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Citation

Bellamy, K. R., Stadthagen-Gonzalez, H., & Parafita Couto, M. (2022). Él code-switches more than tú y yo: new data for the subject pronoun-verb switch constraint. *Languages*, 7(1). doi:10.3390/languages7010022

Version: Publisher's Version

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Downloaded from: <https://hdl.handle.net/1887/3480127>

Note: To cite this publication please use the final published version (if applicable).

Article

Él Code-Switches More Than *tú y yo*: New Data for the Subject Pronoun-Verb Switch Constraint

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Abstract: In early studies, code-switches between a subject pronoun and a finite verb were considered highly dispreferred or even impossible. However, naturalistic data from several language pairs has since highlighted that such switches are possible, although their grammaticality is constrained by the typology of the pronouns involved. In this study, we test the switching constraints postulated for subject pronouns-verbs among P'urhepecha-Spanish bilinguals ($n = 12$) from Michoacán, western Mexico. Using a two-alternative forced-choice acceptability judgement task (2AFC), we found that, contrary to expectations, switches between a third person singular pronoun and a verb were considered the most acceptable, followed by the coordinated 'you and I' second person, then the first person singular. The same order was found for both switch directions, despite third-person pronouns in P'urhepecha having a stronger typological profile. Building on the results of previous studies, we suggest that the lack of preference for a single switch direction is evidence for language-specific code-switching patterns, as well as possible differences in productive vs. receptive language. Additionally, we highlight the probative value of judgement data, particularly those emerging from 2AFC tasks, as a means of expanding our understanding of grammaticality in code-switching.

Keywords: code-switching; subject pronoun-verb switch; P'urhepecha-Spanish bilinguals; judgement tasks



Citation: Bellamy, Kate, Hans Stadthagen-Gonzalez, and M. Carmen Parafita Couto. 2022. *Él Code-Switches More Than *tú y yo*: New Data for the Subject Pronoun-Verb Switch Constraint*. *Languages* 7: 22. <https://doi.org/10.3390/languages7010022>

Academic Editor:
Bryan Koronkiewicz

Received: 9 August 2021

Accepted: 14 January 2022

Published: 28 January 2022

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1. Introduction

Code-switching is a natural and commonly occurring phenomenon; it can be observed in the speech and writing of multilinguals who go back and forth between their languages in the same conversation or text (e.g., Deuchar (2012)). As the following English-Spanish examples demonstrate, code-switching happens both between (1a) and within (1b) clauses.

(1a) Sometimes I'll start a sentence in Spanish, *y termino en español*
and I finish in Spanish (Poplack 1980)

(1b) *Estaba* snowing
it was (Miccio et al. 2009)

It is generally accepted that code-switching is not a random process (cf. Labov (1971)), but is a rule-governed speech practice, indicative of high proficiency in, and active use of, both/all of a speaker's languages (e.g., Poplack (1980)). Speakers choose when, where and with whom to code-switch, and intuitively regulate the switch points. Code-switching may also facilitate language production: recent evidence suggests that habitual code-switchers have a higher global speech rate in bilingual mode (i.e., when they are code-switching) than

when they are unilingual mode (i.e., not switching; Johns and Steuck (2021); cf. Meuter and Allport (1999)). Nonetheless, the regularities and innovations observable in code-switched speech can—and should—inform theories of (multilingual) grammar more broadly (e.g., Toribio (2017); López (2020)).

The rules governing code-switching have, to date, largely been formulated in terms of structural constraints, such as the subject pronoun-verb constraint (e.g., MacSwan (1999) for Spanish-Nahuatl; see also MacSwan (2021)). Yet these constraints are often based on data from a small number of language pairs, sometimes just (one community of) Spanish-English speakers. Studies focusing on the same constraint or switch site may also use different methodologies, making their results less comparable and thus the overall claims less convincing (see, e.g., Parafita Couto et al. (2021) for an overview). Moreover, there is an expanding body of evidence to indicate that code-switching patterns are also modulated by community norms (e.g., Blokzijl et al. (2017)). There is, therefore, a clear need to expand the empirical base to test existing constraints, especially with typologically varied languages. The present study contributes to this broadening of the evidence base by focusing on the subject pronoun-verb constraint in P’urhepecha-Spanish bilinguals in Michoacán, Mexico.

