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Private speech in simultaneous and early Spanish/English bilinguals
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ABSTRACT
This study analyzed private speech in a group of sixty Spanish–English bilinguals. A Private Speech Questionnaire including questions about seven different conditions, that is, spiritual thinking (e.g., praying, meditating), dreaming, thinking, problem-solving, recalling past events, recalling information, and dealing with stress, was designed. Furthermore, the sample was divided into two subgroups: born in the United States (simultaneous bilinguals) and born outside the United States but arriving to the country before the age of 10 (early successive bilinguals). In both groups and for all the seven conditions, English was more frequently used in private speech, and English was also the dominant language in our participants. Early bilinguals, however, more frequently used Spanish in different private speech situations. These findings suggest that the linguistic environment during early life has a significant impact on the language selected in different internal language situations, but the dominant language is more frequently used in private speech conditions.

KEYWORDS
Private speech; simultaneous bilingualism; Spanish/English bilingualism; successive bilingualism; verbal thought

Introduction
The idea that there is a private speech—internal language for ourselves—has a long history. Beginning with Plato (Theaetetus 189e–190a and Sophist 263e) frequently has been proposed that thinking means to use a private speech; this idea has been expressed by diverse authors throughout history. Vygotsky (1934/2012) systematized the concept of inner speech when he referred to three different types of speech: “external speech” (or “social speech,” that is, the speech used in social interactions), “egocentric speech” (or “private speech,” the speech for ourselves), and “inner speech” (internalized social speech). Important to note, there is a process of “internalization” in which the first is transformed into the second and finally into the third. As a matter of fact, private speech represents a kind of halfway between “external” and “inner” speech but with very distinctive properties. Private speech is neither social communication nor silent thought, but vocalized thought (Ehrich, 2006; Jones, 2009; Vygotsky, 1934/2012).

The analysis of private speech, or the “activity of talking to oneself in silence” (Morin, 2012, p. 436), offers a window to the individual’s subjective world. The language we speak may also be used for recalling past-events, engaging in deep-thought, or thinking before giving a solution to a problem. Private speech plays an important role on diverse situations, including but not limited to memory, problem solving, thinking, and emotional release. Private speech may be converted in inner speech. Examples of inner speech include silently recalling past events, going over future plans, and creating mental scenarios to recreate a particular situation or solve a problem (Morin, 2012). According to Pavlenko (2011), inner speech is expressed in an identifiable linguistic code. Assuming that there is a language that we use for thinking and other subjective activities, the following question arises: What language do bilinguals prefer to use?

Larsen, Schrauf, Fromholt, and Rubin (2002) studied Polish immigrants in Denmark and their use of inner speech for autobiographical memories retrieval. The authors found that memory recalls in the native language (i.e., Polish) dropped significantly after immigration to Denmark. In addition, they found significant differences in inner speech usage relative to age of immigration. Those individuals who migrated later in adulthood tended to have more instances of inner speech in Polish when compared to those who migrated in their early years. Such findings might indicate that memory representation and retrieval are closely associated to the linguistic system in which those events (i.e., autobiographical) took place. Therefore, memories may be linguistically encoded and dependent on the
language in which the individual experienced those memories.

Grosjean (2010) conducted a survey with bilinguals and trilinguals in which the question “in what language you think” was presented; that is, what is the internal language (private speech) used to talk to ourselves: 70% of the participants replied “both languages” or “all languages” (for trilinguals). Grosjean considered that this answer is not surprising, because bilinguals use their languages for different purposes, in different domains of life, and with different people. Therefore, the private and inner speech in bilinguals can be either one, depending on the specific context.

Jimenez-Jimenez (2013) studied bilingual’s production of private speech during problem-solving tasks. Thirty bilingual individuals were divided into three groups: English dominant, Spanish dominant, and balanced bilinguals (i.e., individuals who expressed to be equally comfortable using both languages). The author concluded that language dominance plays a central role in the language participants’ used to express their verbalized thinking, especially when solving logic, mathematical, and visual-spatial problems. Instances of private speech were consistent with the dominant language of the individuals. Balanced bilinguals, however, use both languages fairly equally during different tasks. This study suggests that internal speech may be directly linked to language dominance: when individuals acquired higher levels of proficiency in both languages, they can encode “thought” in any of the languages available to them when encountered with problem-solving tasks. De Guerrero (2005) analyzed inner speech and mental rehearsal in second language (L2) in a sample of 472 Spanish-speaking university English as a second language (ESL) students. She concluded that inner speech serves the following functions: as a memory aid for L2 words, self-instructional, evaluative, preparatory, dialogic, play, and affective.

