Examining codeswitching through semi-spontaneous production: subject expression in Spanish-Catalan bilinguals elicited codeswitching

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Abstract

The present study examines the effects of language mode (Grosjean 1998, 2001) on Spanish subject pronoun expression (SPE) in semi-spontaneous production. Of particular importance to this study is the attested increased use of overt pronominal subjects in Spanish-English code-switching (CS) (Prada Pérez & Toribio, under review, Toribio 2004, Torres-Cacoullos & Travis 2011), a result attributed to convergence (Toribio 2004, Prada Pérez & Toribio, under review) or priming (Torres-Cacoullos & Travis 2011). To expand on this matter, this project examines this effect in bilinguals from a different language pair: Spanish-Catalan bilinguals from Minorca, Spain. For this purpose, a task resembling a reading comprehension was designed to maintain a naturalistic data collection while being able to control for the previous subject form. If the CS effect was due to processing economy, the effect would be present irrespective of language pairing.

The results from the oral elicited production of 16 Catalan-Spanish bilinguals and 10 Spanish monolinguals through an elicited production task indicated that (i) lexical subjects prime more lexical subjects, and that (ii) there was an effect of CS, independent of priming, a result consistent with a simplification of processing analysis. The methodology employed allowed us to isolate priming from CS effects and to attribute the source of the increased use of overt pronominal subjects to CS. Nonetheless, the preferred overt form in Spanish-English CS is overt pronouns while the preference is for overt lexical subjects in Spanish-Catalan CS, a result that we ascribe to convergence with English and Catalan, respectively.

This project contributes to the field of bilingualism in several ways. Data from Catalan-Spanish CS is scarce and can improve our understanding of CS in general. Using semi-spontaneous production allows us to maintain the naturalistic nature sought in sociolinguistic approaches to CS while also controlling for variables and creating enough tokens in each condition to carry out meaningful comparisons. Comparing Spanish-English CS to Catalan-Spanish CS using the same task allows us to isolate the effects of priming, CS and language pairing. Thus, this project sheds some light on the source of the increased use of overt subjects in Spanish during CS, even when both languages are null subject languages.

1. Introduction

Spanish subject pronoun expression (SPE) has been widely researched in the variationist literature with the aim of understanding the variables that underlie the use of overt pronominal vs. null subjects in Spanish. Several variables have been identified as having an effect on the probability of use of an overt pronominal subject. For instance, speakers tend to use more overt pronominal subjects when the subject of the previous sentence is different, with verbs that express mental processes, with ambiguous verb forms, with first person singular subjects, in cases where the previous mention was produced with an overt form (priming), among other factors (e.g., Abreu 2012, Bayley &

Pease-Álvarez 1996, 1997, Bentivoglio 1987, Cameron 1994, 1995, Cameron & Flores 2004, Enríquez 1984, Flores-Ferrán 2002, 2004, Lapidus and Oteguy 2005a, b, Otheguy et al. 2007, Otheguy and Zentella 2012, Silva-Corvalán 1982, 1994, Travis 2005, 2007). These trends have been compared across monolingual and bilingual varieties of Spanish. Although differences have been found in terms of overt pronominal subject rates, the direction of effect of significant variables tends to be the same. Of importance to the current paper, Prada Pérez (2015) does not report differences between Spanish monolinguals' and Catalan-Spanish bilinguals' use of SPE when they are speaking Spanish. The results for Spanish-English bilinguals, however, are not so clear, with different studies reporting different results (e.g. Otheguy & Zentella 2012 reports a contact effect while Torres-Cacoullos & Travis 2010a does not).

In the case of Spanish-English bilinguals, researchers have also compared SPE use in contexts where bilinguals are using only one of their languages, in this case, Spanish, vs. when they are engaged in codeswitching (CS) (Toribio 2004, Torres-Cacoullos & Travis 2010b). These studies report a higher rate of pronominal use in CS than in monolingual mode, a result that they ascribe to convergence with English (Toribio 2004) or priming (Torres-Cacoullos & Travis 2010b). Torres-Cacoullos & Travis (2010b) noticed that in the CS condition there were more data where the form of the previous mention was overt, either in English or Spanish. Thus, they conclude that the higher rate of overt pronominal subjects attested in CS is due to priming alone. To tease apart priming from CS effects, Prada Pérez & Toribio (under review) obtained speech samples through an oral elicited production task where the form of the previous mention was manipulated in the design. They reported that Spanish-English bilinguals used significantly more overt pronominal subjects in CS than in monolingual mode, even when the form of the previous mention was a null subject. Thus, they conclude that there is CS effect, perhaps as an enhancement of similarities between the two languages (convergence), independently of priming. The present study takes Prada Pérez & Toribio's (under review) study as its point of departure, as it seeks to further elucidate the nature of the CS effect. It is possible to argue that the increased use of overt subjects in CS is due to convergence with English, or the result of a simplification strategy, as processing overt subjects alleviates the burden of keeping the referent in memory. In Spanish-English CS it is impossible to tease these two apart. Thus, the current study examines Catalan-Spanish CS, where both languages are similar with respect to SPE, in order to test this hypothesis.

The paper is organized as follows. Section 2 provides a review of previous research on Spanish and Catalan SPE and the factors that have been associated with its use as well as literature examining the effect of CS on Spanish SPE. Section 3 describes the present paper, including its purpose, research questions and hypotheses, method and results. Section 4 returns to the research questions and discusses the results in light of these questions. Section 5 offers conclusions and ideas for future research.

2. Previous literature: subject expression, priming and code-switching

2.1. Subject expression in Spanish and Catalan

Spanish and Catalan are both null subject languages (Perlmutter 1971), with similar null vs. overt subject distributions (Prada Pérez 2009, 2010, 2015). Variationist analyses

of Spanish subject expression indicate that the distribution of null and overt pronominal subjects in Spanish is regulated by a combination of variables, except in those cases traditionally excluded from variable rule analyses: predicates that require an expletive subject (2a), predicates accompanying impersonal uses of the second person singular and third person plural (2b), reverse psychological predicates (2c), predicates in subject relative clauses (2d), subjects with inanimate referents (2e), and predicates in set phrases (2f). In each case, the null pronominal subject fails to alternate with an overt counterpart.

