Processing subject focus across two Spanish varieties

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Abstract

Linguists have keenly studied the realization of focus – the part of the sentence introducing new information – because it involves the interaction of different linguistic modules. Syntacticians have argued that Spanish uses word order for information-structural purposes, marking focused constituents via rightmost movement. However, recent studies have challenged this claim (e.g., Gabriel 2010; Hoot 2016; Leal, Destruel, and Hoot 2018a). To contribute sentence-processing evidence, we conducted a self-paced reading task and a judgment task with Mexican and Catalonian Spanish speakers. We found that movement to final position can signal focus in Spanish, in contrast to the aforementioned work. We contextualize our results within the literature, identifying three basic facts that theories of Spanish focus and theories of language processing should explain, and advance a fourth: that mismatches in information-structural expectations can induce processing delays. Finally, we propose that some differences in the existing experimental results may stem from methodological differences.

Keywords: focus, processing, information structure, Spanish, self-paced reading

1 Introduction

The realization of focus, the part of the sentence providing new information or information that is especially relevant for its interpretation, involves the interaction of linguistic modules such as syntax, semantics, phonology, and pragmatics. Linguists have been interested in focus realization because it informs debates on the architecture of mental grammars and the relationships between modules (Chomsky 2001; Fodor 1983; Reich 2012; Reinhart 2006). It is widely accepted that, across languages, focus is prominent, while discourse-given information – information already in the context – is less prominent relative to the focus. Prominence can vary crosslinguistically and include syntactic and/or prosodic operations, (e.g., placing the focus in a particular position or marking the focus with a special pitch accent). Here, we concentrate on the specific realizations of information focus in Spanish, which have recently been a matter of lively debate.[1]

Spanish has played a key role in the investigation of focus because syntacticians have claimed that Spanish speakers strongly prefer to assign prominence to focused constituents via syntactic movement, rather than using prosody, as English does. Not surprisingly, theories of focus movement, most prominently in work by Zubizarreta (1998), have given Spanish data special importance. Within the past decade, however, several researchers have submitted results that differ from the syntactic account, resulting in a lack of consensus on the facts of Spanish focus. Additionally, many linguistic and

[1] As we mention later, we can distinguish between information focus (which we will define subsequently) and contrastive focus (also called fronted or preposed). Pragmatically, information focus closes an open variable in the discourse, while contrastive focus has the dual task of both opening and closing a variable in the discourse (López 2009). We are thankful to a reviewer for prompting us to clarify this important distinction earlier.

extralinguistic factors remain un- and under-investigated. Adding experimental data to this base of knowledge is vital because focus marking has implications not only for focus theories, but also for linguistic theory more broadly (see Reich 2012). Moreover, if one espouses a view whereby a theory of focus must account for data elicited through multiple methods, it is valuable to enlarge the evidence base, especially if the methods can provide novel insights. Our purpose here is to contribute new sentence processing data to this debate. Importantly, we must note that self-paced reading tasks have been successfully used in previous research to study information structure (Kaiser and Trueswell 2004, Slioussar 2011, Weskott et al. 2011), although its use is far from commonplace.

In our view, we are at a critical point in the study of Spanish information focus where a comprehensive theory must account for a number of findings. Although we will discuss these facts in more detail later, we provide a list in (1).

(1) Empirical explananda for a theory of focus in Spanish

1. Focus is associated with prominence
2. Constituents may be prominent in more than one way:
    a. Via *in-situ stress*, or
    b. Via *movement to final position*.
3. Prominence-marking mechanisms can be constrained by independent linguistic factors, such as the base positions of the focused constituents (e.g., subject vs. objects; arguments vs. adjuncts) or the presence of

other constituents in the sentence (e.g., full DP objects vs. clitics within VP), although different mechanisms may be in free variation.

Many of the facts in this list are widely acknowledged and fit well with previous overviews (e.g., Olarrea 2012). Nevertheless, no one syntactic theory currently accounts for all of the facts of Spanish focus as presented here. Foreshadowing our results, we provide either direct or indirect evidence for all the facts outlined in (1), strengthening the case for a theory that can account for all and not only a select few.

We aim to make following contributions. First, we provide evidence of Spanish focus from sentence processing, currently missing from the literature. Second, we consider the effects of task design by comparing data from two different methods. Third, we explore the effects of dialect, a decision that allows us to both expand the current empirical coverage and investigate variety-related effects. Finally, we examine under-investigated linguistic factors such as the role of canonical SVO word order and the presence of a full DP versus a clitic in the sentence.