1.1. Background

According to early studies, switches between a subject pronoun and a finite verb were dispreferred or even impossible (see Lipski (1978) on Spanish-English judgements; Timm (1975) on Mexican Spanish-US English production data from California; see also Lipski (2019); van Gelderen and MacSwan (2008)). An example of such a switch can be observed in the English-Spanish example in (2a). In contrast, and as highlighted by Fuertes et al. (2016), a switch between a full lexical DP and a finite verb continues to be considered acceptable, see (2b).

(2a) *She *odia los exámenes*
‘She hates exams’ (Fuertes et al. 2016, p. 80)

(2b) That teacher *odia los exámenes*
‘That teacher hates exams’ (Fuertes et al. 2016, p. 80)

However, as has been the case for many proposed constraints, counter-evidence for a (near-)ban on subject pronoun-verb switches soon emerged (see Toribio (2017) for a critique of the prevailing claim and counter-claim culture in code-switching research). This evidence stems from several sources, including a spoken corpus of French-Moroccan Arabic in Morocco, compiled by Bentahila and Davies (1983), see (3a, 3b).

(3a) *Moi* dɛlt
‘I went in’ (Bentahila and Davies 1983, p. 313)
Compare French unilingual: *je suis entré* ‘I went in’

(3b) Nta *tu* vas travailler
‘You, you are going to work’ (Adapted from Bentahila and Davies (1983, p. 313)
Compare Moroccan Arabic unilingual: *nta matažiš lhna* ‘you don’t come here’

Two noteworthy points emerge from these examples: first, the switch can go in both directions; in other words, a pronoun from French or Moroccan Arabic can be followed by a verb (and other elements) in the other language of the pair. Second, the behaviour of the two switch directions is not the same (see Deuchar (2020) for a discussion of directionality in code-switching). In (3a), the French discourse-emphatic pronoun *moi* ‘me’ combines directly with the Arabic finite verb, even though in unilingual French mode, the personal pronoun *je* ‘I’ would be used to express the subject. In contrast, in (3b) there is doubling between the discourse-emphatic Arabic pronoun *nta* ‘you’ and the French personal pronoun *tu* ‘you’ (see also the discussion of the Matrix Language Frame (MLF) model below).

On the basis of evidence such as that presented in (3a, 3b), it has been claimed that the grammaticality of the subject pronoun-verb switch is modulated by the typology or features

of the pronouns involved (see [Cardinaletti and Starke \(1999\)](#)). To this end, two approaches have been proposed to account for (un)acceptable switches: Generativism/Minimalism on the one hand, and the Matrix Language Frame model on the other.

1.2. Generativist/Minimalist Approaches

In reference to Spanish-English, [González-Vilbazo and Koronkiewicz \(2016\)](#) outline the four contexts in which a subject pronoun-verb switch is allowed:

- Coordination, e.g., *tú y yo* ordered ... (you and I)
- Modification, e.g., *él con el pelo negro* ordered ... (him with the black hair)
- Prosodic stress, e.g., *pero ÉL* ordered ... (HE)
- Clefts, e.g., *dijo que es él que* ordered ... ([she] said that it is he who)

Subject pronouns are considered to be syntactically akin to lexical DP subjects in these contexts (they are ‘strong’, as in example (2b)), thereby licensing the switch (see also [Koronkiewicz \(2020\)](#)). In [MacSwan’s \(1999\)](#) Nahuatl-Spanish judgement data, however, switches are constrained by the person of the pronoun: a Spanish (underlined) subject pronoun followed by a Nahuatl verb is only acceptable for the third person (4a, 4b).

(4a)	<u>Él</u> <i>kikoas tlakemetl</i>		
	<u>Él</u>	ø-ki-koa-s	tlake-me-tl
	he	3S-3Os-buy-FUT	garment-PL-NSF ¹
	‘He will buy clothes’		(MacSwan 1999 , p. 129)

(4b)	* <u>Yo</u> <i>nikoas tlakemetl</i>		
	<u>Yo</u>	ni-k-koa-s	tlake-me-tl
	I	1S-3Os-buy-FUT	garment-PL-NSF
	‘I will buy clothes’		(MacSwan 1999 , p. 129)

These judgements also hold when the subject pronoun is postponed to the end of the clause, as indicated in (5a, 5b).

(5a)	<i>Kitlalia tlantikuaske nochipa él</i>		
	ø-ki-tlalia	tlantikuaske	nochipa <u>él</u>
	3S-3Os-prepare	food	daily he
	‘He prepares food every day’		(MacSwan 1999 , pp. 129–30)

(5b)	* <i>Niktalia tlantikuaske nochipa yo</i>		
	ni-k-tlalia	tlantikuaske	nochipa <u>yo</u>
	1S-3Os-prepare	food	daily I
	‘I prepare food every day’		(MacSwan 1999 , pp. 129–30)

The permitted switch with the third person pronoun in Spanish corresponds to the absence of overt third-person subject marking in Nahuatl ([MacSwan 1999](#), pp. 128–29). A different picture emerges, however, when the switch is between a Nahuatl subject pronoun and a Spanish verb; here switches are degraded for the first person (marked by ‘?’), and unacceptable for other persons, see (6a, 6b).