(1) 'Outside the envelope' of variation

        *a.   Y **hay** una misa y luego un acto.*
        'And there is mass and then a ceremony.' (Participant 49, monolingual, female, age 18)

        *b.   **Dicen** que cuando vas a buscar trabajo luego ponen en los currículums [anuncios] que absténgase privadas.*
        'It is said that when one goes and looks for a job, they say in the ads that private (colleges) should abstain.' (Participant 49, monolingual, female, age 18)

        *c.   Me **ha gustado** siempre escribir mucho y leer mucho*
        'I have always liked to read and to write a lot.' (Participant 39, monolingual, male, age 89)

        *d.   Sí, y Mariví, que **se casa**, por cierto.*
        'Yes, and Mariví, who is getting married, by the way.' (Participant 55, monolingual, female, age 27)

        *e.   Cada día caminaba de mi apartamento a la universidad por "El paseo de los ingleses". **Era** un camino muy lindo con vistas de hoteles y también el mar azul y claro del Mediterráneo.*
        'Everyday I walked from my apartment to college through "El paseo de los ingleses". It was a very nice walk with a view of hotels and also the blue and clear Mediterranean Sea.'[ARGL, upper-advanced, CEDEL2 corpus] (Lozano 2008)

        *f.   Sí, sí, nadadora mítica pero de echarme a nadar siempre a medio día o no **sé** estoy vago este año no me apetece nadar.*
        'Yes, yes, legendary swimmer, I always went swimming at lunch time and I do not know if I am lazy this year or what, but I do not feel like swimming.' (Participant 48, monolingual, male, age 27)

In variable contexts, on the other hand, the distribution has been best accounted for by a combination of variables. In general terms, null subjects tend to indicate continuity. Thus, Co-referentiality (also referred to as switch reference), or whether the subject in the preceding sentence is the same or not, favors the use of a null subject.

(2) Coding of language-internal variables: Continuity
        Co-reference

        Y yo los bañaba, y los vestía, les daba de comer, los ponía a dormir.
        'And I would bathe them, dress them, feed them, put them to sleep.'
        [NMCOSS, 117–1A3: 248.-2512] (Travis 2007)

In (2) the pronominal subject is expressed in the first instance and omitted afterwards where it is co-referential. Similarly, TENSE, ASPECT, MOOD (TAM) CONTINUITY favors null subjects, as exemplified in (3).

(3) Coding of language-internal variables: Continuity
   TAM CONTINUITY

    *Mañana voy. Yo **dejé** diez paquetes allá.*
    'I will go tomorrow. I left ten packets there.' [Colombia, cooking: 100-101] (Travis 2007)

The subject in (3) is null in the first clause and expressed in the second, where there is a change in TAM. In the literature, a combination of these two variables has been productively used, SPEECH CONNECTIVITY or Connect, where three levels are distinguished based on co-referenciality and TAM continuity: from *same referent and same TAM* (2) to *different referent* (4a) through *same referent and different TAM* (4b).

(4) Coding of language-internal variables: Continuity
   SPEECH CONNECTIVITY

    a. *Entonces, había necesidad de trabajar porque se había muerto mi papá*
    *y **teníamos** una familia de seis personas.* (Participant #19)
    Then, there was the need to work because my father had died and (d) [we]
    had a family of six people. (Holmquist 2012)

    b.... *y ha recibido hijos de las personas que ella **recibió**, o sea nietoh,*
    cómo quien dice. [BF07116-117]
    ' … and [she] has delivered children of the people that she delivered, that
    is grandchildren, we could say.' (Orozco 2015)

In (4a) the referent of the subject of *teníamos* 'we had' is different from the referent in the subject in the previous clause (*mi papá* 'my father'), a context in which there is a tendency to use overt pronominal subjects. In (4b) the referent is the same but the TAM is different across clauses, a situation that neither favors nor disfavors the overt form. Finally, null subjects are favored in *embedded* clauses (see Lozano 2008, Margaza & Bel 2006, Morales 1997, Otheguy et al. 2007, Silva-Corvalán 1994), as in (5).

(5) Coding of language-internal variables: Continuity
   CLAUSE TYPE

    No, no. . . De verdad. Yo quiero que hablemos, negro.
    'No, no. Really. I want us to talk, sweetheart.' [Colombia, restaurant:
    1149-1157] (Travis 2007)

In (5) a null subject is employed, despite the topic shift. In addition to cases where continuity is reduced, the use of the overt pronominal subject has also been identified with "speaker egocentrism" and verb form ambiguity. It has been widely attested in the literature that overt pronominal subjects are more frequent in first person singular than in third person singular, or any of the plural verb forms. Thus, the variable PERSON affects subject expression in Spanish.

(6) Coding of language-internal variables: PERSON

*Y luego ya no pude ir más, porque yo **iba** muy lejos pa' agarrar el bos,*
'And then (I) couldn't go anymore, because I had to go really far to catch
the bus,' [NMCOSS, 76–1A1: 228–229] (Travis 2007)

In (6) the subject is the first person in the two conjugated verb forms, with the second one being an overt pronominal subject. Previous research has observed a higher use of overt pronominal subjects in first person singular subjects, as compared to the other grammatical persons. Some of the verb forms in Spanish, namely the first and third person singular forms, are the same in several tenses (imperfect, conditional, present subjunctive and related compound forms). These ambiguous forms have sometimes been attested with more overt pronominal subjects, with disambiguating purposes. Consider the following example.

