Polish monolinguals to their heritage speakers there is a significant difference in their interpretations of the overt pronoun with quantified antecedents, but they appear to be treating the overt pronoun similarly with WH-word antecedents. Looking at the Spanish monolinguals and their heritage speakers, there is no significant difference in how they interpreted the overt pronoun, indicating that the Spanish heritage speakers do have the OPC.

Table 11 above provides the results from the PMT looking at whether each speaker group obeyed the OPC. Results from the table show that both monolingual groups were able to distinguish between bound and unbound interpretations when the
overt pronoun was present in the subordinate clause. Here the Spanish heritage speaker group appears to also differentiate between bound and unbound interpretations with the overt pronoun. The only group that appears to be having difficulties is the Polish heritage speaker group. It is possible that if there were more participants in this group, the results would line up more with that of the Spanish heritage speakers, especially since an intergroup comparison finds that there is no difference between their interpretations of the overt pronoun for both tasks.

Looking at the proficiencies of the heritage speakers in the Spanish group, the results showed that there was no significant difference between any of the three proficiency groups and the antecedent types, which is exactly what was found in the SST. With the Polish monolinguals and heritage speakers, and the quantified antecedents, the only significant difference is between the monolinguals and the intermediate speaker group. With the WH-word antecedents, there is a significant difference between the monolinguals and the intermediate speakers and between the advanced and intermediate speakers. These results point towards the fact that a difference between the proficiencies exists, especially between the monolinguals and the intermediate group, but more people need to be tested in order for the results to show what other factors are at play.
6.3 Discussion of Results

Both experimental tasks (the Sentence Selection task and the Picture Matching task) examined the interpretation limitations of Spanish and Polish heritage speakers on the overt pronoun in the subordinate clause with a quantified antecedent. These tasks have demonstrated that both groups of heritage speakers are not always successful at maintaining the interpretative possibilities that are found in monolingual speakers of Spanish and Polish. Since these are dominant English speakers where the OPC does not exist, it appears as though heritage speakers are having trouble recognizing that an overt pronoun cannot be bound in its interpretation to its quantified antecedent, but instead the pronoun must obligatorily refer or be linked to a third person within the discourse: they are not always recognizing the difference in interpretation between an overt and null pronoun in this very specific context. The results from both tasks indicate that although the monolinguals do not respond at ceiling, there is a contrast between the overt and null pronouns. Most importantly, the heritage speakers pattern with the monolingual responses, although the responses are statistically different. This may be an indication that English may have had some influence in their interpretation of the overt pronoun, however the reasons for this difference are still unknown.

The results found in the SST appear to suggest that heritage speakers are having trouble with the null-subject parameter and specifically with the OPC. However, it is possible that heritage speakers had such difficulty with this task because of the reading
that was involved. Although all participants stated that they could read easily in their heritage language, the amount of reading and comprehension that was expected in this task could have taken a toll on their interpretation of the null and overt pronouns. This may be so given the fact that there is no difference in their choice of the null or overt subjects. A post-hoc analysis was done to see if the advanced heritage speakers in each language group performed better in this task on their own (not grouped with the intermediate speakers) and the results showed that they did not, indicating that even the advanced heritage speakers in each group were having difficulty with this task.

Additionally, these results indicate the similarity that exists between all null-subject languages regardless of the language etymology. Both tasks are evidence of Polish being a null-subject language: Even though Spanish and Polish are two languages from completely different language families, the results from the monolinguals are evidence of the consistency of parameters cross-linguistically.

Because very little difference has been found between the three proficiency levels tested in this study, this suggests that the participants in this study do not vary in their proficiencies. This also points to the fact that more participants need to be tested with varying proficiency levels in order to be able to truly see if proficiency has an effect on the interpretative complexities that are found within the OPC. Previous work on advanced and intermediate heritage speakers also found there to be a difference between the intermediate speakers and the monolinguals (nb, 2004), showing that there was no statistical difference between the advanced heritage speakers and the monolinguals, but both groups were statistically different from the intermediate group. This similarity indicates that proficiency in the heritage language is a
necessary factor in maintaining the interpretative possibilities found in monolingual grammars. In this study it is possible that proficiency had an effect on the literacy of the heritage speakers. Unfortunately literacy was not a factor that was tested.

Previous studies had sought out to look at the interlanguage grammars of second language learners of Japanese, Spanish, and Turkish (Kanno, 1997; Pérez-Leroux & Glass, 1997; Gürel, 2003; Rothman & Iverson, 2007a) and they used monolinguals as their controls and not necessarily as their experimental groups. The purpose of the monolingual groups in this study was twofold: A control group for the heritage speakers, and to experimentally see how the various quantifiers are treated in the OPC context. The previous work done on the OPC in L2 Spanish showed that monolinguals committed almost no errors in their judgements of the constraint. Contrastingly, this study shows that monolinguals ranged in their responses to the overt pronoun in the subordinate clause from 82% to 49% in following with the restriction put forth by the OPC. What has been found in this study is that monolinguals do not treat quantified and WH-word antecedents differently. This finding supports Montalbetti’s (1984) OPC in that he had stated that this restriction holds for all types of quantified antecedents. Additionally, it has been found that there is a difference in how monolinguals treat quantified antecedent types and referential antecedents. This difference should not be surprising given that referential antecedents (common names in this case) do not fall within the restrictions of the OPC and therefore the overt pronoun is free to bind with the referential antecedent or with a third person.

Results from the PMT show that even though the responses to the quantifiers are very similar (with no significant difference in the SST), it is possible that the semantic
difference between the antecedents is what is causing some interpretative noise. Furthermore, when analyzing the antecedents according to the Checking Theory (Beghelli & Stowell, 1996), the results demonstrated that there was no significant difference between the three quantifier-types (NQP, WHQP, GQP), indicating that they were all treated equally and the type of quantifier (as per the Checking Theory, Section 2.3.1) was not a significant factor in the interpretation of the overt pronoun. Because this task relied heavily on the participants’ own interpretation of the pictures that were provided, it is possible that the pictures themselves were not sufficiently clear for the participants to confidently choose the canonical response.

In this task it was found that it was the Spanish heritage speakers who did well and were able to show that they obey the OPC. Conversely, the Polish heritage speakers maintained problems with the interpretation of the overt subordinate subject. Given that the Spanish heritage speakers did show a contrast in this task, it is believed that this task was easier to comprehend due to the help of pictures. Again, a post-hoc analysis was done looking at how the advanced Polish heritage speakers responded (without the intermediate speakers) to this task in terms of the presence of the overt pronoun. It is found that here there was almost significant difference with the Quantified antecedents \( (M = .173, SE = .081, t(12) = 2.122, p = .055) \) and there is a significant difference with the WH-word antecedents \( (M = .250, SE = .057, t(12) = 4.416, p = .001) \). These post-hoc results strongly suggest that this task was too difficult for the intermediate speakers, and that the entire testing procedure may have been too long for the lower proficiency speakers all together.
Since no previous study (to my knowledge) has looked at quantifier types in the context of the OPC, there is no study to compare these results to. The only work comparable is that of Montalbetti (1984) where he clearly states that the restriction on the interpretation of the overt pronoun with a quantified antecedent is found with all quantified antecedents and in the same manner. My findings in both tasks and the previous work done on the OPC with L2 Spanish, Japanese, and Turkish fully support the claims made by Montalbetti (1984). The fact that the results in the PMT are not as clear points to the fact that there may be other factors at play in terms of the task itself than previously anticipated.

6.4 Heritage Language Maintenance

Many previous studies have looked at the differences and similarities between second language learners and heritage speakers (Au et al., 2002; Bowles, 2011; Montrul, 2009, 2011a, 2012; Montrul & Foote, 2012; Montrul & Perpiñán, 2011; Montrul, Foote & Perpiñán, 2008a, 2008b; among many others), and vary in reporting on the advantages or disadvantages that heritage speakers may have when it comes to their family language. One such study reported that heritage speakers, who were classified as “overhearers” of their heritage language, had a native-like accent in the heritage language as adults indicating that early exposure to the language is beneficial in maintaining a native-like accent (Au et al., 2002). Meanwhile, Montrul, Foote & Perpiñán (2008a) investigated the acquisition of grammatical gender and they reported on both advantages and disadvantages showing that heritage speakers are stronger in oral tasks, while second
language learners are stronger in written tasks. Additionally, Bowles (2011) confirmed this finding by showing that heritage speakers are very strong in oral tasks that require the use of implicit knowledge, while second language learners are stronger with tasks that require the use of explicit knowledge. Furthermore, as previously mentioned, Montrul (2004) looked at null and overt pronoun use in heritage speakers and found that advanced heritage speakers perform just like monolinguals in their use of null and overt pronouns, while intermediate speakers produced significantly more overt subjects than null subjects indicating that the pragmatic distribution of the two pronouns is not as clear for the lower-proficiency group. While there are still other works have been successful at demonstrating the strengths and weaknesses in the heritage grammars, the results from this study aim to add to the strengths that are found in the heritage speaker grammars of null-subject languages.