2 Focus

We take *information focus* to be the non-presupposed part of the sentence that is relevant for interpretation in a given discourse context. Information focus can be understood as closing an open variable from the previous discourse (López 2009 and citations therein) or evoking sets of alternative propositions that are relevant for interpreting an utterance (Rooth 1992). Information focus is commonly identified via question-answer pairs, where the constituent corresponding to the *wh*-word constitutes the focus. In (2), *a platypus* is the focus because it answers the question.

(2) *What did Lori buy?*

Lori bought [a platypus]$_F$.

Cross-linguistically, information focus can be made prominent through different operations, including syntactic movement placing focus in a salient position (e.g., at a sentence's left or right edge); prosody (e.g., increased stress, special pitch accents, focus alignment with prosodic boundaries); or morphological markings (e.g., realization via special morphemes). In fact, many languages combine more than one strategy. In Spanish, focal constituents can be made prominent by moving constituents, yet moved constituents are also marked with pitch accents. English, on the other hand, primarily marks focal constituents with in-situ stress, although movement is also allowed for certain focus types (Ward and Birner 2004).

We refer specifically to *information* focus because we must distinguish between different focus types, which can have different interpretations and realizations. Although there exist different typologies (see, e.g., Büring 2009; Krifka 2007), we can minimally distinguish *contrastive* from *information* focus. Information focus, shown in (2), introduces new, non-presupposed information, and closes a variable in the discourse. Contrastive focus, however, simultaneously opens and resolves a variable, e.g., contradicting something already mentioned in the discourse, as in (3).

(3) *Lori bought a hedgehog.*

She bought [a platypus]$_{CF}$ (not a hedgehog).

Contrastive focus and information focus have different realizations in both English and Spanish. In addition to the additional pragmatic meaning (e.g., correction), different prosodic and word-order options are available for contrastive focus. Additionally, we can

distinguish “broad” from “narrow” focus. Focus is broad when the whole sentence is new information; focus on a single constituent constitutes narrow focus. In what follows, when we refer merely to “focus,” it should be taken to mean *narrow information focus*.

Languages can display asymmetries in focus marking depending on which constituent is the focus. Cross-linguistically, it is widely recognized that marking focus with special constructions is more common for subjects than for objects (Skopeteas and Fanselow 2010). This fact has largely remained unaddressed in work on Spanish; most mainstream syntactic accounts (e.g., López 2009; Olarrea 2012; Zubizarreta 1998) treat all focused constituents equally, although some researchers have found evidence suggesting subject-object asymmetries in Spanish (Feldhausen and Vanrell 2014, 2015; Hoot 2016; Leal, Destruel, and Hoot 2018a, 2018b).

3 Focus in Spanish

3.1 The traditional syntactic view

How do Spanish speakers mark new and old information? Over half a century ago, Bolinger (1954) noted that new information tends to appear sentence-finally in Spanish, highlighting that Spanish uses its flexible word order for information-structural purposes. Since then, several syntacticians have proposed that Spanish marks information focus via movement to rightmost position, where it receives main sentence stress (see, e.g., Büring and Gutiérrez-Bravo 2001; Casielles-Suárez 2004; Contreras 1978; Domínguez 2004a; Olarrea 2012; Ortega-Santos 2006; Zubizarreta 1998). This view is exemplified in (4), where (b) is claimed to be the only available response to a question like (a) because the focused subject appears in final position. Stressing the focus in situ,

as in (c), is claimed to be infelicitous. Other authors (in particular, Casielles-Suárez 2004; Olarrea 2012), however, have argued that rightmost focus is only one of many possible strategies.

(4) Subject focus

a. *¿Quién compró un ornitorrinco?*

'Who bought a platypus?'

b. *Compró un ornitorrinco [**Lori**]$_F$.*

bought a platypus Lori

'Lori bought a platypus.'

c. *# [**Lori**]$_F$ compró un ornitorrinco.*

Under the traditional syntactic view, the same pattern holds for other constituents. When a direct object is in focus, it appears in final position, receiving stress. In canonical SVO sentences, focusing the object requires no movement unless the object is followed by a prepositional phrase, in which case we see syntactic reordering, exemplified in (5).

(5) Object focus[2]

a. *¿Qué compró Lori para su hermana?*

'What did Lori buy for her sister?'

b. *Lori compró para su hermana [un **ornitorrinco**]$_F$.*

Lori bought for her sister a platypus

'Lori bought a platypus for her sister.'