(7) Coding of language-internal variables: VERB FORM AMBIGUITY
En la noche ella iba a mi lado y yo estaba temblando

'At night she used to go by my side and I wasn't shaking.' (Silva-Corvalán 1997)

In (7), both verbs could refer to a first or a third person singular. In this case, to disambiguate, both appear with an overt pronominal subject. While overt subjects are favored with verbal forms that are *ambiguous* and not with *unambiguous* ones (Silva-Corvalán 1994) this result is not always attested (Casanova 1999, Morales 1997, Ranson 1991). Unlike in example (7), often times there is enough information in the context for the referent not to be ambiguous even if the verb form is so, as in (2) above. The distribution of overt subjects is also relevant to the establishment of the speaker's position on an idea. As a result, PERSON in combination with SEMANTIC VERB TYPE affects the distribution. For instance, the *first person singular* and verbs that express opinion or estimative verbs favor overt subjects (Enríquez 1984, Morales 1997, Otheguy et al. 2007, Silva-Corvalán 1982, 1994, Travis 2007). For example, Morales (1996) shows that the subjects of verbs like *pensar* 'to think' may be produced even in topic continuation contexts, as in (8).

(8) Coding of language-internal variables: VERB TYPE
Parece que ellos piensan que es signo de cultura.
'It seems as if they think that is it a sign of culture.' (Morales 1996)

More recently the classification of verb type has been reduced to external actions, mental processes and stative verbs (see Orozco 2015 for a fuller description). In general, mental and stative predicates favor null subjects while external actions favor overt pronominal subjects. Lastly, a PRIMING or structural perseverance effect has been reported in the literature, where overt subjects lead to more overt subjects while null subjects lead to more null subjects (Cameron 1995, Cameron & Flores-Ferrán 2004, Flores-Ferrán 2007, Travis 2005, 2007).

(9) Coding of language-internal variables: FORM OF PREVIOUS MENTION/ PRIMING

*...**Yo** soy un títere de la calle. No me cruces la línea a mí. Y al tipo empujarme, **yo** le metí un puño en la misma oficina. Y el otro salió corriendo. Y entonces la secretaria estaba mirando pero se dio cuenta que fue que él me empujó. **Yo** me defendí. ¿Entiendes?....*

1 '... I am a street guy. (You) don't cross my line. And the guy, when he
2 pushed me, I punched him right in the office. And the other guy ran out.
3 And then the secretary was looking but she realized that he had pushed
4 me. I defended myself. Understand?' (Cameron and Flores-Ferrán,
5 2004:52)
6 As exemplified in (9), there is a priming effect where the initial use of an overt
7 pronominal subject in the first person singular leads to further use of overt pronominal
8 subjects in subsequent references to the same person.

9   Additionally, although dialectal variation is largely attested in subject pronoun rates
10 and restricted to lower ranked variables (those with a smaller effect size), these
11 differences do not affect most linguistic variables. That is, this combination of variables
12 is rather stable across varieties of Spanish. Crucially, Spanish and Catalan exhibit the
13 same variables that are significant, with the same ranking of variables (obtained through
14 the range or effect size), and the same direction of effect (Prada Pérez 2009, 2010, 2015).
15 In Prada Pérez (2015) all the first person singular subjects produced in Spanish by 12
16 Spanish monolinguals in Valladolid, Spain, and in Catalan by12 Catalan-dominant
17 bilinguals in Minorca, Spain, during sociolinguistic interviews conducted in 2008 were
18 coded for the linguistic variables: speech connectivity, verb form ambiguity and semantic
19 verb type, and the extralinguistic variable: language group, revealing (i) no differences in
20 pronominal rates between Spanish (19.8% overt pronominal subjects) and Catalan
21 (20.7% overt pronominal subjects), (ii) the same significant variables, (iii) in the same
22 order of importance (speech connectivity and verb form ambiguity), and (iv) with the
23 same directionality of effect (more connected speech favored more null subjects than less
24 connected speech and ambiguous forms favored more overt subjects than unambiguous
25 forms). Thus, Spanish and Catalan have an extremely similar distribution and rate of
26 overt vs. null subject pronouns.
27   A comparison in subject pronoun expression that has been rather productive in the
28 literature has been between monolingual and bilingual varieties of Spanish. Spanish in
29 contact with English has reported conflicting results: while some do not report
30 differences (Bayley and Pease-Alvarez 1997, Flores and Toro 2000, Flores-Ferrán 2004,
31 Silva-Corvalán 1994, Torres-Cacoullos & Travis 2010a, and Travis 2007), others report
32 an increase in overt pronominal subjects and changes in the distribution reflected in
33 variables that are significant, their ranking, and/or their constraint ranking (Erker & Guy
34 2013, Erker & Otheguy 2016, Lipski 1994, 1996, Otheguy & Zentella 2012, Shin 2012,
35 Shin & Otheguy 2013, Orozco 2015, Toribio 2004, among others). Following the
36 comparative method, Prada Pérez (2015) compared the Spanish and Catalan data
37 discussed above with data in Spanish from two groups of Spanish-Catalan bilinguals:
38 Spanish-dominant and Catalan-dominant bilinguals. Although differences were attested
39 in the variables that were returned as significant (verb from ambiguity was not significant
40 in the bilingual Spanish groups while verb type was), there were no differences in overall
41 pronoun rates or the directionality of effects.
42   In summary, SPE in Spanish and Catalan are subject to similar distributions and rates
43 of overt pronominal expression, a condition that will be necessary to test the hypotheses
44 of opposing views in the code-switching literature to which we turn now.
45
46   *2.2. Subject expression and code-switching*

In recent years, the literature on the morphosyntax of CS has moved from the productive study of general restrictions on CS (e.g. the Functional Head Hypothesis, Belazi et al. 1994, MacSwan's 2000 Minimalist Approach, Myers-Scotton's 1998, 2002 the Matrix-Language Frame) to the productive application of those restrictions to specific structures (e.g. Gardner-Chloros & Edwards 2004, González-Vilbazo & López 2012, Herring et al. 2010) and to the productive examination of CS as an independent variable in some linguistic variable (Prada Pérez & Hernández, to appear, Prada Pérez & Toribio, under review, Toribio 2004, Torres-Cacoullos & Travis 2010b), an approach that we follow here.