The aim of dividing the heritage speakers in this study into advanced and intermediate speaker groups was to see if there would be a significant difference between the three proficiency levels (including the monolinguals). The results demonstrate that, with the participants tested in this study, the capacity to interpret the overt pronoun correctly within the context of the OPC wavers with intermediate level speakers. These findings suggest that with lower proficiency speakers, the intricate interpretative contrast that exists with overt pronouns and their quantified antecedents is not always maintained.

A look at how the advanced speakers alone responded with the tasks shows that there is a proficiency effect, where the advanced speakers are stronger at the interpretative factors that are involved in the OPC. Following this train of thought, it is possible that the lower level speakers are also capable of discriminating between the bound and unbound readings with the subordinate overt pronoun but the type of task
would need to be one of an oral nature, as shown in the previous works of Bowles (2011) and Montrul, Foote & Perpiñán (2008a).

Although studies have attempted to show that English as a dominant language is transferred onto the heritage language (Polinsky, 1997; Montrul & Ionin, 2010, among others) the findings in this study cannot support this theory at this point in time. More testing needs to be done in order to see if English truly affects the lower proficiency speakers. While English is the dominant language of these speakers, the input received prior to the critical period appears to be critical in establishing and fortifying the NSP, especially with the advanced heritage speakers. Indeed Wexler (1998) reports that children set their parameters from very early on, suggesting that from the onset of the two-word stage at about 18 months children have already set their parameters. Adding onto this, the work done by Guasti (1996, 2000) has shown that Italian children between the ages of 1;7 and 2;10 already appear to have the Null Subject Parameter fully set because they are producing null subjects in interrogative sentences at a rate of 57.1%. With this in mind, it is not surprising that heritage speakers have the OPC, since it is part of the clusters that make up the NSP, as discussed in further detail in Section 2.1. It is believed that the early input that heritage speakers receive is what sets the NSP in their grammars and allows for them to later separate the interpretative possibilities that come with a null-subject language, when their dominant language is English. At this current stage, this work does not support theories of incomplete acquisition or attrition because all heritage speakers, regardless of proficiency level, acquired and had access to their heritage language from birth. It is believed that proficiency played a key role in how the lower-level heritage speakers interpreted and comprehended the OPC contexts in each task.
Moreover, this raises the question of the quantity and quality of input that heritage speakers receive during their developmental years, which is what aids them in acquiring the more subtle aspects of the language. The heritage speakers in this study all grew up speaking the family language with at least one parent, and to this day they appear to maintain the language by using it with family members in Canada as well as in the home country.

6.5 Limitations and Areas of Future Study

A main limitation in this study is the amount of reading that heritage speakers were asked to do over the span of two tasks. This is a very possible set back to this study and it appears to be hindering the results, especially with the Polish heritage speakers. Furthermore, another problematic area appears to be the pictures that were used in the Picture Matching task. It is possible that some of the pictures were unclear making the target sentences more difficult to interpret. Furthermore this may be the reason for the varied judgements that are found between specific antecedents. Additionally, the number of quantified antecedents that employed a noun phrase (la mayoría de la gente ‘the majority of the people’) and contrasting that with antecedents that used null pronominals was not controlled for. Only one antecedent (la mayoría de) out of four was followed by a noun, while the other three were pronominalized. This could account for the difference in interpretation that has been found with this one antecedent.

Another shortcoming in this task was the number of participants in each proficiency level. Because the participant pool was not collected with the consideration
of varied proficiencies, 20 participants in each group was quickly diluted into smaller
groups once they were separated by proficiency. It is believed that with more people in
each group (advanced and intermediate) there would be a greater difference in the
interpretation possibilities, especially between the intermediate and the monolinguals.

Areas of future study include testing lower level speakers such as lower level
second generation speakers, as well as third generation heritage groups in order to be able
to compare the results with that found here with the advanced and intermediate level
speakers and to see if the OPC is intact. Furthermore, testing lower-lever speakers would
allow one to see at what level English begins to interfere with the interpretations within
the OPC, if at all. Additionally, it is pertinent that this study be done aurally in order to
see if the fact that participants were expected to read the target sentences themselves had
an effect on the results. Another area, which requires further research, is the replication
of this study with other NSP heritage languages in order to see if similar contrasts appear
in the PMT. This analysis is necessary in order to be able to conclude if the contrasts
found between the four antecedents are due to a task effect or if some type of change is
happening in the interpretation of these specific quantifiers.

6.6 Conclusion

In conclusion this study set out to make an original contribution to the growing literature
on heritage languages and heritage speakers. This study took the previous work done on
the OPC with second language learners (Kanno, 1997; Pérez-Leroux & Glass, 1997;
Gürel, 2003; Rothman & Iverson, 2007a) and filled the gap by showing what the
interpretative scope is of Spanish and Polish heritage speakers. Furthermore, the investigation was taken one step further and analyzed the six different quantified and WH-word antecedents used in this study in order to see if they would be treated differently, especially by heritage speakers.

One of the goals of this work was to show how important it is to study heritage speakers and their always-changing grammars. This work in particular showed that although previous works have discussed in great detail the changes that do occur in heritage grammars, this study is evidence that the interpretative factors, which are woven into the NSP and the OPC in particular remain steady in advanced-level speakers. Furthermore, the importance of input and age of acquisition have been demonstrated in that an early setting of parameters in the heritage language allows for interpretative possibilities that do not exist in the dominant language, but quantity of input throughout the speaker’s life also appears to be important, especially when comparing advanced and intermediate speakers. More importantly, the dominant language does not appear to interfere in the distinct interpretative role that the overt pronoun has in the subordinate clause, in the heritage language. This study is an example of language maintenance and not of language loss, highlighting the strengths of the null-subject parameter in the grammars of heritage language speakers. The hope is that this work will inspire further research with heritage grammars in order to allow us to recognize what all of the advantages are with being a heritage speaker.
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Appendices

Appendix A - Sentence Selection Task: Spanish Version

Instructions:

Ud. va a ver un contexto con dos frases al final. Ud. tiene que decidir, según sus intuiciones, cuál frase es la más lógica.

Es decir, hay que decidir si la frase (a) o (b) es un frase lógica con el contexto al principio. Si Ud. siente que las dos están lógicas, por favor elige (c).

Por ejemplo:

**EJEMPLO 1**

Cuando mi mamá era joven tenía muchos novios.

a) Todos querían salir con ella.
b) Todos quisieron salir con ella.
c) (a) y (b)
EJEMPLO 2

Juan y María tenían hambre y querían comer algo salado. Fueron a un restaurante para cenar.

a) Juan escogió una pizza con jamón.
b) María escogía las patatas fritas.
c) (a) y (b)
1

Ramona y Mónica pasaron todo el día en la playa.

a) Ramona se bebió dos litros de agua.
b) Mónica se bebía dos litros de agua.
c) (a) y (b)

2

Carolina y Josefina querían ir de vacaciones a Japón.

a) Carolina ahorraba dinero por dos años para poder ir a Japón.
b) Josefina ahorró dinero por dos años para poder ir a Japón.
c) (a) y (b)
Un grupo de amigos siempre sale a bailar los fines de semana. Toman por lo menos 5 cervezas.

a) Nadie cree que él toma demasiado.
b) Nadie cree que toma demasiado.
c) (a) y (b)

A Carlos le gusta tener mucho tiempo por las mañanas para poder disfrutar del desayuno en la casa.