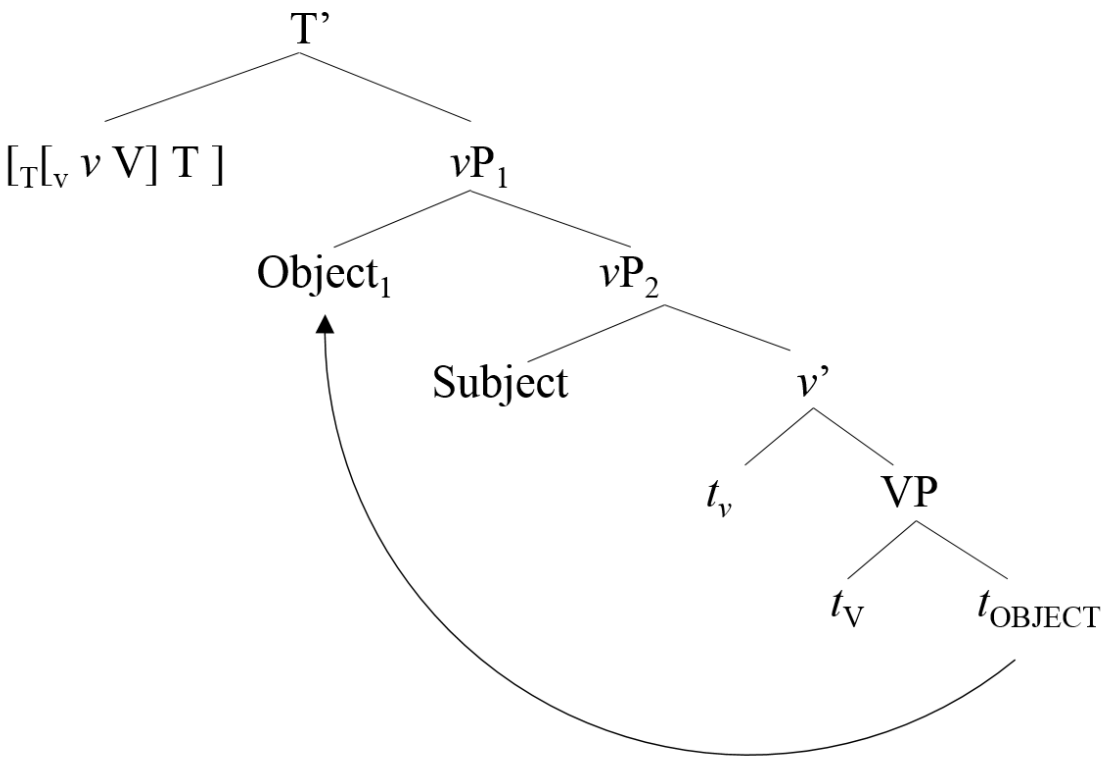
c. *# Lori compró [un **ornitorrinco**]$_F$ para su hermana.*

[2] As one reviewer duly notes, the options in (5) are hardly comprehensive if one considers other foci types, like contrastive focus. As mentioned earlier, however, the function of information and contrastive foci are distinct such that an utterance like *UN ORNITORRINCO compró para su hermana* explicitly contrasts the preposed constituent (UN ORNITORRINCO) with something already mentioned or implied.

In sum, this view contends that marking focus by merely stressing the object in situ is not a viable strategy when the object is not sentence final because Spanish relies on movement rather than stress.

Gallego (2013) has noted that there are two principal proposals for how focus-marking word orders such as VOS are derived. The first, exemplified by Ordóñez (1998), is object shift (or "scrambling"), whereby V moves to T, with the subject in Spec,*v*P and the object scrambling out of VP to a higher functional projection. Gallego proposes that this higher projection is *v*P, as we can see in (6).

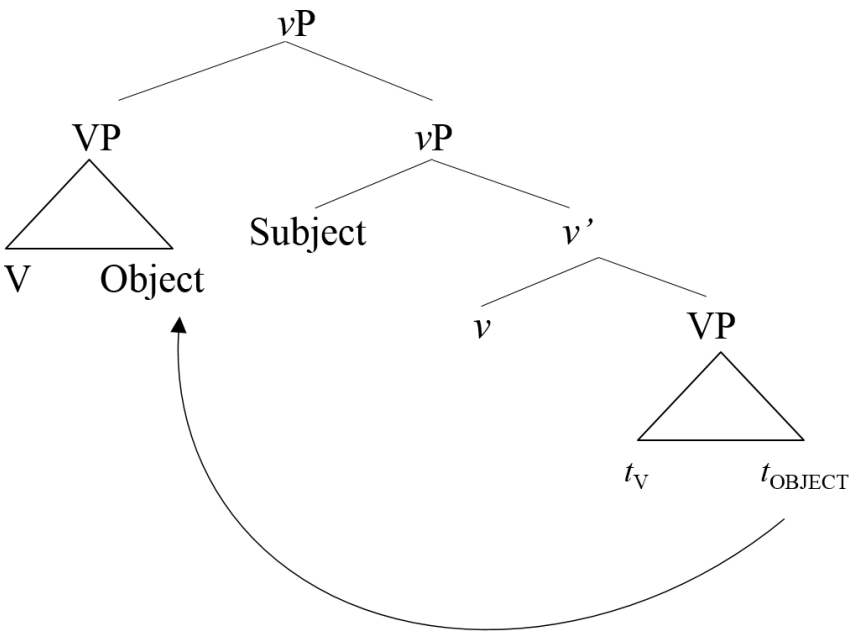
(6) VO[S]$_F$ derivation via scrambling of the object (Gallego 2013; Ordóñez 1998)