(6a) ?Ne tengo (una) casa ‘I have a house’

(6b) *Te tienes (una) casa ‘You have a house’ ([MacSwan 1999](#), p. 130)

The second person is especially unacceptable due to the similarity between the Spanish *te* (second person singular clitic/reflexive) and Nahuatl *te* (second person singular subject pronoun), which are phonetically identical but syntactically behave very differently.

1.3. MLF Approach

The MLF assumes an asymmetry between the languages participating in a code-switched clause. One language—the matrix language—provides the system morphemes, that is, morphemes that do not assign thematic roles (e.g., finite verb morphology), while the other language—the embedded language—generally provides content morphemes, such as nouns, which do assign or receive thematic roles (Myers-Scotton 1993, 2002). The matrix language of a clause is identified on the basis of two principles: the Morpheme Order Principle (MOP) and the System Morpheme Principle (SMP). The MOP indicates the language that provides the word order for the clause, while the SMP indicates which language provides the system or functional morphemes, such as finite verb morphology.

In an MLF analysis, then, it is necessary to establish what kind of morphemes the personal pronouns are in a given language, namely system or content. Jake (1994) identifies four types of subject pronoun cross-linguistically (underlined and in boldface type in column two), two of which are classified as content morphemes, and two as system morphemes (see Table 1).

Table 1. Types of pronouns (in boldface and underlined) according to the MLF.

Pronoun Type	Example (French)	Content/System Morpheme
Discourse-emphatic	<u>moi</u> , j’ai faim	Content morpheme
Dummy	<u>il</u> y a un livre sur la table	System morpheme
Indefinite	<u>quelqu’un</u> veut partir	Content morpheme
Personal	<u>je</u> veux manger	System morpheme

The classification of subject pronouns is language-specific but, irrespective of the language, only those that are classified as content morphemes can participate in switches with verbs (Myers-Scotton 1993; Jake 1994). In Table 1, therefore, only discourse-emphatic (as in examples in (3) and (4), above) and indefinite personal pronouns can participate in code-switches. These two types of pronoun would be considered akin to lexical DP subjects in a Minimalist analysis.

2. Materials and Methods

The aim of the present study is to investigate subject pronoun-finite verb code-switching preferences among P’urhepecha-Spanish bilinguals in Mexico. P’urhepecha is a language isolate spoken in the state of Michoacán by around 125,000 people, the majority of whom are bilingual with Spanish, the main national language of education, administration, commerce, etc. (INEGI 2010). The language has been the subject of scholarly investigation since the mid-sixteenth century, when some of the earliest descriptive and lexicographic works in the Americas appeared (e.g., Gilberti [1559] 1975, Gilberti [1558] 1987). The modern era has provided only one full-length grammar (Chamoreau 2000), although shorter works, including grammar sketches (and a whole host of articles on specific topics) are also available (e.g., Foster 1969; Friedrich 1984; Capistrán Garza 2015, chp. 1; Bellamy 2018, chp. 1).

P’urhepecha is a wholly suffixing, agglutinative language with extensive derivational resources, including a large set of spatial location suffixes (e.g., Friedrich 1971; Monzón 2004; Mendoza 2007). It possesses both subject pronouns and subject (and object) clitics, which may co-occur in the same clause (see (7), taken from the first author’s own corpus (Bellamy forthcoming)).

- (7) *T’ueskiri?*
 t’u-e-s-ki = ri
 you-PRED-PERF-INTERROG = 2.SG.S
 ‘You are?’

Both P'urhepecha and Spanish have first, second and third person pronouns, with all three occurring in both the singular and the plural. That said, the third person pronouns are marked for different features: Spanish has a masculine/feminine distinction (*él, ella* 'he, she'), while the P'urhepecha pronouns indicate distance and visibility in relation to the speaker (*i* 'this, proximal', *inte* 'that, distal and visible', *ima* 'that, distal, not visible'). Table 2 provides an overview of the two subject pronoun paradigms.

Table 2. Subject pronoun paradigms in P'urhepecha and Mexican Spanish.