Work under this approach has considered the distribution of copulas (Salazar 2007, Prada Pérez & Hernández, to appear), indicative and subjunctive moods in relative clauses (Prada Pérez & Feroce, in progress, Raymond 2012), and, of particular interest to this study, SPE (Prada Pérez & Toribio, under review, Toribio 2004, Torres-Cacoullos & Travis 2010) in bilingual speakers in two conditions: in a Spanish-monolingual mode and in Spanish-English CS. For instance, Toribio (2004) examined SPE in the monolingual and the bilingual mode of two Mexican-American Spanish-English bilingual speakers. Monolingual and bilingual mode production was elicited through a series of pictures of two stories: "Little Red Riding Hood" (monolingual Spanish condition) and "El Principe Pordiosero/The Beggar Prince" (Spanish-English CS condition), revealing a higher proportion of overt pronominal subjects in the CS condition. She interpreted these results as indicative of a CS effect, which she attributed to convergence—strive for parallels among both language systems when both languages are activated and functioning simultaneously. Nonetheless, given the sample size, Toribio (2004) warns that these results have to be "somewhat guarded". In order to test Toribio's hypothesis that CS enhances convergence between the languages involved, Torres-Cacoullos & Travis (2010b) examined first-person subject expression in the recorded interviews and conversations of 22 speakers from two corpora, the New Mexico Colorado Spanish Survey and the New Mexico Spanish-English Bilingual corpus. Of particular interest to this study is the comparison in SPE in Spanish when bilingual New Mexican speakers were code switching vs. when they were not. They found that the rate of use for the expression of the Spanish first-person subject was greater with code switching (in those speakers that regularly engage in CS. However, further examination of the data revealed that that result was due to the increased chances of having a previous overt pronominal subject in CS, as the preceding subject could also be English 'I'. In particular, in monolingual Spanish mode 63% of the data had an unexpressed previous subject while it was only 43% in the CS contexts. Therefore, the authors argue that the increase in subject expression in the CS condition is due to cross-linguistic priming from English first person 'I' in addition to intra-linguistic priming, and not simply due to CS. In spite of the methodological soundness of Torres-Cacoullos & Travis (2010b), it remains a question whether the increased use of overt pronominal subjects in CS vs. a Spanish monolingual mode is solely due to priming. In order to tease CSing and priming apart, Prada Pérez & Toribio (under review) recorded 26 advanced second-generation HSs answering comprehension questions on a story, where the questions had been manipulated for subject form (priming). They were recorded during three sessions, each of which corresponded to different levels of activation of both languages: Spanish monolingual

mode, English-to-Spanish language switching (the question was presented in English while participants were asked to respond in Spanish) and Spanish-English CS. The results indicated that even in the condition with a Spanish null subject in the question, participants used more overt pronominal subjects in the CS condition than in the Spanish monolingual condition, thus confirming a CS effect independent of priming.

In summary, there is evidence of CS having an effect on copula choice, mood selection and SPE in Spanish. Previous literature has attributed this effect solely to priming (Torres-Cacoullos & Travis 2010b) or convergence (Toribio 2004) or to both (Prada Pérez & Toribio, under review). This literature, however, is restricted to Spanish-English CS and as such raises the question of whether the effect of CS is to enhance similarities between the languages (i.e, convergence between the languages) or to something more general, such as simplification, since an increase in overt pronominal subjects in Spanish could be traced back to English or to the easier processing of overt over null subjects.

3. The Present Study

The aim of this study is to examine the effect of the variables SPEAKER MODE (monolingual vs. language switching vs. CS) as well as form of previous mention or PRIMING on SPE in Spanish-Catalan bilinguals. Recall that Spanish and Catalan are both null subject languages with similar rates and distributions of overt and null subjects. Using the same methodology as Prada Pérez & Toribio (under review), except for the addition of a Spanish monolingual control group, allows for the comparison between the effects of CS in Spanish when it is code-switched with a non null subject language, English, and when it is code-switched with a null subject language, Catalan.

3.1. Research questions and hypotheses

With this aim in mind, the study was designed to answer the following questions:
PRIMING EFFECT: Will Spanish monolingual and Spanish-Catalan bilingual participants be sensitive to the form of the preceding subject?
Since the form of the preceding subject was manipulated in the research design by presenting a short-answer question with different subject forms, the design then allows the comparison of effects of the different subject forms on the production of the participants. Given the attested intra-linguistic and cross-linguistic priming effect in the previous literature, Spanish monolingual and Spanish-Catalan bilingual participants are expected to show evidence of priming in their oral productions.
SPEAKER MODE EFFECT: Will differences be attested between the monolingual mode and the bilingual conditions in SPE in Spanish-English bilinguals?
Prada Pérez & Toribio (under review) find a bilingual mode effect, where more overt pronominal subjects are used in Spanish in CS than in monolingual mode. If it is attributable to *convergence* with English (Toribio 2004), no bilingual mode effect is expected in Catalan-Spanish CS given the similarities between Catalan and Spanish. If the effect is more general, along the lines of a *simplification* or processing economy strategy resulting from the simultaneous activation of both languages, a speaker mode effect is anticipated. The dual activation constitutes a constant in Spanish-English and