Gallego (2013) notes that the second alternative, represented here by Zubizarreta's (1998) analysis, proposes that it is the VP (including both the verb and the

object) that is fronted instead. This derivation is illustrated in (7). Although not exemplified in (7), in Spanish V moves to T after fronting. Afterwards, the subject moves to Spec,T and then again up to Spec,Foc.

(7) VO[S]$_F$ derivation via VP shift (Zubizarreta 1998)



What is most notable about this proposal is that Zubizarreta argues that focus movement is motivated by prosody. Specifically, she argues that focus movement results from the interaction of two independent rules governing stress placement. The Nuclear Stress Rule (NSR) requires stress on the lowest constituent by asymmetric c-command, which in Spanish is rightmost. The Focus Prominence Rule (FPR), however, requires that focus receive main stress. When the focus is not rightmost, these rules clash: the NSR picks the rightmost word to stress, while the FPR picks the focused constituent. This conflict is resolved with what Zubizarreta terms *p(rosodically motivated)-movement*, or the scrambling of non-focal material over the focus, as in (7), so that the focus ends up in rightmost position, where it can receive stress in accordance with the NSR and the FPR.

Zubizarreta's proposal successfully addresses the fact that Spanish can employ syntactic movement along with the fact that focus needs stress, elegantly using one fact to explain the other, an insight that has been extended under other formalisms for Spanish (Büring and Gutiérrez-Bravo 2001) and other languages (Samek-Lodovici 2001; Szendrői 2003). However, as we will note later, this proposal cannot account for all the facts in (1), because it fails to explain – or, in fact, allow for – in-situ realizations.

We detail the derivations of focus movement for the sake of making concrete how this phenomenon has been analyzed in the syntax literature, yet we remain agnostic with respect to these two proposals because neither allows for in-situ stress.[3]

3.2 Experimental evidence to date

While the previous syntactic proposals have been formulated using judgements provided from the authors, focus has increasingly been investigated using more formal experimental methods which recruit larger numbers of informants. As we will see, these studies support a view in which syntactic movement to final position is *not* the preferred strategy (*contra* Zubizarreta 1998). However, other investigations also provide evidence that movement is possible. We review this evidence below.

3.3 A variety of focus-marking strategies

Research focusing on Spanish focus across different tasks shows that Spanish speakers employ numerous strategies to mark focus. For instance, researchers employing judgment tasks have found that participants rate both in-situ focus and focus-final word

[3] However, see Gallego (2013) for a compelling case in favor or Ordóñez's analysis for Spanish (an analysis based on micro-parametric differences).

orders equally highly on Likert or other n-point scales or choose them equally often on forced-choice or preference tasks. Researchers examining subject focus with SV/VS alternations (intransitive verbs) show evidence that participants choose both word-order strategies at similar rates (or assign comparable ratings) (Alonso-Ovalle et al. 2002; Domínguez 2013; Domínguez and Arche 2008, 2014). Other researchers who have examined focus in transitive sentences have reached similar conclusions. Muntendam (2009, 2013) found that speakers accepted SVO order for all focus types, including subject focus. Her participants also accepted word orders at high rates for each type of focus, again highlighting the use of multiple focus-marking strategies. Gupton (2017) similarly found that, although subject-final orders were preferred for subject focus on a forced-choice task, participants rated 40% of subject-initial and subject-final orders as equally acceptable. Researchers investigating direct object focus echo these findings: in rating tasks targeting object focus, speakers of Mexican Spanish rated both VOPP and VPPO equally high (Hoot 2012, 2016; Leal Méndez and Slabakova 2011). Comparably, using a forced-choice task, Heidinger (2015) found that Peninsular Spanish speakers accepted both final and non-final orders for focus on constituents within VP, including the direct object.