	P'urhepecha	Mexican Spanish		P'urhepecha	Mexican Spanish
1SG	ji	yo	1PL	jucha	nosotros
2SG	t'u	tú, usted	2PL	cha	ustedes
3SG	i, inte, ima	él, ella	3PL	ts'ĩ, ts'ĩmi, ts'ĩma	ellos, ellas

Moreover, third person pronouns in P'urhepecha are synchronically identical to the demonstrative pronouns. Depending on the location of the person (or object) in relation to the speaker, any of the three forms can therefore be used by a P'urhepecha speaker. In (8a), the third person plural distal visible *ts'ĩmi* functions as a personal pronoun, whereas in (8b), it functions as a demonstrative pronoun.

- (8a) *Ts'ĩmi sapirhastiksi*
 ts'ĩmi sapi-rha-s-ti = ksĩ
 3.PL small-SF.PL-PERF-3.S.ASS = 1/3.S
 'They are small.'
- (8b) *Ts'ĩmi kurucha sapirhastiksi*
 ts'ĩmi kurucha sapi-rha-s-ti = ksĩ
 3.PL fish small-SF.PL-PERF-3.S.ASS = 1/3.S
 'Those fish are small.'

Note also that the inclusion of the personal pronoun in (8a) is optional since subject person marking is present in the form of the clitic = *ksĩ*. Alternatively, the clitic could be omitted, but then the pronoun would be required to differentiate between first and third person plural, if context could not. As such, it seems that third person pronouns in P'urhepecha could be considered strong (in the Minimalist/generativist sense) or discourse-emphatic and, thus, content morphemes (in the MLF sense).

2.1. Research Questions

On the basis of previous findings, as well as the differences between the two sets of subject pronoun systems in P'urhepecha and Spanish, two principal research questions and associated hypotheses were formulated. The first tests the Minimalist/generativist proposal that only strong or contextually lexical pronouns are acceptable in code-switches, while the second tests the MLF prediction that only content morphemes can partake in pronoun-verb switches.

RQ1: Are strong or contextually lexical pronouns, namely, coordinated pronouns (e.g., *tú y yo, t'u ka ji* 'you and I'), more acceptable than less lexical ones (e.g., *nosotros, jucha* 'we') in pronoun-verb switches?

Expectation: Coordinated pronouns are more acceptable than non-coordinated pronouns.

RQ2: Are content morphemes (e.g., P'urhepecha *ima* 's/he, that') more acceptable than system morphemes in switches?

Expectation: The third-person pronouns in P'urhepecha may be preferred as they are also demonstratives and can be considered content morphemes, while the others (and all those in Spanish) could be considered system morphemes and, thus, dispreferred.

2.2. Stimuli

Three subject pronouns were used from each language (Spanish and P'urhepecha): 1SG, *yo/ji* 'I', 1PL coordinated, *tú y yo/t'u ka ji* 'you and I', and 3SG *él/ella/ima s/he*' (distal, non-visible in P'urhepecha). For each pronoun we generated five sentences with the switch going from P'urhepecha to Spanish and five from Spanish to P'urhepecha. Each pair of sentences differed in the subject pronoun, which was always sentence-initial, and its verbal agreement. This gave us a total of 15 pairwise comparisons in each switch direction. Examples of such pairwise comparisons can be found in (9a–9c), where the P'urhepecha subject pronouns are underlined.

- | | | |
|------|--|-------------|
| (9a) | <u>ji</u> trabajo cada día hasta las 10
<u>ima</u> trabaja cada día hasta las 10
'I/s/he work(s) every day until 10.' | 1SG vs. 3SG |
| (9b) | ji corro muy lentamente
<u>t'u</u> ka ji corremos muy lentamente
'I // you and I run very slowly.' | 1SG vs. 1PL |
| (9c) | <u>ima</u> canta canciones tradicionales
<u>t'u</u> ka ji cantamos canciones tradicionales
'S/he//you and I sing traditional songs.' | 3SG vs. 1PL |

Sentences with the opposite switch direction (Spanish to P'urhepecha) take the same form, but only the subject pronoun is in Spanish (see Appendix A for a full list of the stimuli).

2.3. Task

Participants completed a two-alternative forced-choice acceptability judgement task (2AFC) administered through Qualtrics. In the 2AFC task participants are presented with successive pairwise comparisons of exemplars belonging to all the relevant conditions and are asked to select one preferred item from each pair. The 2AFC task has been shown to be a good method for measuring subjective judgements (Stadthagen-González et al. 2018). Comparative judgments present multiple advantages over other methods used for acceptability judgements such as Yes/No acceptability tasks and Likert-type scales (see, e.g., Párraga (2015)), including higher inter- and intra-participant reliability (Mohan 1977); higher statistical power (Sprouse 2011), and more sensitivity to contrasts between conditions (Stadthagen-González et al. 2018).