1   Spanish-Catalan CS. Therefore, it should take place, irrespective of language pairing, and
2   it should have similar simplification effects.
3   SPEAKER GROUP DIFFERENCES: Will differences emerge between monolingual and
4   bilingual speakers across stories?
5   The monolingual speakers were also presented with the three stories, all in Spanish.
6   Since the stories were selected because they were comparable (same referent, similar
7   topics, similar verb types, TAM) no differences are expected across stories. Bearing in
8   mind the results in Prada Pérez (2015), where no major differences were reported
9   between Spanish monolingual and Catalan-Spanish bilinguals Spanish SPE, no
10   differences are expected between the Spanish monolingual and the Catalan-Spanish
11   bilinguals in the monolingual mode condition. Differences are not expected in the
12   bilingual mode conditions if the bilingual mode effect reported in the previous literature
13   is due to *convergence* with English (Toribio 2004). In contrast, if the effect is due to
14   *simplification*, differences between the Spanish monolingual and the Spanish-Catalan
15   bilinguals are expected in the bilingual mode conditions.
16
17   *3.2. Method*
18
19   To facilitate comparison with Prada Pérez & Toribio's (under review) study, the same
20   materials were translated into Spanish and Catalan. A total of 10 Spanish monolingual
21   speakers from Valladolid and 19 Catalan-dominant bilinguals[1] from Minorca completed
22   the study. A language background questionnaire was used to make sure the speakers did
23   not have functional knowledge of English or any other language as well as no significant
24   contact with speakers of other languages. All the participants in the monolingual group
25   only interacted with other speakers in the community on a daily basis. All the bilingual
26   speakers used Catalan exclusively with family members and used Catalan more than
27   Spanish across contexts. Their proficiency in Spanish was judged as advanced by the
28   interviewer[2].
29   The participants read three stories adapted from Zeballos (1997) (see appendix) and
30   performed some tasks related to the stories. All the materials were presented visually via
31   a PowerPoint presentation while responses were provided orally and digitally recorded
32   via a head-mounted microphone. The initial story reading was followed by a reading
33   comprehension short-answer question task, a sentence completion task, a story re-reading
34   (this time out loud) and, lastly, a story retelling. The stories differed in speaker mode: the
35   first story was presented in Spanish (monolingual mode condition), the second story was
36   presented in Catalan while participants were asked to respond in Spanish (language
37   switching or LS condition), and the third story was presented in Catalan-Spanish CS (CS

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[1] A total of 22 bilinguals participated in the study. Two were excluded due to their dialect (they were speakers of other varieties of Catalan: from Valencia and Catalonia) and one due to their dominance in Spanish.

[2] Previous experience with the community showed little practical use in independent measures of proficiency such as the section of the DELE commonly used in the field of SLA. All these speakers have acquired both languages in childhood, are literate in both languages and use both languages on a daily basis. There were no morphosyntactic errors in their production.

condition). The same stories were all presented in Spanish to the Spanish control group. The short answer questions were manipulated for subject form of previous mention. In the Spanish monolingual condition the prime subject forms were overt lexical (N=3), overt pronominal (N=3) or null (N=3):

(10) Spanish-only condition

 a. *¿Dónde vivía **el Abuelo Lino***?
    'Where did Grandpa Lino live?'
    Response: *Vivía en la cabaña en un monte (Participant #16, Bilingual)*
    '(He) lived in a cabin in a mountain."

 b. *¿De qué se alimentaba **él**?*
    'What did he eat?'
    Response: *El abuelo Lino se alimentaba de lo que tenía en su huerto y de lo que cazaba por el monte* (Participant #14, Bilingual)
    'Grandpa Lino nourished himself with what he had in his garden and what he hunted in the mountain.'

 c. *¿Dónde encontraba **Ø** su comida?*
    'Where did he find his food?'
    Response: *El abuelo Lino encontraba la comida en su huerto o cazando por el bosque.* (Participant #6, Bilingual)
    'Grandpa Lino found food in his garden or hunting in the forest.'

As can be seen in example (10), participants could respond with an overt lexical, an overt pronominal or a null subject. In the LS condition the questions were presented in Catalan and could also have either an overt lexical, an overt pronominal or a null subject.

(11) LS condition

 a. *Què feia **l'Avi Lino** a n'es bosc?*
    'What did Grandpa Lino have in his cabin in the forest?'
    Response: *El Abuelo Lino fue a cazar al bosque.* (Participant #5, Bilingual)
    'Grandpa Lino spent the entire day in the forest hunting animals.'

 b. *Per què diem que aquesta vegada **ell** va tenir èxit?*
    'Why do we say that this time he was successful?'
    Response: *Tuvo éxito porque consiguió cazar un ciervo.* (Participant #7, Bilingual)
    '(He) was successful because (he) managed to hunt a deer.'

 c. *Per què **Ø** no podia encendre es llum?*
    'Why couldn't he light the lamp?'
    Response: *Porque no podia cazar el relámpago.* (Participant #8, Bilingual)
    'Because (he) couldn't catch the lighting.'

In (11) participants read the questions in Catalan, with either an overt lexical (11a), overt pronominal (11b) or null (11c) subject and responded in Spanish. In the CS condition,

there were twice as many questions (N=18), as subjects could be overt lexical, overt pronominal or null in Spanish or in Catalan:

(12)   CS condition

a. *Què tenia **l'Avi Lino** en su cabaña del bosque?*
    'What did Grandpa Lino have in his cabin in the forest?'
    Response: *El Abuelo Lino tenía UN GALL QUE LE DEIAN KIKIRIKÍ.*(Participant #9, Bilingual)
    'Grandpa Lino had a rooster who was called Kikirikí.'

b. *Com se sentia **ell** al no oir a su gallo tan tarde?*
    Response: *El Abuelo Lino pensó que algo le había sucedido al gallo PERQUE NO LE VA SENTIR COMO CANTAVA.* (Participant #13, Bilingual)
    'Grandpa Lino thought that something had happened to the rooster because he could not hear him sing.'

c. *¿Qué oyó **Ø** molt fort enfora?*
    'What loud noise did he hear outside?'
    Response: *Oyó el canto DE UN GALL a los lejos* (Participant #16, Bilingual)
    'He heard the rooster's crow in the distance'

d. *¿Qué animal tenía **el Abuelo Lino** com a amic?*
    'What animal did Grandpa Lino have as a friend?'
    Response: *Tenía UN GALL QUE LI DEIA KIKIRIKÍ* (Participant #5, Bilingual)
    '(He) had a rooster who (he) called kikirikí.'

e. *¿Qué encontró **él** a sa cabana i a n'es voltants?*
    'What did he find in the cabin and the surrounding area?'
    Response: *Encontró un rastro DE PLOMAS ESCAMPADAS POR EN TERRA.* (Participant #16, Bilingual)
    'He found a trail of feathers scattered on the floor.'

d. *¿Cómo logró salvar es seu estimat gall?*
    'How did he manage to save his loved rooster?'
    Response: *L'AVI VA CONSEGUIR SELVAR A N'ES GALL abriendo la barriga del lobo con un machete.* (Participant #6, Bilingual)
    'Grandpa Lino managed to save the rooster by opening the wolf's stomach with a machete.'