Production tasks also show that Spanish speakers utilize multiple strategies for marking focus. Investigating intransitive verbs using a written production task, Hertel (2003) found that native speakers produced SV order roughly 2/3 of the time (over VS) for narrow subject focus for both unaccusative and unergative verbs, while Roggia (2011) found the opposite proportions (2/3 VS and 1/3 SV) for unaccusative verbs and a nearly equal distribution between the two word-order options for unergative verbs. Other

production tasks have also shown significant variability. Although the specific percentages of each structure vary per study, Spanish speakers use various strategies, including in-situ focus, clefts, movement, and other constructions (Feldhausen and Vanrell 2014, 2015; Gabriel 2010; Gabriel, Feldhausen and Pešková 2009; Heidinger 2015; Kim 2016; Leal, Destruel, and Hoot 2018a; Sánchez-Alvarado forthcoming; Vanrell and Fernández Soriano 2013). This finding holds with elicitation tasks in controlled laboratory settings, but also for naturalistic conversations. Ocampo (1995, 2003, 2005) documented a number of different strategies in recorded conversations with Rioplatense speakers.

Variability also characterizes the prosodic realization of focus. Production studies show that no consistent single pitch accent corresponds to focus, and that multiple intonation contours can be used for different focus types (Kim 2016; Kim and Avelino 2003; Muntendam and Torreira 2016).

3.4 In-situ focus is possible in Spanish

Experimental studies on Spanish focus have shown that Spanish speakers judge in-situ focus to be at least as acceptable as (or more acceptable than) focus-related movement, especially for subject focus. For transitive verbs, Hoot (2012, 2016) found that in-situ focus was rated significantly higher than sentence-final orders (subject focus), while Muntendam's informants (2009, 2013) accepted SVO in subject focus contexts 100% of the time. And although Gupton (2017) found that subject-final orders were slightly preferred (rating and forced-choice tasks), in-situ focus was nonetheless rated highly and chosen as often as subject-final focus. The same is true with in-situ object

focus in judgment studies, with SVOPP being rated as highly as focus-final orders (Hoot 2012, 2016).

Production studies concur. Using an oral elicitation task with subject-focus questions (i.e., *Who bought a newspaper?*), Gabriel (2010) found that speakers of two different Argentine Spanish varieties produced SVO order with stress on the subject 95% of the time. Leal, Destruel, and Hoot (2018a, 2018b) found the same overwhelming preference for in-situ, pre-verbal focus in the production of Mexican and Chilean speakers. Other studies, including written and oral elicitation tasks and naturalistic elicitation, have shown that speakers can use canonical word order for multiple focus types and frequently produce in-situ focus (Gabriel, Feldhausen, and Pešková 2009; Hertel 2003; Kim 2016; Labastía 2006; Ocampo 1995, 2003; Vanrell and Fernández Soriano 2013). Other researchers have also shown evidence that non-final focus can be stressed in situ (Kim and Avelino 2003; Labastía 2006; Mendoza, Gutiérrez-Bravo and Martín Butragueño 2016; Sánchez-Alvarado forthcoming), and that that stress shift may be optional (Labastía 2006; Leal, Destruel, and Hoot 2018b).

3.5 Movement is possible, even if it is not preferred

A third main finding from this literature is that Spanish speakers (unlike English speakers) can produce and accept movement as a focus-realization strategy. Researchers concentrating on focus-driven SV/VS orders with intransitive verbs have found that native Spanish speakers strongly prefer VS for subject focus (Lozano 2006a, 2006b; de Prada Pérez 2010; Roggia 2011). Furthermore, comparable SV/VS ratings constitute evidence that both SV and VS are available (Domínguez and Arche 2008). In some cases, even when both orders were available, the percentage of VS was larger under narrow

subject focus than in broad focus contexts (Alonso-Ovalle et al. 2002), showing that focusing the subject can increase the probability of focus-final orders. With transitive verbs, the best judgment evidence for focused subjects moving to final position comes when SVO is removed as an option. Leal Méndez and Slabakova (2011) found that when SVO was excluded (and only VSO and VOS were compared), VOS was preferred.

Spanish speakers also prefer subject-final orders when the object is either left dislocated (Domínguez 2013; Domínguez and Arche 2014) or cliticized (Gupton 2017). Muntendam (2009, 2013) also found higher rates of acceptance of subject-final orders (~85%) for subject focus when the object was cliticized and left dislocated than when the object was a full DP (although she also found that Andean Spanish speakers accepted VOS 70% of the time). Additionally, movement appears to be at least as acceptable as in-situ marking for object focus (Hoot 2012, 2016), and in some cases either preferred or rated higher (Gómez Soler and Pascual y Cabo 2018; Heidinger 2015). In sum, judgment data shows movement is an available strategy, even if not preferred. Interestingly, other factors (such as the presence of other arguments) appear to modulate movement.