a) Carlos lee el periódico mientras toma un café.
b) Carlos lee el periódico mientras él toma un café.
c) (a) y (b)
De joven, Gerardo no prestaba atención en las clases y nadie sabía por qué.

a) Gerardo no vio muy bien sin gafas.
b) Gerardo no veía muy bien sin gafas.
c) (a) y (b)

Los estudiantes acaban de recibir las notas del examen que escribieron la semana pasada. No todos están contentos con los resultados.

a) ¿Quiénes creen que no estudiaron suficiente para el examen?
b) ¿Quiénes creen que ellos no estudiaron suficiente para el examen?
c) (a) y (b)
Todos en la clase se conocen muy bien. 
Estudiaron muchísimo para ese examen.

a) Cada persona en la clase piensa que aprobará el examen.
b) Cada persona en la clase piensa que él aprobará el examen.
c) (a) y (b)

Cada verano Alma y Ana iban al museo de arte y pasaban horas allí.

a) Cada vez que regresaban a casa a Alma le dolieron los pies.
b) Cada vez que regresaban a casa a Alma le dolían los pies.
c) (a) y (b)
La mamá regresó a la casa y todos estaban en el salón hablando. La mamá quiere saber qué quieren cenar.

a) La mayoría de la familia confirmó que él no quería el brócoli para la cena.
b) La mayoría de la familia confirmó que no quería el brócoli para la cena.
c) (a) y (b)

Tres amigos están planeando un viaje a México para diciembre. Ellos quieren saber:

a) ¿Quién cree que se irá a México?
b) ¿Quién cree que él se irá a México?
c) (a) y (b)
11

Los padres de Carlos siempre hablan español en casa.

a) Carlos no entiende por qué nunca aprendió la lengua de los papás.
b) Carlos no entiende por qué nunca aprendía la lengua de los papás.
c) (a) y (b)

12

Los estudiantes de negocios ya están hartos de estudiar para los exámenes. La graduación es en una semana.

a) Muchos sólo piensan que van a graduarse.
b) Muchos sólo piensan que ellos van a graduarse.
c) (a) y (b)
María es muy presumida y aprovecha cualquier ocasión para mirarse en un espejo.

a) María se mira en el espejo mientras se lava los dientes.
b) María se mira en el espejo mientras ella se lava los dientes.
c) (a) y (b)

Juan y María tenían hambre y querían comer algo salado. Fueron a un restaurante para cenar.

a) María escogía las patatas fritas.
b) Juan escogió una pizza con jamón.
c) (a) y (b)
Cinco autores quieren ganar el premio de mejor novela del año.

a) Nadie entiende por qué no ganó el premio.
b) Nadie entiende por qué él no ganó el premio.
c) (a) y (b)

Tres parejas de amigos ya tienen niños. Cuando están todos juntos juegan con los niños, pero se cansan.

a) La mayoría de los amigos no sabe que él no quiere tener más hijos.
b) La mayoría de los amigos no sabe que no quiere tener más hijos.
c) (a) y (b)
Raúl y Pablo trabajaban juntos construyendo casas cuando eran jóvenes.

a) Cada mes Pablo construyó por lo menos dos casas.
b) Cada mes Raúl construía por lo menos dos casas.
c) (a) y (b)

Los alumnos siempre estudian mucho cada fin de semana. La profesora les pregunta:

a) ¿Quién piensa que es el más inteligente de la clase?
b) ¿Quién piensa que él es el más inteligente de la clase?
c) (a) y (b)
19

Juan siempre hace mil cosas a la vez y siempre está al teléfono.

a) Juan cruza la calle mientras él habla por el teléfono.
b) Juan cruza la calle mientras habla por el teléfono.
c) (a) y (b)

20

Cuando mi mamá era joven tenía muchos novios.

a) Todos quisieron salir con ella.
b) Todos querían salir con ella.
c) (a) y (b)
Este año hay cinco premios para viajar a México. Sólo cinco personas entraron en el concurso.

a) Cada persona cree que él ganará un viaje a México.
b) Cada persona cree que ganará un viaje a México.
c) (a) y (b)

Ese grupo de amigos es muy creído y orgulloso.

a) Todos creen que tienen la novia más guapa.
b) Todos creen que ellos tienen la novia más guapa.
c) (a) y (b)
Julio y Javier tenían diez años cuando se conocieron. Pasaban mucho tiempo juntos.

a) Cuando se conocieron, Javier comió mucho dulces cada día después de la escuela.
b) Cuando se conocieron, Julio comía muchos dulces cada día después de la escuela.
c) (a) y (b)

Algunos empleados recibieron más dinero la semana pasada porque trabajaron más horas.

a) ¿Quiénes están contentos que recibieron dinero? 
b) ¿Quiénes están contentos que ellos recibieron dinero? 
c) (a) y (b)
El gobierno municipal requiere que todos usen menos agua en sus casas. Están llamando a cada casa preguntando por el uso diario del agua.

a) Muchos dicen que ellos usan poca agua.
b) Muchos dicen que usan poca agua.
c) (a) y (b)

Miguel fue de vacaciones con su amigo Carlos y con su familia.

a) Fue allí donde descubría que le gusta la playa.
b) Fue allí donde descubrió que le gusta la playa.
c) (a) y (b)
El portero sabe que no debe usar su teléfono mientras está trabajando, pero está esperando noticias de su mujer.

a) El portero abre la puerta mientras mira su teléfono.
b) El portero abre la puerta mientras él mira su teléfono.
c) (a) y (b)

Toda la clase estudió la misma información para la prueba. Parece que hay algo que nunca han visto en la clase.

a) Todos se quejan de que ellos no saben las respuestas.
b) Todos se quejan de que no saben las respuestas.
c) (a) y (b)
Hace dos años Mariana vivía en Francia y José vivía en Alemania.

a) Mariana lo visitaba en Alemania cada mes.
b) José la visitó en Francia cada mes.
c) (a) y (b)

Toda la familia está en la casa de la tía María. 
Ella siempre prepara los mejores cafés y tés.

a) Nadie sabe si él prefiere té o café.
b) Nadie sabe si prefiere té o café.
c) (a) y (b)
Los amigos pasaron toda la semana estudiando para el examen. Antes del examen se preguntan:

a) ¿Quién piensa que él aprobará el examen?
b) ¿Quién cree que aprobará el examen?
c) (a) y (b)

La mamá de Lucía quiso dar a luz en el hospital, pero no pudo llegar a tiempo en coche.

a) Por eso, Lucía nacía en la casa de su abuela.
b) Por eso, Lucía nació en la casa de su abuela.
c) (a) y (b)
En cada clase la profesora hace preguntas sobre las lecturas.

a) Cada persona siente que él entendió las lecturas.
b) Cada persona siente que entendió las lecturas.
c) (a) y (b)

Hay una competición para encontrar 5 tesoros escondidos.

a) Todos los participantes anuncian que encontrarán los cinco tesoros.
b) Todos los participantes anuncian que ellos encontrarán los cinco tesoros.
c) (a) y (b)
Juana y Alfredo fueron al cine por la tarde, pero Juana se demoraba mucho y por eso,

a) Ellos llegaban demasiado tarde para ver una película.
b) Ellos llegaron demasiado tarde para ver una película.
c) (a) y (b)

Cuatro colegas tienen reunión en una hora con el jefe. Ellos quieren saber:

a) ¿Quién sabe que él recibirá un ascenso?
b) ¿Quién sabe que recibirá un ascenso?
c) (a) y (b)
Mariana es presentadora en un programa de cocina.

a) Mariana cocina mientras explica como preparar los ingredientes.
b) Mariana cocina mientras ella explica como preparar los ingredientes.
c) (a) y (b)

Mónica quería hacer un pastel para el cumpleaños de su mamá.

a) Mónica preparó los ingredientes cuando vio que no había suficiente leche.
b) Mónica preparaba los ingredientes cuando vio que no había suficiente leche.
c) (a) y (b)
Nadie en el departamento nunca ha trabajado con las matemáticas. Ahora tienen que aprender cómo funciona un programa de estadística.

a) La mayoría del departamento aclara que es incapaz de aprender estadística.
b) La mayoría del departamento aclara que él es incapaz de aprender estadística.
c) (a) y (b)

Los amigos están jugando en la playa pero tienen miedo de entrar en el mar.