The task consisted of 30 experimental stimuli (five per condition × two switch directions), 40 fillers, and eight quality control items. For each item, participants saw two code-switched sentences and were asked to choose which sounded more natural to them. Experimental stimuli consisted of pairwise comparisons between all the relevant conditions described above, while filler items contrasted code-switched sentences with different gender-assignment strategies for nouns (the analysis of those items has been reported in (Bellamy et al. 2018)). The quality control items included code-switched sentences containing an incorrect subject-verb agreement in both languages (four in P'urhepecha, four in Spanish). The criterion for exclusion from the study was set at three or more incorrect answers for these quality control questions, but there was no need to exclude any participants based on this criterion. The order of presentation of items, as well as the order of each member of a pair within an item, was individually randomized for each participant. The 2AFC task was completed first, followed by a sociolinguistic questionnaire.

2.4. Participants

Twelve participants (six female) with an average age of 27;9 years (range = 21;6–37;9, SD 5.1) took part in the experiment. All are P'urhepecha-Spanish bilinguals, 11 of whom were born in Michoacán, and all were living there at the time of testing. Nine participants reported acquiring P'urhepecha from birth to two years, two from the age of four and one from

primary school onwards. Only one participant (the same who started speaking P'urhepecha at primary school) reported learning Spanish from birth to two years and so represents the only early sequential Spanish-P'urhepecha bilingual in the sample. Of the P'urhepecha L1 speakers, two reported learning Spanish from age four or earlier, six from primary school, one from secondary school, and one as an adult. Regarding current language use, only one participant reported speaking only P'urhepecha at home and with friends. Three use half-half P'urhepecha and Spanish, while five use a lot of P'urhepecha and a bit of Spanish, and the final three, a lot of Spanish and a bit of P'urhepecha in the same contexts.

Participants also self-reported frequency of and attitudes towards code-switching. One participant reported using P'urhepecha and Spanish in the same sentence every day, four reported that they did so a few times a week, one once a week, two a few times a month, two less than once a month, and two stated that they never engaged in such a practice. To the statement, “people should avoid mixing P'urhepecha and Spanish in the same conversation”, responses varied across the spectrum: two were totally in agreement, four in agreement, two neither agreed nor disagreed, two were in disagreement and two totally disagreed.

3. Results

Data from the forced-choice responses were analysed using [Thurstone's \(1927\)](#) analysis for comparative judgements case V. The measures resulting from Thurstone's analysis can be interpreted as values on an interval scale that represent the acceptability of the code-switched sentences and are relative to the pattern with the lowest acceptability for each direction of switch (which is, by convention, set to 0). The unit of measurement along that scale is defined as the standard deviation of the distribution, so the measure itself provides information about its variability. [Stadthagen-González et al. \(2018\)](#) provide further details on the use of this type of analysis in code-switching research. We calculated the confidence intervals using [Montag's \(2006\)](#) method, which was specifically developed for paired comparison data. The 95% confidence interval for the data collected was ± 0.15 .

Figures 1 and 2 summarise the results of our analysis for Spanish to P'urhepecha and P'urhepecha to Spanish switches, respectively. For both switch directions, the third person singular pronoun is preferred well above the other two options. Second in preference is the coordinated ‘you and I’ pronoun, followed by the first person singular, again for both switch directions. In the case of a Spanish subject pronoun and a P'urhepecha verb, the differences between each rank (i.e., each pronoun) are all significant (see Figure 1).

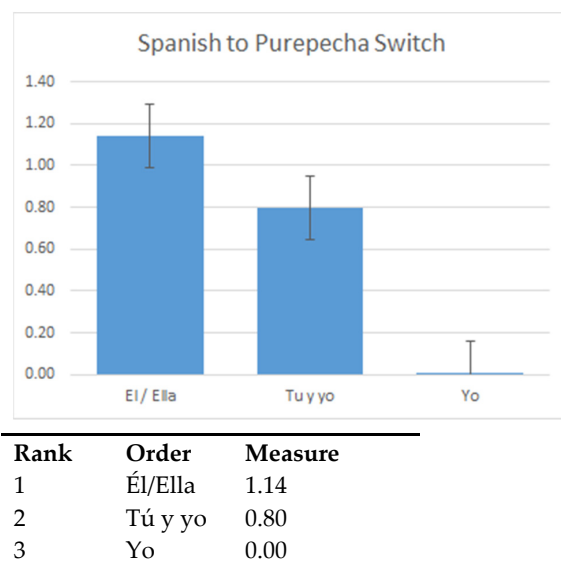


Figure 1. Rank ordering of 2AFC results for Spanish to P'urhepecha switches (above), including the measure of Thurstone's analysis (below).