Examples (12a)-(12c) have subjects in Catalan with the three possible subject forms and (12d)-(12f) have subjects in Spanish with the three possible forms. The sentences were controlled for variables that have been found to have an effect on subject expression in the variationist literature: (i) switch reference (all the contexts consisted of topic continuation); (ii) person/number and animacy of the referent (all sentences referred to Grandpa Lino; a third person singular animate referent); and (iii) clause type (all tokens were in a main clause). The productions were transcribed, and coded for subject form produced (subject form of answer) per prime type (subject form of question) and speaker mode condition. Each participant produced nine tokens in the Spanish only condition,

nine tokens in the LS condition and 18 tokens in the CS condition. The total number of overt lexical, overt pronominal and null subjects produced by each speaker in each condition was submitted to statistical analysis. The results are presented in the next section.

3.3. Results

Participant responses for each condition were added and the percentage of use of each subject form was calculated for each of the speaker groups. Table 1 provides the percentages as well as the total number of tokens (presented in parenthesis).

Table 1: Descriptive statistics

Session	Primetype		Response		
		Speaker group	Spanish DP % (N)	Spanish pronoun % (N)	Spanish null %(N)
Spanish only	Spanish DP prime	Bilinguals	47.9% (23)	0% (0)	52.1% (25)
		Monolinguals	50% (15)	0% (0)	50% (15)
	Spanish pronoun prime	Bilinguals	21.3% (10)	2.1% (1)	76.6% (36)
		Monolinguals	13.3% (4)	6.7% (2)	80% (24)
	Spanish null prime	Bilinguals	20.8% (10)	0% (0)	79.2% (38)
		Monolinguals	16.7% (5)	10% (3)	73.3% (22)
LS	Spanish DP prime	Bilinguals	52.1% (25)	0% (0)	47.9% (23)
		Monolinguals	46.7% (14)	6.7% (2)	46.7% (14)
	Spanish pronoun prime	Bilinguals	14.6% (7)	0% (0)	85.4% (41)
		Monolinguals	16.7% (5)	6.7% (2)	76.7% (23)
	Spanish null prime	Bilinguals	18.8% (9)	2.1% (1)	79.2% (38)
		Monolinguals	10% (3)	0% (0)	90% (27)
CS	Spanish DP prime	Bilinguals	56.3% (27)	2.1% (1)	41.7% (20)
		Monolinguals	63.3% (19)	0% (0)	36.7% (11)
	Spanish pronoun prime	Bilinguals	31.3% (15)	12.5% (6)	56.3% (27)
		Monolinguals	20% (6)	6.7% (2)	73.3% (22)
	Spanish null	Bilinguals	35.4% (17)	6.3% (3)	58.3% (28)

prime	Monolinguals	20% (6)	10% (3)	70% (21)
Catalan DP prime	Bilinguals	62.5% (30)	0% (0)	37.5% (18)
	Monolinguals	60% (18)	3.3% (1)	36.7% (11)
Catalan pronoun prime	Bilinguals	50% (24)	2.1% (1)	47.9% (23)
	Monolinguals	23.3% (7)	10% (3)	66.7% (20)
Catalan null prime	Bilinguals	33.3% (16)	4.2% (2)	62.5% (30)
	Monolinguals	23.3% (7)	6.7% (2)	70% (21)

Overall, participants used predominantly null subjects, especially with pronouns and null subjects as primes (up to 90% of the time). With lexical subject (DPs) primes, however, this percentage was reduced, as participants responded with lexical and null subjects at similar rates. Pronouns were rarely used, even with pronominal primes (the highest percentage being 12.5% with a pronoun prime). Thus, there seems to be some evidence of priming, particularly with lexical subjects.

Across speaker modes, there does not seem to be an increase in overt pronominal subjects in bilingual modes. The highest difference attested is with lexical subjects. In the monolingual and LS conditions, lexical subjects are used close to 50% with a DP prime and near 20% of the time with the other two prime types. In the CS condition, in contrast, lexical subjects are used around 30% and up to 50% with overt pronominal or null subject primes.

These trends were further explored through a 3 (Story/speaker mode: monolingual mode, LS mode, CS mode) by 3 (subject form of question: lexical, pronominal, null) by 3 (subject form of answer: lexical, pronominal, null) repeated measures ANOVA for each of the groups. An initial analysis including both groups revealed no significant differences between monolingual and bilingual speakers, $F(1, 24) = .62$, $p = .440$, $\eta_p^2 = .025$. For the monolingual speakers there was a main effect for subject form of answer, $F(2,18) = 25.32$, $p = .000$, $\eta_p^2 = .738$, where they used significantly more null subjects tan overt subjects and, within overt subjects, they used significantly more lexical subjects than pronouns. Additionally there was a significant interaction between the subject form of question and the subject form of the answer, $F(4, 36) = 15.69$, $p = .000$, $\eta_p^2 = .636$, indicative of priming. The answers were similar between null and pronominal overt subject primes. With lexical subject primes, on the other hand, the use of null subjects in the answer is lower than in the other conditions while the use of overt lexical subjects is higher than with the other subject form of questions. Thus, priming seems to have an effect but only with lexical subjects. There were no significant interactions with story/speaker mode, indicating that the stories were comparable in terms of eliciting the different subject forms.