a) ¿Quiénes piensan que ellos no saben nadar?
b) ¿Quiénes piensan que no saben nadar?
c) (a) y (b)
Hace quince años Jennifer vio una película sobre una cantante mexicana.

a) Después de ver la película, ella decidió aprender el español.

b) Después de ver la película, ella decidía aprender el español.

c) (a) y (b)
Muchos estudiantes han recibido las notas de los exámenes finales.

a) Muchos observan que ellos no estudiaron suficiente para el examen.
b) Muchos observan que no estudiaron suficiente para el examen.
c) (a) y (b)

Cuatro amigos tenían exámenes hoy. Acaban de ver que tendrán que escribirlos la semana siguiente por una tormenta de nieve.

a) Nadie acepta que no tendrá examen hoy.
b) Nadie acepta que él no tendrá examen hoy.
c) (a) y (b)
Fernando tiene seis gatos con su esposa Lidia.

a) Lidia encontró su primer gato hace veinte años.
b) Lidia encontraba su primer gato hace veinte años.
c) (a) y (b)

El bebé está llorando y la mamá sola intenta hacer todo lo posible para calmarle.

a) La mamá juega mientras ella canta una canción.
b) La mamá juega mientras canta una canción.
c) (a) y (b)
Cuando llegan los exámenes nadie tiene tiempo de hacer ejercicio. Todos se sienten cansados y sin energía.

a) Cada persona afirma que no hace suficiente ejercicio.
b) Cada persona afirma que él no hace suficiente ejercicio.
c) (a) y (b)
Mario trabajaba en la universidad como profesor y siempre hacía lo mismo en la clase.

a) En la clase de la historia de la lengua Mario enseñaba sobre español.

b) En la clase de la historia de la lengua Mario enseñó sobre español.

c) (a) y (b)
Hay 6 trabajadores en un departamento y va a haber 6 ascensos en la compañía.

a) La mayoría de la compañía sabe que recibirá un ascenso.
b) La mayoría de la compañía sabe que él recibirá un ascenso.
c) (a) y (b)

El profesor les explica a la clase qué tienen que leer cuando oigan un ruido afuera.

a) El profesor enseña la tarea mientras él abre la puerta.
b) El profesor enseña la tarea mientras abre la puerta.
c) (a) y (b)
La semana pasada Victoria pidió dos pizzas para la cena.

a) Cuando llegó a casa se comió una entera.
b) Cuando llegó a casa se comía una entera.
c) (a) y (b)

Tres grupos tienen que presentar un tema en la clase de ciencias. Después de cada presentación hay que responder a varias preguntas.

a) Muchos en la clase demuestran que conocen el tema.
b) Muchos en la clase demuestran que ellos conocen el tema.
c) (a) y (b)
Cada persona que trabaja en esa tienda viene al trabajo cansado.

a) Todos admiten que ellos se acuestan demasiado tarde.
b) Todos admiten que se acuestan demasiado tarde.
c) (a) y (b)

Alejandro fue a una fiesta cerca de la universidad con sus amigos. Ellos querían tomar cerveza y conocer gente.

a) Cuando Alejandro oía la voz de María, supo que quería estar con ella.
b) Cuando Alejandro oyó la voz de María, supo que quería estar con ella.
c) (a) y (b)
La mayoría de los estudiantes ya está terminando los cursos y está pensando en el futuro.

a) ¿Quiénes creen que ellos van a graduarse?
b) ¿Quiénes creen que van a graduarse?
c) (a) y (b)

Rodrigo tiene prisa. Tiene mucha hambre y tiene que hacer varias cosas antes de poder cenar.

a) Rodrigo contesta el email mientras él come una manzana.
b) Rodrigo contesta el email mientras come una manzana.
c) (a) y (b)
El año pasado mi papá trajo a casa una máquina que encontró en una tienda.

a) La máquina detectaba la cantidad de azúcar en la comida.
b) La máquina detectó la cantidad de azúcar en la comida.
c) (a) y (b)
Appendix B - Sentence Selection Task: Polish Version

Instructions:

W tym tekście państwo przeczytaj kontekst i zaraz po tym dwa zdania. Proszę zdecydować się, według swojej intuicji, które zdanie jest bardziej odpowiednie. Trzeba zdecydować czy jedno zdanie (a. lub b.) na samym końcu jest zdaniem logicznym według tego kontekstu na początku.

Jeżeli państwo sądzicie że obydwa zdania pasują, proszę wybrać (c) „a i b“.

Na przykład

**PRZYKŁAD 1**

Gdy moja mama była młoda, miała wielu chłopaków.

a) Każdy chciał wyspać z nią na kawę.
b) Każdy chciał wyspać z nią na kawę.
c) (a) i (b)
PRZYKŁAD 2

Jan i Maryla byli głodni i mieli ochotę na coś słonego. Poszli do restauracji na kolacje.

a) Jan wybrał pizze z szynką.
b) Maryla wybierała frytki.
c) (a) i (b)

PROSZĘ ZACZĄĆ

Justyna i Aleksander chcieli pójść do kina po południu ale Justyna się długo ociągała.

a) W końcu przychodzili za późno żeby zobaczyć film.
b) W końcu przyszli za późno żeby zobaczyć film.
c) (a) i (b)
Karolina i Kasia chciały pojechać na wakacje do Japonii.

a) Karolina oszczędzała pieniądze przez dwa lata aby mogła pojechać.
b) Kasia oszczędziła pieniądze przez dwa lata aby mogła pojechać.
c) (a) i (b)

Grupa kolegów chodzi na tańce w każdy weekend. Piją przynajmniej pięć piw.

a) Nikt nie wierzy, że on za dużo pije.
b) Nikt nie wierzy, że za dużo pije.
c) (a) i (b)
Maryla jest bardzo zarożumiała i korzysta z każdej okazji, żeby się przeglądać w lustrze.

a) Maryla się przegląda w lustrze podczas gdy myje zęby.
b) Maryla się przegląda w lustrze podczas gdy ona myje zęby.
c) (a) i (b)

Jan i Maryla byli głodni i mieli ochotę na coś słonego. Poszli do restauracji na kolację.

a) Maryla wybierała frytki.
b) Jan wybrał pizze z szynką.
c) (a) i (b)
Przyjaciele spędzili cały weekend ucząc się na egzamin. Przed egzaminem pytają się:

a) Kto myśli że on zaliczy egzamin?
b) Kto myśli że zaliczy egzamin?
c) (a) i (b)

Wszyscy w klasie znają się bardzo dobrze. Uczyli się pilnie do tego egzaminu.

a) Każdy w klasie myśli, że zaliczy ten egzamin.
b) Każdy w klasie myśli, że on zaliczy ten egzamin.
c) (a) i (b)
Jest siedmiu pracowników na wydziale i szykuje się sześć awansów w kompanii.

a) Większość pracowników wie, że otrzyma awans.
b) Większość pracowników wie, że on otrzyma awans.
c) (a) i (b)

Każdego lata Ania i Gosia chodziły do muzeum sztuki i spędzały tam mnóstwo czasu.

a) Za każdym razem jak wracały do domu, Anie bolały stopy.
b) Za każdym razem jak wracały do domu, Anie zabolały stopy.
c) (a) i (b)
Rada Miejska rządzi by wszyscy zmniejszyli zużycie wody. Dzwonią po domach z pytaniem o dzienne zużycie wody.

a) Wiele osób mowi, że oni zużywają mniej wody.
b) Wiele osób mowi, że zużywają mniej wody.
c) (a) i (b)

Trzech kolegów planuje wycieczkę do Meksyku w grudniu. Oni chcą wiedzieć:

a) Kto sądzi że pojedzie do Meksyku?
b) Kto sądzi że on pojedzie do Meksyku?
c) (a) i (b)
Monika chciała upiec ciasto z okazji urodzin swojej mamy.

a) Monika przygotowała składniki kiedy zobaczyła, że nie ma wystarczająco mleka.
b) Monika przygotowywała składniki kiedy zobaczyła, że nie ma wystarczająco mleka.
c) (a) i (b)

Jan zawsze robi tysiąc rzeczy na raz i zawsze wisi na telefonie.

a) Jan przechodzi przez ulice podczas gdy on rozmawia przez telefon.
b) Jan przechodzi przez ulice podczas gdy rozmawia przez telefon.
c) (a) i (b)
Ta grupa kolegów jest bardzo zrozumiała i dumna.