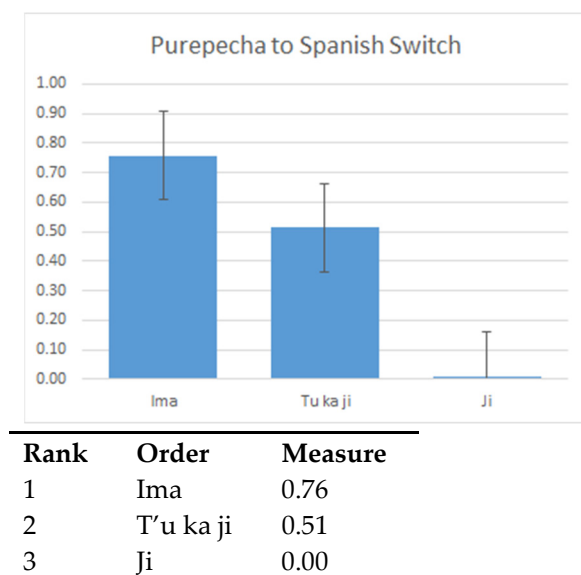


Figure 2. Rank ordering of 2AFC results for P'urhepecha to Spanish switches (above), including the measure of Thurstone's analysis (below).

While the rank ordering is the same for P'urhepecha to Spanish switches, only the difference between 1SG and the other two conditions (1PL coordinated and 3SG) is significant (see Figure 2). The difference between 3SG and 1PL coordinated conditions approaches significance and, in all likelihood, this difference would become significant with a few more participants.²

These results are rather unexpected. Following, *inter alia*, [González-Vilbazo and Koronkiewicz \(2016\)](#), we would expect the coordinated 1PL pronoun in Spanish to be more acceptable than the weak 3SG or 1SG, but this is not what we find. Indeed, despite Spanish *él/ella* 's/he' being weak pronouns/system morphemes, and P'urhepecha *ima* 's/he' a strong pronoun/content morpheme, both are the most acceptable choice for the participants.

4. Discussion and Conclusions

The main finding of the present study is that code-switches involving a 3SG pronoun and a finite verb were considered the most accepted for both switch directions, followed by coordinated 1PL, and then 1SG. On the basis of previous studies, we predicted that coordinated pronouns would be more acceptable in switches than non-coordinated pronouns (RQ1). This prediction was clearly not borne out by the findings. That 3SG is acceptable in both directions also contrasts with [MacSwan's \(1999\)](#) judgement findings for Spanish-Nahuatl, where the 3SG pronoun was only accepted when it occurred in Spanish. We could therefore view the present results as an example of language-specific patterns in code-switching, since a universal ordering cannot be sustained. In the absence of results from another P'urhepecha-Spanish bilingual community, it is perhaps unwise to claim that the patterns are also community-specific. Nevertheless, it seems clear that previous claims regarding the acceptability of pronoun-verb switches should be revised in light of these new data.

We also predicted that third person pronouns in P'urhepecha would be preferred as they could be considered content morphemes, while the other pronouns (and all those in Spanish) could be considered system morphemes and thus dispreferred (RQ2). In Minimalist/generativist terms, the lexically strong 3SG in P'urhepecha would be preferred over the other, lexically weak pronouns. This prediction was partially upheld, since 3SG was the preferred pronoun for switches, but both strong (i.e., P'urhepecha *ima* 's/he') and weak (i.e., Spanish *él* 'he') behaved identically, contrary to predictions.

However, this result is not necessarily that surprising, given the results of previous studies. [Parafita Couto and Stadthagen-Gonzalez \(2019\)](#), for example, find that the norms of

the Spanish-English bilingual community under investigation were to express no preference for a particular switch direction in mixed NPs. This lack of preference is observed in two types of judgement tasks (forced-choice and Likert scale), despite naturalistic production data in the same language pair showing far more switches from Spanish to English, i.e., that Spanish functions overwhelmingly as the Matrix Language. We could view this as a difference between receptive and productive language.