For the bilingual speakers, there was also a main effect for subject form of answer, $F(2,30) = 18.64$, $p = .000$, $\eta_p^2 = .554$, where they used significantly less pronominal subjects than the other two subject forms, which were used similarly. There were two significant interactions, indicative of a priming effect as well as a speaker mode effect. There was a significant interaction between the subject form of questions and the subject

1. form of answer, $F_{(4, 60)}= 15.49$, $p= .000$, $\eta_p^2 = .508$, in the same direction as in the
2. monolingual group. There was a priming effect with lexical subjects where the use of null
3. subjects was lower than with the other two subject forms of questions as speakers were
4. using more lexical subjects than in the other two conditions. As was the case with the
5. monolingual speakers, the same effect did not take place with pronominal primes. There
6. was a significant story/speaker mode by subject form of answer interaction, $F_{(4, 60)} =$
7. 5.64, $p = .001$, $\eta_p^2 = .273$, where in the CS condition lexical subjects were used more than
8. in the other two conditions. Additionally, there was a three-way interaction between
9. story/speaker mode, subject form of answer and subject form of question, $F_{(8, 120)} =$
10. 2.51, $p = .015$, $\eta_p^2 = .143$. The lexical subject priming effect is less marked in the CS
11. condition as participants used more lexical subjects in the CS condition across subject
12. primes.
13.
14. **4. Discussion**
15.
16.   With these results in mind, we return to the research questions. The first question
17. pertained to the effect of priming from the subject form of the question in the short-
18. answer question task. Participants were expected to be primed by the form of the subject
19. in the question such that they would use more overt lexical subjects when answering
20. questions with an overt lexical subject, more overt pronominal subjects when answering
21. questions with an overt pronominal subject, and more null pronominal subjects when
22. answering questions with a null pronominal subject. The results indicate that the default
23. subject form in Spanish is the null subject, as it is the most frequently used form across
24. conditions, except for those conditions with a lexical subject, where both subject forms
25. are used at similar rates. The increased use of lexical subjects in response to questions
26. with lexical subjects is indicative of priming and, thus, a result we anticipated. In this
27. task, however, there was no obvious priming effect with pronominal subjects, a result we
28. did not predict based on previous literature. The participants rarely used pronouns and,
29. when they did, there is no clear pattern of higher use in the context of a question with a
30. pronominal subject vs. a question with a null subject. The difference between these data
31. and previous data collected through interviews is that the previous mention is not by the
32. same speaker. In sociolinguistic interviews researchers try to elicit long stretches of
33. speech and most of the previous mentions of the referent come from the participants
34. themselves. Thus, it is possible that priming across speakers is not as persistent. If that
35. were the case, though, it would be difficult to understand the priming that did occur with
36. lexical subjects. Another possibility is that subject person and number play a role.
37. Previous research reporting a priming effect with pronominal subjects largely focused on
38. first person singular subjects (particularly Torres-Cacoullos & Travis 2010a, b, Travis
39. 2005, 2007) and referred to it as the "yo-yo effect" (Travis 2005, 2007). In this project,
40. however, the subjects used are all third person singular, which are not deictic but
41. referential. Thus, it is possible that priming effects are not as pervasive with this form.
42. Additionally, third person singular pronouns are used rather infrequently in these
43. varieties. Prada Pérez (in progress) reports 4.8% overt pronominal third person subjects
44. (in contrast with 19.8% overt pronominal first person subjects) in Spanish and 10.6%
45. overt pronominal third person subjects (vs. 20.7% overt pronominal first person subjects)
46. in Catalan. This infrequent use of third person singular subjects may be due to its

inability to disambiguate referents (e.g. in contexts where the ambiguity is between two referents of the same gender) or make the speaker's point of view stronger, unlike with first person singular subjects. Thus, it is possible that priming is not as strong with marginal forms, as is the case with the overt pronominal third person subject. This has indeed been reported in psycholinguistic priming research with respect to Spanish passives (Flett 2006).

Regarding speaker mode effect, two hypotheses were proposed following previous results and their interpretation. In Spanish-English bilinguals, a CS or speaker mode effect has been reported where bilinguals use more overt pronominal subjects in CS than in monolingual mode. With this language pairing, however, it is impossible to tease apart *convergence*, as in the enhancement of cross-linguistic similarities, from *simplification*, as overt subjects are simpler to process since the speaker does not need to resolve the interpretation of the null subject. A *convergence* account would predict no speaker mode effects in Spanish-Catalan bilinguals, given the similarities between the languages while a *simplification* account would predict speaker mode effects as bilinguals of any language pairing would seek simpler forms while engaged in CS. There was a speaker mode effect in our data, where speakers used more overt subjects in CS than in the Spanish-only condition. However, they did not use overt pronominal subjects more. Thus, in this language pairing, the speaker mode effect is due to the increased use of overt lexical subjects in the CS condition as compared to the monolingual condition. This result is consistent with a *simplification* account, as overt lexical subjects alleviate the burden of processing and holding the null subject referent in mind. However, the difference between the Spanish-English and the Spanish-Catalan data point to *convergence* as well. Since English uses more overt pronominal subjects, the simplification in CS is affected by the high frequency of pronominal subjects in the contact language, English. Thus, we interpret these results are indicative of both *simplification* due to the dual activation of both languages during CS and *convergence*, as the form selected depends on the language pairing.

Another interesting result from these data is the lack of an effect in the LS condition as compared to the monolingual condition. It is possible that during LS, the need to inhibit their dominant language for production, is more comparable to their monolingual production in their less dominant language (as in the monolingual mode condition) than to the CS condition where both languages are activated for production. In the psycholinguistic literature there is evidence that the switch cost is different in the dominant language than in the non-dominant language. Once the dominant language has been inhibited it is more effortful to reactivate that language, due to the more effortful inhibition of the dominant language. This scenario only occurs in the CS condition in this research project since the LS condition always presented the questions in the dominant language and participants were asked to respond in their non-dominant language. If our results are explained by the dual activation in CS and the difference is switch costs, in an LS condition where bilingual speakers switch into their dominant language (answer in their dominant language), bilinguals would be expected to use overt subjects significantly more in that condition than in a monolingual condition. To the best of our knowledge, this question has not been addressed elsewhere. Thus, further research is needed to test this hypothesis.