a) Wszyscy myślą, że mają najładniejszą dziewczynę.
b) Wszyscy myślą, że oni mają najładniejszą dziewczynę.
c) (a) i (b)

Ramona i Monika spędziły cały dzień na plaży.

a) Ramona wypiła dwa litry wody.
b) Monika piła dwa litry wody.
c) (a) i (b)
Przyjaciele bawią się na plaży, ale nie wejdą do wody bo się boją.

a) Którzy sądzą, że oni nie умеją pływać?
b) Któżry sądzą, że nie умеją pływać?
c) (a) i (b)

Pięciu autorów chce zdobyć nagrodę za najlepszą nowele roku.

a) Nikt nie rozumie dlaczego nie zdobył nagrody.
b) Nikt nie rozumie dlaczego on nie zdobył nagrody.
c) (a) i (b)
W zeszłym tygodniu Wiktoria zamówiła dwie pizze na kolację.

a) Kiedy dotarła do domu zjadła jedną w całości.
b) Kiedy dotarła do domu jadła jedną w całości.
c) (a) i (b)

Mariana jest prezenterką w programie kulinarnym.

a) Mariana gotuje podczas gdy tłumaczy jak przygotowywać składniki.
b) Mariana gotuje podczas gdy ona tłumaczy jak przygotowywać składniki.
c) (a) i (b)
W tym roku jest pięć nagród na wyjazd do Meksyku. Tylko pięć osób brało udział w konkursie.

a) Każdy wierzy, że on wygra podróż do Meksyku.
b) Każdy wierzy, że wygra podróż do Meksyku.
c) (a) i (b)

Robert i Paweł pracowali razem przy konstrukcji domów gdy byli młodzi.

a) Co miesiąc, Paweł zbudował domy dla wielu rodzin.
b) Co miesiąc, Robert budował domy dla wielu rodzin.
c) (a) i (b)
Trzy pary przyjaciół już ma dzieci. Kiedy są razem, bawią się z dziećmi ale to ich męczy.

a) Większość przyjaciół wie, że on nie chce mieć więcej dzieci.
b) Większość przyjaciół wie, że nie chce mieć więcej dzieci.
c) (a) i (b)

Studenci zawsze solidnie uczą się w weekendy. Profesorka się ich pyta:

a) Kto myśli że jest najmądrzejszym z całej klasy?
b) Kto myśli że on jest najmądrzejszym z całej klasy?
c) (a) i (b)
Mama Lucyny chciała urodzić w szpitalu ale nie miała samochodu.

a) Dlatego Lucynaродziła się w domu swojej babci.
b) Dlatego Lucyna urodziła się w domu swojej babci.
c) (a) i (b)

Studenci biznesu już mają dosyć uczenia się do egzaminów. Zakończenie jest za tydzień.

a) Wielu tylko myśli, że zaliczą studia.
b) Wielu tylko myśli, że oni zaliczą studia.
c) (a) i (b)
Robert jest w pośpiechu. Jest głodny a musi załatwić kilka spraw zanim siądzie do kolacji.

a) Robert odpowiada na e-mail podczas gdy on je jabłko.
b) Robert odpowiada na e-mail podczas gdy je jabłko.
c) (a) i (b)

Rodzice Karola zawsze mówią w domu po polsku.

a) Karol nie rozumie dlaczego nigdy się nie uczył języka rodziców.
b) Karol nie rozumie dlaczego nigdy się nie nauczył języka rodziców.
c) (a) i (b)
Jest konkurs na znalezienie 5 ukrytych skarbów.

a) Wszyscy uczestnicy ogłaszają, że odnajdą wszystkie skarby.
b) Wszyscy uczestnicy ogłaszają, że oni odnajdą wszystkie skarby.
c) (a) i (b)

Studenci dopiero co dostali oceny za egzamin który napisali tydzień temu. Nie wszyscy są zadowoleni rezultatami.

a) Którzy studenci myślą, że nie uczyli się wystarczająco na egzamin?
b) Którzy studenci myślą, że oni nie uczyli się wystarczając na egzamin?
c) (a) i (b)
Dwa lata temu Maryla mieszkała we Francji a Józek mieszkał w Niemczech.

a) Maryla odwiedzała go w Niemczech co miesiąc.

b) Józek zwiedzał ją we Francji co miesiąc.

c) (a) i (b)

Karol lubi mieć dużo czasu rano żeby móc zjeść domowe śniadanie ze smakiem.

a) Karol czyta czasopismo podczas gdy popija kawę.

b) Karol czyta czasopismo podczas gdy on popija kawę.

c) (a) i (b)
Cała rodzina jest w domu cioci Maryli. Ona zawsze parzy najlepszą kawę i herbatę.

a) Nikt nie wie czy on woli herbatę czy kawę.
b) Nikt nie wie czy woli herbatę czy kawę.
c) (a) i (b)

Julian i Janusz mieli po dziesięć lat gdy się poznali. Spędzali dużo czasu razem.

a) Gdy się poznali, Julian jadał dużo cukierków codziennie po szkole.
b) Gdy się poznali, Julian zjadł dużo cukierków codziennie po szkole.
c) (a) i (b)
Gdy przychodzą egzaminy, nikt nie ma czasu żeby robić ćwiczenia. Wszyscy się czują zmęczeni i bez energii.

a) Każdy przyznaje, że nie robi wystarczająco ćwiczeń.
b) Każdy przyznaje, że on nie robi wystarczająco ćwiczeń.
c) (a) i (b)

Wielu uczniów otrzymało stopnie z końcowych egzaminów.

a) Wielu z nich zauważyło, że oni nie uczyli się wystarczająco do tego egzaminu.
b) Wielu z nich zauważyło, że nie uczyli się wystarczająco do egzaminu.
c) (a) i (b)
Michał pojechał na wakacje ze swoim kolegą Karolem i jego rodziną.

a) To było tam gdzie odkrył, że lubi plaże.
b) To było tam gdzie odkrywał, że lubi plaże.
c) (a) i (b)

Niektrzrzy współpracownicy dostali więcej pieniędzy tydzień temu bo przepracowali więcej godzin.

a) Którzy pracownicy są zadowoleni, że dostali pieniądze?
b) Którzy pracownicy są zadowoleni, że oni dostali pieniądze?
c) (a) i (b)
Mama wróciła do domu i wszyscy byli w dużym pokoju w trakcie rozmowy. Mama chce się dowiedzieć, co chcą na kolacji.

a) Większość rodziny potwierdziła, że on nie chciał brokułów na kolacji.
b) Większość rodziny potwierdziła, że nie chciał brokułów na kolacji.
c) (a) i (b)

Piętnaście lat temu Jennifer obejrzała film o pewnej piosenkarce meksykańskiej.

a) Po obejrzeniu filmu decydowała się na naukę hiszpańskiego.
b) Po obejrzeniu filmu zdecydowała się na naukę hiszpańskiego.
c) (a) i (b)
Cała klasa przerobiła to samo na klasówce. Wygląda na to, że jest coś czego nigdy nie widziano na lekcjach.

a) Wszyscy się skarżą, że oni nie znają odpowiedzi.
b) Wszyscy się skarżą, że nie znają odpowiedzi.
c) (a) i (b)

Odźwierny wie, że nie powinien używać telefonu gdy pracuje ale oczekuje wiadomości od swojej żony.

a) Odźwierny otwiera drzwi podczas gdy patrzy na telefon.
b) Odźwierny otwiera drzwi podczas gdy on patrzy na telefon.
c) (a) i (b)
Marek pracował na uniwersytecie jako profesor i zawsze robił to samo w klasie.

a) Na wykładzie z historii języka, Marek uczył o hiszpańskim.
b) Na wykładzie z historii języka, Marek nauczył o hiszpańskim.
c) (a) i (b)

Czterech współpracowników ma zebranie za godzine z szefem. Oni chcą wiedzieć:

a) Kto wie że on dostanie awans?
b) Kto wie że dostanie awans?
c) (a) i (b)
W każdej klasie profesorka zadaje pytania na temat lektur.

a) Każdy myśli, że on zrozumiał lektury.
b) Każdy myśli, że zrozumiał lektury.
c) (a) i (b)