A similar situation seems to hold for P'urhepecha-Spanish: in a corpus of around ten hours (Bellamy *forthcoming*), P'urhepecha is overwhelmingly the Matrix Language in code-switched speech (although it should be highlighted that this may not be true of all P'urhepecha-Spanish-speaking communities). Given the attested directionality preference in production, we might therefore expect speakers to have less clear judgements in their less frequent switch direction and, thus, follow the judgements they would make for switches in the more frequent direction. A similar finding emerged from an acceptability judgement task measured with event-related potentials (ERP): Vaughan-Evans et al. (2020) found that Welsh-English bilinguals only differentiated between adherence and violation conditions when the matrix language of the stimulus was Welsh, i.e., for Welsh to English code-switches.

That said, it is acknowledged that despite their richness and ecological validity, corpus data are not exhaustive, and not all naturally occurring structures will appear in a given corpus, irrespective of its size. Moreover, corpora are not probative in nature, but rather can be used to generate hypotheses and construct experimental materials (Stadthagen-González et al. 2018). As we saw above, it is possible for receptive and productive language to not fully overlap (yet both being part of a person's language competence), and for those differences to be reflected in specific tasks. Consequently, judgement tasks provide a valuable means of testing—and potentially falsifying—these generated hypotheses in a controlled, more probative, way than could be accomplished with corpus-based research alone. As also indicated above, the forced-choice format also has advantages over scaled or yes/no judgement tasks, since the latter are more likely to be affected by extra-linguistic factors such as attitudes and also display weaker intra- and inter-participant reliability (see, e.g., Párraga (2015)). Indeed, this study also highlights the benefit of using a 2AFC judgement task: despite the wide range of attitudes towards code-switching reported by the participants (see Section 3), the results are very clear.

In sum, the findings of the present study indicate that the patterns of subject pronoun-finite verb code-switches vary between language pairs, rather than constituting universal constraints of code-switching behaviour. More data from this and other communities is necessary to expand our understanding of the limits of this particular code-switch, amongst many others. Code-switched language reveals combinatorial possibilities that would otherwise be hidden in monolingual speech, and so is vital for refining grammatical theory (see Vanden Wyngaerd (2021) for an overview). In addition, the results highlight both the advantage and the need for data to be collected using multiple methods (see also Parafita Couto et al. (2021); Gullberg et al. (2009)). More extensive, comparable data will help us to tease apart the relationship between acceptability and usage patterns. The ultimate goal of such work, therefore, is to test and refine existing models of code-switching in order to improve our understanding of (multilingual) language competence.

Author Contributions: Conceptualisation, K.B., H.S.-G., M.C.P.C.; methodology, M.C.P.C., H.S.-G.; formal analysis, H.S.-G.; writing—original draft preparation, K.B., H.S.-G., M.C.P.C.; writing—review and editing, H.S.-G., M.C.P.C., K.B.; visualization, H.S.-G. All authors have read and agreed to the published version of the manuscript.

Funding: During the writing of this article, Kate Bellamy was funded by a Marie Curie Individual Fellowship, grant number 845430, and in the revision phase by a Postdoctoral Mandate at KU Leuven.

Informed Consent Statement: Informed consent was obtained from all subjects involved in the study.

Data Availability Statement: While the stimuli and overall responses are reported in this paper, the full dataset underpinning this study can be obtained from the authors.

Conflicts of Interest: The authors declare no conflict of interest.

Appendix A

Table A1. Experimental stimuli: Spanish to P'urhepecha switches.