Lastly, we did not predict overall differences between monolingual and bilingual speakers, as previous research had indicated that Spanish monolingual and Catalan-Spanish bilingual speakers used Spanish SPE similarly. This was the case, as no group effect was found. Since there was evidence of *simplification* in CS, differences were expected in the effect of story/bilingual mode between the two groups. There was no story effect in the monolingual group, which indicated that the stories were comparable, while there was a story/speaker mode effect in the bilingual group, indicative of *simplification* in contexts of dual linguistic activation.

5. Conclusion

This research project aimed to examine linguistic priming in Spanish monolingual and Spanish-Catalan bilinguals' Spanish SPE as well as the effect of speaker mode in the Spanish-Catalan bilinguals' Spanish SPE.

Previous research indicates that Spanish SPE is subject to priming. Our data indicates that priming in SPE is asymmetrical; only overt lexical subjects provided clear evidence of priming. Pronominal subjects, on the other hand, were hypothesized not to be as susceptible to priming due to the disfavor for overt third person singular pronominal subjects in Spanish, particularly in the Spanish of these two groups of speakers. This was argued to find some support in the psycholinguistic literature (Flett 2006). Nonetheless, this result warrants further inquiry.

Regarding speaker mode, there is evidence of *simplification* in CS, as bilinguals used more overt lexical subjects in the CS condition than in the monolingual condition. Unlike in Spanish-English CS, there was no increase in overt pronominal subjects. Thus, these results are interpreted as indicative of both *simplification* and *convergence*, as pronominal subjects are rarely used in Spanish and Catalan but near-categorically used in English. Lastly, the lack of a simplification effect in LS was hypothesized to be attributed to the direction of switching (from dominant to non-dominant language) and the differential switching cost of the dominant and the non-dominant language attested in the psycholinguistic literature. It was suggested that a comparable study with an LS condition where the switch is in the opposite direction would help clarify the source of this result.

This project was successful at eliciting the target forms while manipulating the form of the previous mention without losing much of the naturalistic use of CS. Although there is a loss of naturalness as speakers are prompted to use one language or another or both, participants briefed at the end of the experiment reported believing they were completing a reading comprehension task. Thus, the methodology was successful in masking the linguistic variable under study and eliciting sufficient uses of subject forms in controlled environments, without time to access explicit knowledge.

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Appendix

Monolingual Spanish story: El Abuelo Lino vivía en una cabaña en un bosque. Se alimentaba de lo que le brindaba la naturaleza: de las verduras de su huerto, de nueces y frutas que encontraba en su alrededor, y de los animales que cazaba en el monte.// Una mañana, salió a cazar un ciervo. Agarró su escopeta, pero se dio cuenta de que no tenía balas. "¿Qué hago?," se preguntó. Y en eso le llegó una idea. Salió al huerto y cargó la escopeta con judías.// Caminó un buen rato por el bosque. Al anochecer, vio un ciervo, y con mucho entusiasmo le disparó un tiro de judías. Pero sólo lo hirió; no lo mató. Llegó a su casa con las manos vacías. No tenía ni judías ni ciervo para la cena.// Poco después, andaba de nuevo por el monte en busca de leña, y allí encontró un jardín de judías."¿Quién habrá sembrado estas judías en esta zona?," pensaba. Se puso muy contento del hallazgo y cuando se acercó a recoger las judías, ¡pa! las vio salir brincando como si fueran un ciervo. De nuevo regresó a la cabaña con los ojos llenos y las manos vacías.

Language switching story: En una ocasió, l'Avi Lino havia passat es dia sencer caçant a n'es bosc. Aquesta vegada amb èxit: va caçar un cérvol. Però era gran i estava massa dèbil per a dur una càrrega tan pesada i es camí a casa pes bosc era llarg. Quan va arribar a ca seva, sa cabana era a les fosques. Per desgràcia, no tenia mistos per encendre es llum, i es va veure envoltat d'obscuritat. "Què podria fer" —se demanava—, observant es vespre.// En aquell mateix moment, va veure un llamp i se li va ocórrer un idea brillant: capturaria sa llum des llamp. Quan va caure un altre llamp, es va tirar damunt des llamp, però li va fugir d'entre es dits. Va intentar capturar es llamp en diferents ocasions més. "Quan torni a caure, estaré llest" —va dir—.// Va obrir sa porta de sa cabana i, en es moment en què entrava es següent llamp, la va tancar per a que sa llum no pogués fugir. Amb sa llum que va capturar, sa casa es va il·luminar i, envoltat de llum, va preparar es sopar i es va fer es llit.// En acabar, va obrir sa porta per a que es llamp se'n anés. Envoltat d'obscuritat de nou, se'n va anar as llit i se va dormir.

Codeswitching story: L'Avi Lino tenia molts animals a sa seva terra a n'es bosc, però es seu animal preferit era un gall anomenat Quiquiriquí. Así le llamaba porque así lo escuchaba cantar por la mañana: quiquiriquíííííí.// Una mañana se levantó pero no había oído el canto del gallo. Tot d'una va passar pena perquè ja era tard. Buscó y buscó al gallo por la cabaña y pes voltants, però només va trobar plomes escampades per en terra.// En eso, oyó un cantito muy lejano, "Quiquiriquíííííí," que reconocía. Lo escuchó varias veces más y miraba muy atentamente por todos lados, però només va veure un llop replè davall d'un arbre, un paisatge inusual. Se preguntó, "¿Qué hace ese lobo por aquesta zona a aquestes hores des dia?"// Se acercó al lobo y vio la cabecita del gallo que sobresortia des cul des llop. Ahí supo que el lobo se había comido es seu gall preferit! Se emocionó tanto al verlo que cogió su machete y le abrió el estómago al lobo d'un cop. Triunfante, sacó al gallo sa i estalvi. Després d'açò vivió muy feliz con su gallo molts d'anys.