In production tasks, speakers mark focus via movement less frequently than with other strategies (Feldhausen and Vanrell 2014, 2015; Gabriel 2010; Leal, Destruel, and Hoot 2018a, 2018b; Vanrell and Fernández Soriano 2013). In elicitation tasks, as with judgments, movement is more frequently used with objects than subjects (Feldhausen and Vanrell 2014, 2015; Leal, Destruel, and Hoot 2018a, 2018b), although a cliticized object makes movement for focused subjects more frequent (Gabriel 2010). Two production studies (one written, one oral) show that subject-final orders were produced more often under subject focus than broad focus for unergative verbs (whose unmarked broad focus

word order is SV). However, for unaccusative verbs (expected to be VS in broad focus) focus had no effect on subject placement (Hertel 2003; Roggia 2011).

3.6 Additional factors intervening in focus marking

Research investigating additional factors shows: (i) some evidence of asymmetries between subject and object focus marking, and (ii) that focus realization is modulated by which constituents are present in the sentence. With regard to (i), judgment data (subject and object focus) shows asymmetries, revealing that subjects may conform to special restrictions. For example, Hoot (2012, 2016) found a strong preference for the canonical pre-verbal position for subjects in focus, while objects in focus could be either in situ or moved. Biezma (2014) also argues that because Spanish is a pro-drop language, any overt pre-verbal subject is interpreted as focused. Her evidence comes from testing the acceptability of preverbal subjects as the antecedents to two different types of ellipsis, under the assumption that ellipsis antecedents are necessarily focused.

The special status of subjects is also substantiated in oral production data. Feldhausen and Vanrell (2014, 2015) found that speakers overwhelmingly marked subject focus using clefts, while using focus-final movement for object focus more frequently. Similarly, Gabriel (2010) and Leal, Destruel, and Hoot (2018b, 2018b) found that subject focus was marked almost exclusively in situ, while object focus showed a wider range of realizations. This finding is attested crosslinguistically: focused subjects and objects are often treated differently in certain languages (Skopeteas and Fanselow 2010).

Additionally, as we have seen, the presence or absence of a full DP object affects subject focus marking (Domínguez 2013; Domínguez and Arche 2014; Gabriel 2010;

Gupton 2017; Muntendam 2009, 2013). However, we must also note that the presence of a clitic does not unequivocally bring about sentence-final focus: Kim (2016) found that Mexican Spanish speakers produced 80% of subject focus sentences with initial subjects despite object pronouns being present.

In summary: preference, rating, and production data shows that focus movement to final position is not required and that Spanish speakers employ multiple strategies for focus marking. Although focus-final orders are less utilized/preferred than canonical orders, movement is possible, with its availability being modulated by other syntactic factors. These findings contrast with work in the syntactic literature, which has centered on explaining focus-final orders almost exclusively.

4 The present study

We found a gap between the experimental findings on focus marking and the syntactic literature on the subject. As we have seen, nearly all the experimental data on focus in Spanish consists of judgment or production studies. Notably, data from real-time language processing – such as that provided by self-paced reading tasks, among other methods – is conspicuously absent, despite being ubiquitous in the study of many linguistic phenomena. As is well known, methodological choices have ramifications that should be examined, so this absence is noteworthy because processing data is typically thought to be less affected by metalinguistic knowledge, representing more implicit rather than explicit processes, in a continuum (Kaiser 2016). We address this absence here. At the same time, for comparability with previous work using judgments, we also conduct a forced-choice preference task.

Moreover, in order to isolate the effect of factors external to information structure, we designed the stimuli to exclude canonical SVO as an option (testing, instead, V-initial orders) and to investigate the effects of cliticization. Finally, in order to investigate dialect-related effects, we include speakers from two different Spanish varieties.

We address the following research questions, which we aim to answer with a contextualized forced-choice task (FCT) and a self-paced reading task (SPRT):

(8) Research questions

a. RQ1: In subject focus contexts, are focus-final word orders *preferred* and *processed faster* than non-final focus marking?

b. RQ2: In subject focus contexts, how does canonical word order and object cliticization affect how focus-final orders are judged?

c. RQ3: Are there any dialectal differences in how Spanish speakers judge and process subject focus?

5 Experiment 1: Forced-Choice Task

The first experiment, designed to address Research Question 1, consisted of a forced-choice task (FCT) recording participants' choices of the contextual felicity of different word orders.

5.1 Participants

We included two groups: monolingual speakers of Yucatecan Spanish tested in Merida, Mexico (n=42; 25 female; ages 18-39, M=21.5) and bilingual (Spanish/Catalan) native speakers of Catalonian Spanish tested in Barcelona, Spain (n=34; 27 female; ages 18-47, M=22.5). All participants were adults who were naïve to the purpose of the study.