It has been suggested that L1 is preferred for emotional internal speech even when this language is partly attrited (Söter 2001). Dewaele (2011) studied 386 bi- and multilingual adults. Participants were proficient in both L1 and L2 and have a continuous active use of both languages. A quantitative analysis revealed participants preferred to use L1 for communicative feelings or anger, swearing, addressing their children, performing mental calculations, and using inner speech. They also perceived their L1 to be emotionally stronger than their L2 and reported lower levels of communicative anxiety in their L1. Participants reported that their multilingualism and multiculturalism gave them a sense of empowerment and a feeling of freedom. Using an extended sample of 1,459 multilinguals (1,040 females, 419 males) speaking a total of 77 different L1s, a further analysis of internal speech in bilinguals and multilinguals was advanced. There were 221 bilinguals, 362 trilinguals, 390 quadrilinguals, and 486 pentalinguals. Data were collected through an on-line questionnaire (Dewaele & Pavlenko, 2001–2003). Analysis of variance (ANOVAs) confirmed that languages acquired later in life are less likely to be used for internal (emotional) speech compared to early acquired languages. Significant differences in language choice for general use, inner speech, and inner emotional speech in the L2, L3, L4, and L5 were disclosed. These languages were used less frequently for inner speech than for general use and even less frequently for emotional inner speech.

Similarly, a study by Dewaele (2015) compared the language preferences of 1,454 adult multilinguals for inner speech and for emotional inner speech in their different languages. It was found that bilinguals tend to use their first dominant language for emotional internal dialogs (i.e., “the language of the heart”). Language dominance was again a determining factor for recreating feelings and expressing anger. Those individuals who acquired a second language (L2) later in life significantly reported using their native/dominant language (L1) more frequently for emotional internal speech expression. However, when individuals do use their L1 and become totally assimilated in the L2 culture, L1 ceases to serve this function, and L2 becomes the preferred language for emotional internal speech.

Language used in dreaming represents a very idiosyncratic type of communication. Grosjean (2010) found in a survey that almost as many bilinguals as trilinguals (64% in all) said that they dreamed in one or the other language, depending on the dream (when a language was involved, of course). The conclusion seems evident: depending on the situation and the person we are dreaming about, we will use the one language, the other, or both. Grosjean refers to the interesting observation that some people have reported speaking a language fluently in a dream when they are not actually fluent in that language.

These studies suggest that language dominance, age of acquisition, and language use play an important role in determining the language of choice for private speech. This can be observed in the way bilinguals use it when recalling autobiographical experiences, solving logic, and mathematical problems and feel anger and emotion.

The present study was aimed to find what language is used in different private speech tasks; two groups of Spanish/English bilinguals were analyzed: simultaneous bilinguals, and early sequential bilinguals.
**Method**

**Participants**

Sixty participants from south Florida, 23 males and 37 females between the ages of 18 and 40 (mean age $= 28.08; SD = 5.13$) were selected. Participants were separated into the following two groups: (1) 29 participants born in the United States (20 females, 9 males) and (2) 31 participants born outside of the United States (17 females, 14 males). The first group met the following criteria: born in the United States, raised in a Spanish-speaking household with Spanish as their first language, but exposed to English since early in life (simultaneous bilinguals). The second group was composed by participants born in a Spanish speaking country and migrated to the United States before the age of ten (early sequential bilinguals). For the 31 participants born aboard, the mean age of arrival to United States was 6.2 years ($SD = 3.2$). For all the subjects, parents were Latin American native Spanish speakers and the home language during childhood was Spanish. None of the participants had a history of language development delay, dyslexia, or any neurological condition, such as traumatic head injury or epilepsy.

**Instruments**

**Bilingual questionnaire**

A Bilingual Questionnaire adapted from Paradis (1987) was employed to obtain demographic information, the percentage of Spanish and English used per day, and the participant’s own proficiency ratings in Spanish and English based on a scale from 1 (almost nothing) to 7 (excellent) while speaking and reading in each language. The percentage of participants who reported English as the language spoken at home was 3%, Spanish 45%, and a combination of English and Spanish constituted 52%. The majority of participants (66%) reported speaking English to siblings, 24% reported speaking both Spanish and English to siblings, and only 10% reported speaking Spanish to siblings. In comparison, the language(s) spoken to parents was 35% (Spanish) and 65% (both English & Spanish). Participants rated themselves as to their English and Spanish reading proficiency, as well as their English and Spanish speaking proficiency: 96% of the participants considered that his/her ability to speak and read English was excellent or very good; only 84% considered his/her spoken Spanish excellent/very good; and 81% of the participants stated that they could read Spanish excellent or very good.

There was a diverse level of education within the participants; 12 earned their high school diploma, 1 received a GED, 5 earned their associate’s degree, 22 earned their bachelor’s degree, 18 earned their master’s degree, and 2 obtained their PhD.