W zeszłym roku mój tato przyniósł do domu maszynę, którą znalazł w jakimś sklepie.

a) Maszyna ustalała ilość cukru w jedzeniu.
b) Maszyna ustaliła ilość cukru w jedzeniu.
c) (a) i (b)
Każdy kto pracuje w tym sklepie przychodzi do pracy zmęczony.

a) Wszyscy przyznają, że oni się kładą spać za późno.
b) Wszyscy przyznają, że się kładą spać za późno.
c) (a) i (b)

Nikt na wydziale nigdy nie miał do czynienia z matematyką. Teraz przyszło im zrozumieć w jaki sposób działa program statystyczny.

a) Większość na wydziale wyjaśnia, że jest niezdolny żeby się nauczyć statystyki.
b) Większość na wydziale wyjaśnia, że on jest niezdolny żeby się nauczyć statystyki.
c) (a) i (b)
Olek poszedł z kolegami na zabawę w pobliżu uniwersytetu. Chcieli napić się piwa i poznać ludzi.

a) Kiedy Olek usłyszał głos Marii wiedział, że chciał być z nią.
b) Kiedy Olek słyszał głos Marii wiedział, że chciał być z nią.
c) (a) i (b)

Niemowlę płacze i mama sama próbuje zrobić wszystko, żeby je uspokoić.

a) Mama zabawia niemowlaka podczas gdy ona śpiewa piosenkę.
b) Mama zabawia niemowlaka podczas gdy śpiewa piosenkę.
c) (a) i (b)
Większość studentów już kończy przedmioty i zaczyna myśleć o przyszłości.

a) Któżry studenci myślą, że oni skończą studia?
b) Któżry studenci myślą, że skończą studia?
c) (a) i (b)

Jako dziecko, Gerard nie był pilny w klasie i nikt nie wiedział dlaczego.

a) Gerard nie widział za dobrze bez okularów.
b) Gerard nie zobaczył za dobrze bez okularów.
c) (a) i (b)
Trzy grupy mają zaprezentować temat na lekcji biologii. Po każdej prezentacji trzeba odpowiedzieć na różne pytania.

a) Wielu w klasie demonstruje, że znają temat.
b) Wielu w klasie demonstruje, że oni znają temat.
c) (a) i (b)

Profesor tłumaczył klasie, co mają przeczytać gdy usłyszał hałas na zewnątrz.

a) Profesor zadaje prace domową podczas gdy on otwiera drzwi.
b) Profesor zadaje prace domową podczas gdy otwiera drzwi.
c) (a) i (b)
Franek razem z żoną Lidią ma sześć kotów.

a) Lidia znajdowała swojego pierwszego kota dwadzieścia lat temu.
b) Lidia znalazła swojego pierwszego kota dwadzieścia lat temu.
c) (a) i (b)

Czterech przyjaciół miało mieć dziś egzaminy. Właśnie się dowiedzieli, że będą je pisać w przyszłym tygodniu z powodu śnieżycy.

a) Nikt nie akceptuje, że nie bedzie miał dziś egzaminu.
b) Nikt nie akceptuje, że on nie bedzie miał dziś egzaminu.
c) (a) i (b)
Gdy moja mama była młoda, miała wielu chłopaków.

a) Każdy chciał wyjść z nią na kawę.
b) Każdy chciał wyjść z nią na kawę.
c) (a) i (b)
Appendix C - Picture Matching Task: Spanish Version

Instructions

En esta prueba no hay sólo una respuesta correcta. Me interesan sus intuiciones gramaticales en español. Por favor, lea la primera frase y escoja cuál dibujo (A o B) mejor representa la frase final abajo la diapositiva.

Por favor, responda según las primeras intuiciones que tenga.

Por ejemplo:

![Ejemplo: 1](image)

Dos chicos están contestando varias preguntas.

Nadie sabe por qué los chicos están contentos.

Respuesta - A
Ejemplo: 2
Dos equipos están jugando fútbol.

Todo el mundo ve que el chico rubio no tiene los zapatos atados.

Respuesta - B

Ejemplo: 3
Es tiempo de las elecciones en la ciudad.

Todos ven que el hombre da un discurso.

Respuesta - B
SE PUEDE EMPEZAR

1

Los chicos tienen que lavar el coche para los padres.

Ninguna persona ve que ese grupo de amigos usa mucha agua.

2

En el baño...

María se mira por el espejo mientras ella se lava los dientes.
Los tres amigos van a discutir un libro nuevo en la clase de literatura.

Ninguno de los tres amigos tiene el libro.

Los estudiantes tienen un examen en la clase de inglés.

¿Quién piensa que aprobará el examen?
Los alumnos están en la clase de matemáticas.

Todo el mundo piensa que la clase es fácil.

Los amigos están en el museo con la clase de historia.

Nadie admite que él tiene miedo.
Los empleados están esperando las noticias.

La mayoría de la compañía sabe que recibirá un ascenso.

Es tarde y la familia está despierta.

Todos admiten que se acuestan demasiado tarde.
En el centro...

Juan cruza la calle mientras él habla por el teléfono.

Los estudiantes escribieron un examen ayer en la clase de francés.

¿Quiénes creen que ellos no estudiaron suficiente para el examen?
Dos chicos están contestando varias preguntas.

Nadie sabe por qué los chicos están contentos.

Los amigos en la clase estudian mucho para sacar buenas notas.

¿Quién piensa que es el más inteligente de la clase?
Los estudiantes sólo tienen unos meses de la universidad.

Muchos sólo piensan en que ellos van a graduarse.

Los amigos están en la piscina.

¿Quiénes piensan que no saben nadar?
En el laboratorio...

Rodrigo contesta el email mientras él come una manzana.

Dos equipos están jugando fútbol.

Todo el mundo ve que el chico rubio tiene que atar los zapatos.
Las colegas oyeron que tienen que aprender estadísticas.

La mayoría del departamento aclara que es incapaz de aprender estadísticas.

Todo está empacado y listo para la mudanza.

Todos anuncian que ellos se mudan este fin de semana.
Los empleados tienen una reunión.

¿Quién sabe que él recibirá un ascenso?

En el café en el centro...

Carlos lee el periódico mientras toma un café.
Los alumnos acaban de recibir dinero por el trabajo que hicieron el fin de semana.

¿Quiénes están contentos que recibieron dinero?

Los niños acaban de correr la carrera.

Nadie entiende por qué él ganó el premio.
Es el primer día de clases después de las vacaciones navideñas.

La mayoría de la clase sabe que él no hizo la tarea.

Los amigos escribieron un examen y respondieron mal a la misma pregunta.

Todos se quejan de que no saben las respuestas.
En el gimnasio de la escuela...

La mamá juega baloncesto mientras ella canta una canción.

Había un examen ayer en la clase de física.

Muchos dicen que ellos no estudiaron para el examen.
Los amigos están planeando para el futuro.

¿Quiénes creen que ellos van a graduarse?

Los estudiantes están en la clase de historia.

Todos los hombres escuchan la lectura.
Los primos están en un restaurante. Ya han cenado.

Nadie sabe si prefieren té o café.

Los chicos decidieron lavar el coche.

Todos ven que ellos usan poca agua para lavar el coche.
Los amigos están discutiendo la posibilidad de ir a México.

¿Quién cree que él se irá a México?

En el hotel de cinco estrellas...

El portero abre la puerta mientras mira su teléfono.
Los niños se juntaron para cenar juntos.

La mayoría del grupo cree que él come demasiadas hamburguesas.

Los alumnos trabajaron ayudando a los maestros durante el fin de semana.

Muchos están contentos de que recibieron dinero.
El profesor está enseñando en la clase de arte.

El profesor enseña la obra mientras abre la puerta.

Es tiempo de las elecciones en la ciudad.

Todos ven que el chico está votando.
En la clase de matemáticas los alumnos están aprendiendo algo nuevo.

Muchos creen que ellos conocen el tema.

Los estudiantes tienen un examen en la clase de inglés.

¿Quién piensa que él aprobará el examen?
Los empleados están esperando las noticias.

La mayoría de la compañía sabe que él recibirá un ascenso.

Dos chicos están contestando varias preguntas.

Nadie sabe por qué los chicos no están contentos.
En el baño...

María se mira por el espejo mientras se lava los dientes.

Los chicos decidieron lavar el coche.