They acquired Spanish in early childhood (before age 6) and were born, raised, and still resided in a country where Spanish was a main societal language. Participants completed at least secondary school; most had completed at least some university. Finally, all were either monolingual Spanish speakers (Merida) or were Spanish-dominant (Barcelona) according to the Bilingual Language Profile (BLP; Birdsong, Gertken and Amengual 2012). The BLP relies on self-reports of language use, history, and attitudes to calculate a numerical dominance score for each of the participant's languages. Based on this score, we classified participants by language dominance.

One difference between the groups is that Barcelona speakers were Spanish/Catalan bilinguals. Nonetheless, if we define 'native speaker' as someone who acquired a language as a first language in childhood under naturalistic circumstances, all were undoubtedly native speakers of Spanish, even if some could also be considered native Catalan speakers. As Rothman and Treffers-Daller (2014) note, the constructs 'native speaker' and 'monolingual' should not be conflated: bilinguals are native speakers too, although they may have more than one native language. No researcher would question whether speakers who grew up speaking Catalan in Catalonia, a bilingual society with two dominant societal languages, are native speakers or not, even though all Catalan speakers also speak Spanish. Because, however, it is possible that bilingualism contributes to variability in the language knowledge of this population, we restrict this group to only those who were Spanish- (rather than Catalan-) dominant based on the BLP.

5.2 Materials

The FCT tested two factors: *Word Order* (final vs. non-final focus) and *Clitic* presence (clitic pronoun vs. full DP object). We present the cells of the experiment design in Table 1. Within each Clitic condition, we constructed pairs of sentences that differed in their word order, and participants chose the most appropriate word order for the context.

Table 1: FCT Design

	Subject Non-Final	**Subject Final**
	VSO	VOS
Full DP Object	*Compró el pintor el carro.* bought the painter the car	*Compró el carro el pintor.* bought the car the painter
	$SCl_{itic}V$	$Cl_{itic}VS$
Object Clitic	*El pintor lo compró.* the painter it.ACC bought	*Lo compró el pintor.* it.ACC bought the painter

For the stimuli including full object DPs, non-final subjects were instantiated as VSO rather than SVO for two reasons: VSO avoids selecting SVO due to its status as the unmarked/canonical word order, and VSO, unlike SVO, is *not* compatible with subject focus (López 2009). Previous work (Leal Méndez and Slabakova 2011) suggests that the avoidance of VOS order found in experimental studies on Spanish focus could be partially attributed to task characteristics: experiments including SVO as an option may skew participants' judgments. It is well known that many factors affect judgements (Cowart 1997; Schütze and Sprouse 2013), so such biases are unsurprising.

Syntacticians have noted that VSO in Spanish is a viable word order to instantiate broad or out-of-the-blue focus, similar to SVO (e.g., Domínguez 2004b:74; Zubizarreta 1998:125). Equally importantly, researchers on focus have remarked that VSO *cannot* be used to mark the subject as focus; it is compatible with either broad or object focus

readings, but not subject focus readings (Domínguez 2004b; López 2009). SVO, on the other hand, is compatible with subject focus, broad focus, *and* object focus readings (see Section 3.4). By using VSO as our non-final subject order, we have an expected contrast between the two verb-initial word orders in terms of the contexts into which they felicitously fit because the alternative subject-final order (VOS) should unambiguously mark the subject as focal.

One potential problem with using V-initial orders, though, is the following: Gutiérrez-Bravo (2008) has argued that in Mexican Spanish VSO or VOS are only available if another constituent appears before the verb and are otherwise ungrammatical. In order to avoid this issue, sentences were embedded in a carrier phrase; target structures were introduced as subordinate clauses following a verb of perception or assertion (e.g., *Parece que* 'It seems that,' *Creo que* 'I believe that,'), rather than at the beginning of the sentence.

For the stimuli with the clitic pronoun, the choices were SV or VS, with the pronoun cliticized to the finite verb (the only available position in Spanish). Because these were the only two possible word orders, one of these conditions necessarily included canonical pre-verbal subjects, which appeared in contrast to sentence-final subjects.

We distributed sixteen lexicalizations into two lists such that participants judged eight trials for each the Clitic and Full DP conditions (i.e., each participant either saw the full-DP version or the clitic version of each lexicalization but not both).[4] Every trial

[4] Due to a technical error, for one of the lexicalizations, only the version with the clitic was included, so every participant saw that item, and no one saw the version of that lexicalization with the full DP. That means that half the participants saw nine clitic items and seven full DP items, while the other half saw eight and eight. This error did not result in anyone seeing the same lexicalization twice.

included a visual context (picture) followed by a question. Questions biased responses for subject focus, e.g., *¿Quién compró el carro?* 'Who bought the car?'.