**Inner speech questionnaire**

A Private Speech Questionnaire was developed including different areas. The following seven questions were used:

1. What language do you use for spiritual thinking (e.g., praying, meditating)?
2. In what language do you dream?
3. When you engage in thinking (e.g., planning, reflecting), what language do you use?
4. What language do you use for problem solving or reasoning (e.g., solving math problems)?
5. In what language do you recall past events or autobiographical experiences (i.e., childhood experiences, anecdotal events)?
6. What language do you use to recall knowledge (e.g., recipes, think about a movie you saw, or a book you read)?
7. When faced with a high stress situation, which language do you automatically think in?

Participants were asked to answer questions based on an ordinal scale in multiple choice format from (a) English, (b) mostly English, (c) Spanish, (d) mostly Spanish, to (e) both. Choices (a) English and (b) Mostly English were further merged into one category (English) as well as choices (c) Spanish and (d) Mostly Spanish into one Spanish category. As a result, only three categories were used: English/mostly English, Spanish/mostly Spanish, and both.

**Procedure**

Written consent was obtained from each participant prior to initiating the study. Each participant filled out the Bilingualism Questionnaire and the Private Speech Questionnaire. Instructions were presented in English because English was the dominant language in both groups of bilinguals.

**Results**

Table 1 shows the general results obtained. It is evident that participants overwhelmingly chose English as the language they use for private speech. However, some differences can be observed between the two groups. In contrast to individuals born in the United States, those who were born in Spanish-speaking countries more frequently used Spanish in each situation presented in the questions in the private speech questionnaire. These
results suggest that the individual’s dominant language becomes predominant for private speech.

Those participants who were born outside of the United States had a longer experience with Spanish. They lived a portion of their childhoods immersed in a culture where Spanish was dominant and were educated, at least during the elementary school years, in that language. This would explain why categories (1) and (5) (i.e., spiritual thinking = 29% and autobiographical memories = 29%) received the highest scores in Spanish among this group.

Discussion

Both bilingual groups overwhelmingly reported using English in all of the seven private speech questions. However, region of birth (United States vs. Out of United States) played a significant role in determining the language choice for situations that required the use of this internal language. For example, questions spiritual thinking (question #1), autobiographical memories (question #5), and language used in high-stress situation (question #7) received higher scores in Spanish within the Born Outside of the United States group. This pattern of results supports the premise of Larsen, Schrauf, Fromholt, and Rubin’s (2002) findings, which state that memories are usually retrieved in the language they were experienced. Those born in a Spanish-speaking country had an extended experience with the Spanish language and have strong cultural and emotional bonds with their first language, which explains why there are more occurrences in Spanish than in the other group.

The language used for problem solving appeared to be mostly English for both groups, with only 16% in Spanish for those participants born abroad. This observation suggests that the language used throughout schooling may be a determinant factor for the internal language used when solving problems. None of the participants in the born in the United States group reported using Spanish for this task. Noteworthy, mathematical concepts are usually acquired during the first years of schooling and are internalized in the language they were first introduced. Since these individuals received all their education in the English language, it has become main vehicle for accessing and verbalizing this knowledge. This also holds true for those individuals in the other group, who may have begun schooling in Spanish and therefore encoded this early knowledge in that language.

The dreaming category (question #2) has not been sufficiently explored in previous studies yet. We found that language dominance is directly related to the language perceived as the dream language. Participants born in the United States reported dreaming only in English or in both, while participants born in the outside of United States reported more instances of dreaming in Spanish or both languages.

For private speech, language dominance seems to determine the way individuals encode thought across the life span. Differences are found when the individual’s cultural experiences with their first language are significant enough to be internalized. This private speech is also in some aspects, context-dependent, since its retrieval is, at times, determined by the language, which was originally experienced or acquired. Implications for future research should be conducted using bilingual groups from different regions and different cultural backgrounds.

Current results have important clinical consequences.

1. When evaluating bilinguals, clinician should be aware that using a single language may limit the bilingual’s cognitive resources; for instance, if using either L1 or L2 when testing autobiographic memory or problem-solving ability may result in a decreased performance; autobiographical memory may be coded in a single language and in bilinguals problem solving can be easier in one of the two languages, usually in the school language.

2. Bilinguals with different neurological conditions, such as traumatic head injury and cerebrovascular
accidents, may present different patterns of impairments if assessed in L1 or L2 (Ardila, 2017; Marrero, Golden & Espe-Pfeifer, 2002).

3. Bilingualism is very heterogeneous. In our study, we included only two groups of relatively similar bilinguals: both groups acquired the second language before the age of ten years and both were living in the same linguistic environmental conditions. However, the internal use of English and Spanish was quite different. It is not enough to know that a client is bilingual; it is most important to pinpoint the specific type of bilingualism that he or she presents. Noteworthy, at least half of the world population is bilingual (Ardila, 2007); in the United States, the percentage of bilinguals is approximately 20% (Grosjean, 2012; Language use in the United States [www.census.gov/prod/2013pubs/acs-22.pdf]).

References