StimID	Item	Contrast	Spanish Translation
1a	yo wani anchikurixinkani	1SG	trabajo mucho
1b	él/ella wani anchikurixinti	3SG	trabaja mucho
2a	yo churikwa kw'ixinkani	1SG	duermo (durante) la noche
2b	él/ella churikwa kw'ixinti	3SG	duerme (durante) la noche
3a	yo kokani jamaxinkani	1SG	camino rapidamente
3b	él/ella kokani jamaxinti	3SG	camina rapidamente
4a	yo winani pirixinkani	1SG	canto alto
4b	él/ella winani pirixinti	3SG	canta alto
5a	yo wekaxinkani warhani	1SG	quiero bailar
5b	él/ella wekaxinti warhani	3SG	quiere bailar
6a	yo wetarhikani erokani	1SG	debo esperar
6b	él/ella wetarhiti erokani	3SG	debe esperar
7a	yo yot'akwa anchikurixinkani	1SG	trabajo (hasta) tarde
7b	tu y yo yot'akwa anchikurixinkakxi	1PL	trabajamos (hasta) tarde
8a	yo kant'arxku kw'ixinkani	1SG	duermo cuando sea
8b	tu y yo kant'arxku kw'ixinkakxi	1PL	dormimos cuando sea
9a	yo yapuru jamaxinkani	1SG	camino dondequiera
9b	tu y yo yapuru jamaxinkakxi	1PL	caminos dondequiera
10a	yo sani pirixinkani	1SG	canto poco
10b	tu y yo sani pirixinkakxi	1PL	cantamos poco
11a	yo wekaxinkani karani	1SG	quiero escribir
11b	tu y yo wekaxinkakxi karani	1PL	queremos escribir
12a	yo niakani tianguisrhu	1SG	iré al mercado/tianguis
12b	tu y yo niakakxi tianguisrhu	1PL	iremos al mercado/tianguis
13a	él/ella mantani jurhiatani anchikurixinti	3SG	trabaja cada día
13b	tu y yo mantani jurhiatani anchikurixinkakxi	1PL	trabajamos cada día
14a	él/ella inchatiru kw'ixinti	3SG	duerme (hasta) tarde
14b	tu y yo inchatiru kw'ixinkakxi	1PL	dormemos (hasta) tarde
15a	él/ella niati tarhu	3SG	irá a casa
15b	tu y yo niakakxi tarhu	1PL	iremos a casa
16a	él/ella piriti pirekwaecha	3SG	canta canciones tradicionales
16b	tu y yo pirikakxi pirekwaecha	1PL	cantemos canciones tradicionales
17a	él/ella wekaxinti ninirani	3SG	quiere cocinar
17b	tu y yo wekaxinkakxi ninirani	1PL	queremos cocinar
18a	él/ella wetarhiti t'ireni kupandaechani	3SG	debe comer aguacates
18b	tu y yo wetarhikakxi t'ireni kupandaechani	1PL	debemos comer aguacates

Table A2. Experimental stimuli: P'urhepecha to Spanish switches. Note that the translations are the same as for the target items presented in the table above.

StimID	Item	Contrast
1a	ji trabajo cada día hasta a las 10	1SG
1b	ima trabaja cada día hasta a las 10	3SG
2a	ji duermo durante el día	1SG
2b	ima duerme durante el día	3SG
3a	ji camino rapidamente	1SG
3b	ima camina rapidamente	3SG
4a	ji canto demasiado alto	1SG
4b	ima canta demasiado alto	3SG
5a	ji quiero bailar bachata	1SG
5b	ima quiere bailar bachata	3SG
6a	ji debo esperar el autobús	1SG
6b	ima debe esperar el autobús	3SG
7a	ji trabajo en una escuela primaria	1SG
7b	t'u ka ji trabajamos en una escuela primaria	1PL
8a	ji vivo en Santa Fe de la Laguna	1SG
8b	t'u ka ji vivimos en Santa Fe de la Laguna	1PL

Table A2. Cont.

StimID	Item	Contrast
9a	ji corro muy lentamente	1SG
9b	t'u ka ji corremos muy lentamente	1PL
10a	ji hablo con la vecina en la mañana	1SG
10b	t'u ka ji hablamos con la vecina en la mañana	1PL
11a	ji quiero pintar los muros de la casa	1SG
11b	t'u ka ji queremos pintar los muros de la casa	1PL
12a	ji debo ir a la tienda	1SG
12b	t'u ka ji debemos ir a la tienda	1PL
13a	ima trabaja cada fin de semana	3SG
13b	t'u ka ji trabajamos cada fin de semana	1PL
14a	ima duerme hasta tarde la mañana	3SG
14b	t'u ka ji dormimos hasta tarde la mañana	1PL
15a	ima camina muy rapidamente	3SG
15b	t'u ka ji caminamos muy rapidamente	1PL
16a	ima canta canciones tradicionales	3SG
16b	t'u ka ji cantemos canciones tradicionales	1PL
17a	ima quiere cocinar un plato frances	3SG
17b	t'u ka ji queremos cocinar un plato frances	1PL
18a	ima debe comer galletas cada día	3SG
18b	t'u ka ji debemos comer galletas cada día	1PL

Notes

- ¹ The following abbreviations are used in this paper: 1 first person, 2 second person, 3 third person, ASS assertive, FUT future, INTERROG interrogative, 3 third person, NSF absolutive, O object, PERF perfective, PL plural, PRED predicativisor, S subject, s singular object, SF stem formative, SG singular.
- ² While we acknowledge that a larger sample could have made certain marginal differences significant, obtaining more participants proved very difficult.

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