Todos ven que usan poca agua para lavar el coche.
Los amigos están en el museo con la clase de historia.

Nadie menciona que tiene miedo.

Los amigos están en la piscina.

¿Quiénes piensan que ellos no saben nadar?
En la clase de matemáticas los alumnos están aprendiendo algo nuevo.

Muchos admiten que conocen el tema.

Los primos están en un restaurante. Ya han cenado.

Nadie sabe si él prefiere té o café.
En el centro...

Juan cruza la calle mientras habla por el teléfono.

Las colegas oyeron que tienen que aprender estadísticas.

La mayoría del departamento aclara que él es incapaz de aprender estadísticas.
Los niños están en una fiesta de cumpleaños.

Nadie considera que come demasiadas hamburguesas.

Los estudiantes sólo tienen unos meses de la universidad.

Muchos sólo piensan en que van a graduarse.
Es tarde y la familia está despierta.

Todos admiten que ellos se acuestan demasiado tarde.

Los amigos en la clase estudian mucho para sacar buenas notas.

¿Quién piensa que él es el más inteligente de la clase?
Los alumnos acaban de recibir dinero por el trabajo que hicieron el fin de semana.

¿Quiénes están contentos de que ellos recibieron dinero?

En la cocina...

Mariana cocina mientras ella habla.
Los chicos tienen que lavar el coche para los padres.

A

B

Ninguna persona ve que ese grupo de amigos usa poca agua.

Los niños acaban de correr la carrera.

A

B

Nadie entiende por qué ganó el premio.
Los alumnos están en la clase de matemáticas.

Todo el mundo piensa que la clase no es fácil.

Todo está empacado y listo para la mudanza.

Todos anuncian que se mudan este fin de semana.
Los empleados tienen una reunión.

¿Quién sabe que recibirá un ascenso?

Había un examen ayer en la clase de física.

Muchos dicen que no estudiaron para el examen.
En el laboratorio...

Rodrigo contesta el email mientras come una manzana.

Los niños se juntaron para cenar juntos.

La mayoría del grupo cree que come demasiadas hamburguesas.
Dos equipos están jugando fútbol.

Todo el mundo ve que el chico rubio tiene los zapatos atados.

Los amigos están planeando para el futuro.

¿Quiénes creen que van a graduarse?
En el café en el centro...

Carlos lee el periódico mientras él toma un café.

Los alumnos trabajaron ayudando a los maestros durante el fin de semana.

Muchos están contentos de que ellos recibieron dinero.
Los tres amigos van a discutir un libro nuevo en la clase de literatura.

Cada uno de los tres amigos trajo el libro, pero no lo quiere discutir.

En la cocina...

Mariana cocina mientras habla.
Es el primer día de clases después de las vacaciones navideñas.

La mayoría de la clase sabe que no hizo la tarea.

En el gimnasio de la escuela...

La mamá juega baloncesto mientras canta una canción.
Los estudiantes escribieron un examen ayer en la clase de francés.

¿Quiénes creen que no estudiaron suficiente para el examen?

Los amigos escribieron un examen y respondieron mal a la misma pregunta.

Todos se quejan de que ellos no saben las respuestas.
En el hotel de cinco estrellas...

El portero abre la puerta mientras él mira su teléfono.

Los amigos están discutiendo la posibilidad de ir a México.

¿Quién cree que se irá a México?
Es tiempo de las elecciones en la ciudad.

Todos ven que el hombre da un discurso.

Los niños están en una fiesta de cumpleaños.

Nadie considera que él come demasiadas hamburguesas.
Los estudiantes están en la clase de historia.

Todos los hombres leen la lectura.

El profesor está enseñando en la clase de arte.

El profesor enseña la obra mientras él abre la puerta.
Appendix D - Picture Matching Task: Polish Version

Instructions:

W tej pracy nie ma tylko jednej odpowiedzi poprawnej. Interesuję się Państwa intuicją w języku polskim. Proszę przeczytać główne zdanie, i wybrać który obrazek (A lub B) najlepiej prezentuje zdanie na samym dle strony.

Proszę odpowiedzieć według swego pierwszego przeczucia.

Na przykład:

Na przykład: 1

Dwóch chłopców odpowiada na różne pytania.

A  B

Nikt nie wie dlaczego chłopcy są zadowoleni.

Odpowiedź - A
Na przykład: 2

Dwie drużyny grają w piłkę nożną.

Każda osoba widzi że blondyn ma rozwiązané buty.

Odpowiedź - B

Na przykład: 3

Nadszedł czas na wybory w mieście.

Wszyscy widzą, że mężczyzna tłumaczy swoje plany polityczne na miasto.

Odpowiedź - B
Studenci są na historii.

Wszyscy mężczyźni słuchają czytania.
Przyjaciele w klasie dużo uczą się aby dostać dobre oceny.

Kto myśli że jest najmądrzejszym z całej klasy?

W centrum...

Janek przechodzi przez ulice podczas gdy on rozmawia przez telefon.
Chłopcy muszą umyć auto rodzicom.

Żadna osoba nie widzi, że ta grupa kolegów zużywa dużo wody.

Dzieci dopiero co skończyły wyścigi.

Nikt nie rozumie dlaczego on nie wygrał pierwszej nagrody.
Studenci napisali egzamin wczoraj z francuskiego.

Którzy myślą że oni nie uczyli się wystarczająco na egzamin?

Dwie drużyny grają w piłke nożną.

Każda osoba widzi że blondyn ma buty zawiązane.
Współpracownicy usłyszeli że muszą się nauczyć statystyki.

Większość wydziału wyjaśnia, że nie jest zdolny żeby się nauczyć statystyki.

W gimnazjum...

Matka bawi się podczas gdy śpiewa piosenkę.
Nadszedł czas wyborów w mieście.

Wszyscy widzą, że mężczyzna głosuje.

Studentom zostało tylko parę miesięcy na studiach.

Wielu myśli tylko o tym, że oni skończą studia.
Jest późno i rodzina jeszcze nie śpi.

Wszyscy przyznają, że się kładą spać za późno.

Studenci są w klasie na matematyce.

Wszyscy myślą, że lekcja jest łatwa.
Studenci dopiero co dostali wypłatę za pracę którą wykonywali przez weekend.

Którzy są zadowoleni że oni dostali pieniądze?

Trzech kolegów ma dyskutować o nowej książce na lekcji z literatury.

Żaden z trzech kolegów nie ma książki.
W łazience...

Marta patrzy w lustro podczas gdy ona myje zęby.

Kuzyni są w restauracji. Już zjedli obiad.

Nikt nie wie czy woli herbatę czy kawę.
Dwóch chłopców odpowiada na różne pytania.

Nikt nie wie dlaczego chłopcy są zadowoleni.

Studenci mają egzamin z angielskiego.

Kto myśli, że on zaliczy egzamin?
Pracownicy czekają na wiadomości.

Większość pracowników wie że otrzyma awans.

Dwie drużyny grają w piłkę nożną.

Każda osoba widzi że blondyn ma buty rozwiązane.
Wczoraj na fizyce był egzamin.

Wielu mówi że nie uczyli się na egzamin.

Przyjaciele dyskutują możliwość wyjazdu na wycieczkę do Meksyku.

Kto sądzi że on pojedzie do Meksyku?
Profesor uczy sztuki.  

A

B

Profesor uczy sztuki podczas gdy on otwiera drzwi.

Przyjaciele napisali egzamin i żle odpowiedzieli na te same pytanie.  

A

B

Wszyscy narzekają, że nie znają odpowiedzi.
26

Przyjaciele są w muzeum na wycieczce.

Nikt nie przyznaje że on się boi.

27

Przyjaciele są na basanie.

Którzy sądzą że nie umiej pływać?
Nadszedł czas wyborów w mieście.

Wszyscy widzą, że mężczyzna tłumaczy swoje plany polityczne na miasto.

Jest pierwszy dzień szkoły po feriach.

Większość studentów wie że nie odrobił lekcji.
Studenci pracowali przez weekend pomagając nauczycielom.

Wielu jest zadowolonych, ponieważ otrzymali pieniądze.

W kuchni...

Ela gotuje podczas gdy ona rozmawia.
Przyjaciele planują swoją przyszłość.

Którzy myślą że skończą studia?

Chłopcy zdecydowali umyć samochód.

Wszyscy widzą, że zużywają mniej wody na myciu samochodu.
W hotelu...

Odżwierny otwiera drzwi podczas gdy on patrzy na swój telefon.

Dzieci są na przyjęciach urodzinowych.

Nikt nie bierze pod uwagę tego, że on je za dużo hamburgerów.
Współpracownicy usłyszeli że muszą się nauczyć statystyki.

Większość wydziału wyjaśnia, że on nie jest zdolny żeby się nauczyć statystyki.

Współpracownicy mają zebranie.

Kto wie że on dostanie awans?
W laboratorium...

Robert odpowiada na e-maile podczas gdy on je jabłko.

Wszystko jest zapakowane i gotowe na przeprowadzkę.

Wszyscy ogłaszają, że oni się przeprowadzają w ten weekend.
Przyjaciele w klasie dużo uczą się aby dostać dobre oceny.

Kto myśli że on jest najmądrzejszym z całej klasy?

W restauracji w centrum...

Krzysztof czyta gazetę podczas gdy pije kawę.
Kuzyni są w restauracji. Już zjedli objad.

Nikt nie wie czy on woli herbatę czy kawę.

Przyjaciele spotkali się na obiad.

Więcej grupy sądzi że on je za dużo hamburgerów.
Studenci napisali egzamin wczoraj z francuskiego.

Którzy myślą, że nie uczyli się wystarczająco na egzamin?

Przyjaciele napisali egzamin i żle odpowiedzieli na te same pytanie.

Wszyscy narzekają, że oni nie znają odpowiedzi.
W łazience...

Marta patrzy w lustro podczas gdy myje zęby.

Na lekcjach matematyki, studenci się uczą czegoś nowego.

Wielu w klasie potwierdza, że oni się znają na temacie.
Przyjaciele planują swoją przyszłość.

Którzy myślą że oni skończą studia?

W gimnazjum...

Matka bawi się podczas gdy ona śpiewa piosenkę.
Pracownicy czekają na wiadomości.

Większość pracowników wie że on otrzyma awans.

Dzieci dopiero co skończyły wyścigi.

Nikt nie rozumie dlaczego nie wygrał pierwszej nagrody.
Wczoraj na fizyce był egzamin.

Wielu mówi że oni nie uczyli się na egzamin.

Przyjaciele są na basenie.

Którzy sądzą że oni nie umieją pływać?
Jest późno i rodzina jeszcze nie śpi.

Wszyscy przyznają, że oni się kładą spać za późno.

Przyjaciele dyskutują nad możliwością wycieczki do Meksyku.

Kto sądzi że pojedzie do Meksyku?
Profesor uczy sztuki.

A

B

Profesor uczy sztuki podczas gdy otwiera drzwi.

Studenci mają egzamin z angielskiego.

A

B

Kto myśli że zaliczy egzamin?
Chłopcy muszą umyć auto rodzicom.

Żadna osoba nie widzi, że ta grupa kolegów zużywa mało wody.

Na lekcjach matematyki, studenci się uczą czegoś nowego.

Wielu w klasie potwierdza, że się znają na temacie.
Wszystko jest zapakowane i gotowe do przeprowadzki.

Wszyscy ogłaszają, że się przeprowadzają w ten weekend.

W centrum...

Janek przechodzi przez ulice podczas gdy rozmawia przez telefon.
Przyjaciele są w muzeum na wycieczce.

Nikt nie przyznaje że się boi.

Jest pierwszy dzień szkoły po ferjach.

Większość studentów wie że on nie odrobił lekcji.
W kuchni...

Ela gotuje podczas gdy rozmawia.

Trzech kolegów ma dyskutować o nowej książce na lekcji z literatury.

Każdy z trzech kolegów przyniósł książkę.
Przyjaciele spotkali się na obiedzie.

Większość grupy sądzi że je za dużo hamburgerów.

Studenci pracowali przez weekend pomagając nauczycielom.

Wielu jest zadowolonych, ponieważ oni otrzymali pieniądze.
Współpracownicy mają zebranie.

Kto wie że dostanie awans?

W hotelu...

Odźwierny otwiera drzwi podczas gdy patrzy na swój telefon.
Studenci są w klasie na matematyce.

Wszyscy myślą, że lekcja nie jest łatwa.

Studentom zostało tylko parę miesięcy na studiach.

Wielu myśli tylko o tym, że skończą studia.
Studenci dopiero co dostali wypłatę za prace którą wykonywali w weekend.

Którzy są zadowoleni że dostali pieniądze?

W restauracji w centrum...

Krzysztof czyta gazetę podczas gdy on pije kawe.
Dwóch chłopców odpowiada na różne pytania.

Nikt nie wie dlaczego chłopacy są nie zadowoleni.

Dzieci są na przyjęciach urodzinowych.

Nikt nie bierze pod uwagę tego, że je za dużo hamburgerów.
W laboratorium...

Robert odpowiada na e-mail podczas gdy je jabłko.

Chłopcy zdecydowali się umyć samochód.

Wszyscy widzą, że oni zużywają mniej wody na mycie samochodu.
Studenci są na historii.

Wszyscy mężczyźni czytają czytanie.
Appendix E - Language Proficiency Judgements

Participant #

How native do these speakers sound in Spanish/Polish? For each category, choose “1” if they sound extremely foreign and “5” if they sound like native speakers.

<table>
<thead>
<tr>
<th>Category</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pronunciation</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>Vocabulary</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>Morphology</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>Syntax</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>Overall</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
</tbody>
</table>

Notes of specific problems:
Appendix F - Ethics Approval Certificate

Use of Human Subjects – Ethics Approval Notice

<table>
<thead>
<tr>
<th>Review Number</th>
<th>Approval Date</th>
<th>End Date</th>
</tr>
</thead>
</table>

Principal Investigator: Silvia Perpiñán

Protocol Title: Attrition at the level of the OPC: Polish and Spanish immigrants and second generation heritage speakers in Canada

This is to notify you that The University of Western Ontario Faculty of Arts and Humanities Research Ethics Board (AHREB) has granted expedited ethics approval to the above named research study on the date noted above.

The AHREB is a sub-REB of The University of Western Ontario’s Research Ethics Board for Non-Medical Research Involving Human Subjects (NMREB) which is organized and operates according to the Tri-Council Policy Statement and the applicable laws and regulations of Ontario. (See Office of Research Ethics web site: http://www.uwo.ca/research/ethics/)

This approval shall remain valid until end date noted above assuming timely and acceptable responses to the University’s periodic requests for surveillance and monitoring information.

During the course of the research, no deviations from, or changes to, the protocol or consent form may be initiated without prior written approval from the AHREB except when necessary to eliminate immediate hazards to the subject or when the change(s) involve only logistical or administrative aspects of the study (e.g. change of research assistant, telephone number etc). Subjects must receive a copy of the information/consent documentation.

Investigators must promptly report to the AHREB:
- changes increasing the risk to the participant(s) and/or affecting significantly the conduct of the study;
- all adverse and unexpected experiences or events that are both serious and unexpected;
- new information that may adversely affect the safety of the subjects or the conduct of the study.

If these changes/adverse events require a change to the information/consent documentation, and/or recruitment advertisement, the newly revised information/consent documentation, and/or advertisement, must be submitted to the AHREB for approval.

Members of the AHREB who are named as investigators in research studies, or declare a conflict of interest, do not participate in discussion related to, nor vote on, such studies when they are presented to the AHREB.

Ileana Paul
Chair, Faculty of Arts and Humanities Expedited Research Ethics Board (AHREB)

CC: UWO Office of Research Ethics

This is an official document. Please retain the original in your files.
Curriculum Vitae

Name: Ewelina Barski

Post-secondary Education and Degrees:
McMaster University
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2002-2007 B.A.

Western University
London, Ontario, Canada
2007-2013 Ph.D.

Honours and Awards: Mary Routledge Fellowship
2007

Graduate Teaching Assistant Award

University Students’ Council Teaching Honour Roll
2008-2009, 2009-2010

Western Graduate Research Thesis Award
2010

Lynne/Lionel Scott Scholarship
2010

Related Work Experience:
Teaching Assistant
Western University
2007-2012

Service Learning Coordinator
Western University
2011-2012

Sessional Lecturer
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