The FCT, a preference task, required participants to pick the word order that sounded most natural in the context. Word-order choices were randomized per question; trial order randomized per participant. Figure 1 shows a trial. In addition to the 16 critical trials, each list contained 32 filler trials for the Barcelona group and 48 filler trials for the Merida group.[5,6]

Figure 1: Sample FCT Trial (Screenshot)

[5] The additional filler items for the Merida group were added to investigate cross-linguistic influence from Yucatec Maya, because a group of Yucatec Maya/Spanish bilinguals, whose results we do not report on here, were also tested during that phase of the experiment.
[6] Fillers included grammatical sentences testing contextual felicity of a different type of focus and grammatical sentences testing the semantics of aspect.

We chose a forced-choice task over the more common judgment tasks because forced-choice tasks are better able to capture small acceptability differences (Schütze and Sprouse 2013), and previous work has shown that judgments of information-structural phenomena are subtle (Hoot 2016, 2017, 2019; de Prada Pérez and Pascual y Cabo 2012) perhaps because participants generally avoid giving low ratings to grammatical sentences (see Hoot 2016, 2017, 2019). Sprouse and Almeida (2017) found that forced-choice tasks are more powerful at detecting differences between conditions than competing tasks, especially for smaller effect sizes, and Schütze and Sprouse (2013:32) argue that if an experiment seeks to "ascertain the existence of a predicted acceptability contrast" these tasks are "the optimal choice." This is precisely our situation: we are interested in theoretically predicted qualitative differences between the conditions whose effect is relatively small. This task is the most appropriate because we are less interested in comparing the quantitative differences in acceptability across conditions, and we are also relatively uninterested in determining where a given sentence falls on an overall scale of acceptability.

Because numerous factors can affect word order, we controlled our stimuli for the following. First, subjects and objects contained the same number of syllables because relative phonological weight can affect argument pre- or post-posing, with heavier (longer) arguments tending to appear finally (Gómez Soler and Pascual y Cabo 2018; Heidinger 2015). Second, subjects and objects were always definite. For the sake of uniformity, all arguments were singular, and to avoid confusion about the role of each DP, subjects were always human (e.g., *la cantante* 'the singer') and objects were always inanimate (e.g., *el libro* 'the book'). Verbs were core transitive verbs in the preterit (e.g.,

compró ‘bought’). Finally, to control for frequency effects, all words (subjects, objects, and verbs) were taken from the 5,000 most common Spanish words (Davies 2006). The full stimulus set is available via the IRIS repository (www.iris-database.org).

5.3 Procedure

Participants completed all tasks, including the FCT, on a 14-inch-screen laptop computer during a single session generally lasting around an hour. Sessions were conducted in locations convenient to participants, including a university classroom in Barcelona and a variety of locations in Merida, Mexico. Typically, participants completed the FCT after the SPRT but before the background questionnaire; however, for scheduling reasons, some participants completed the tasks in the opposite order. We present the details of the SPRT in Section 6; the BLP is discussed in Section 5.

The FCT was delivered via Qualtrics and lasted around 15 minutes. Instructions (in Spanish) included two practice items (participants were asked to choose between two sentences using unrelated, but grammatical, structures) to familiarize participants with the task. No feedback was provided. Subsequently, the Barcelona group judged 48 items (16 target, 32 fillers) and the Merida group judged 64 items (16 target, 48 fillers).[7] Items were randomized per participant.

[7] As described in Section 5, the Merida group judged additional items because a group of Yucatec Maya/Spanish bilinguals was also tested; the additional items were designed to test for cross-linguistic influence.

5.4 Results

Because participants were required to choose one option over another, we present percentages per choice in

Table *2* and Figure 2. Table 2 presents raw numbers per condition, as well as the estimated marginal means of the statistical model (which is why percentages do not exactly match raw numbers). In Figure 2, error bars represent the 95% confidence interval of the estimate.

Table 2: Mean counts and percentages of selected word orders by type and group for subject focus

	Object	Word Order	Raw Count	% Chosen
Full DP	Merida Group	V<u>S</u>O	114	35.7%
		VO<u>S</u>	199	64.3%
	Barcelona Group	V<u>S</u>O	74	27.0%
		VO<u>S</u>	182	73.0%
Clitic Pronoun	Merida Group	<u>S</u>clV	220	62.1%
		clV<u>S</u>	139	37.9%
	Barcelona Group	<u>S</u>clV	69	22.3%
		clV<u>S</u>	219	77.7%

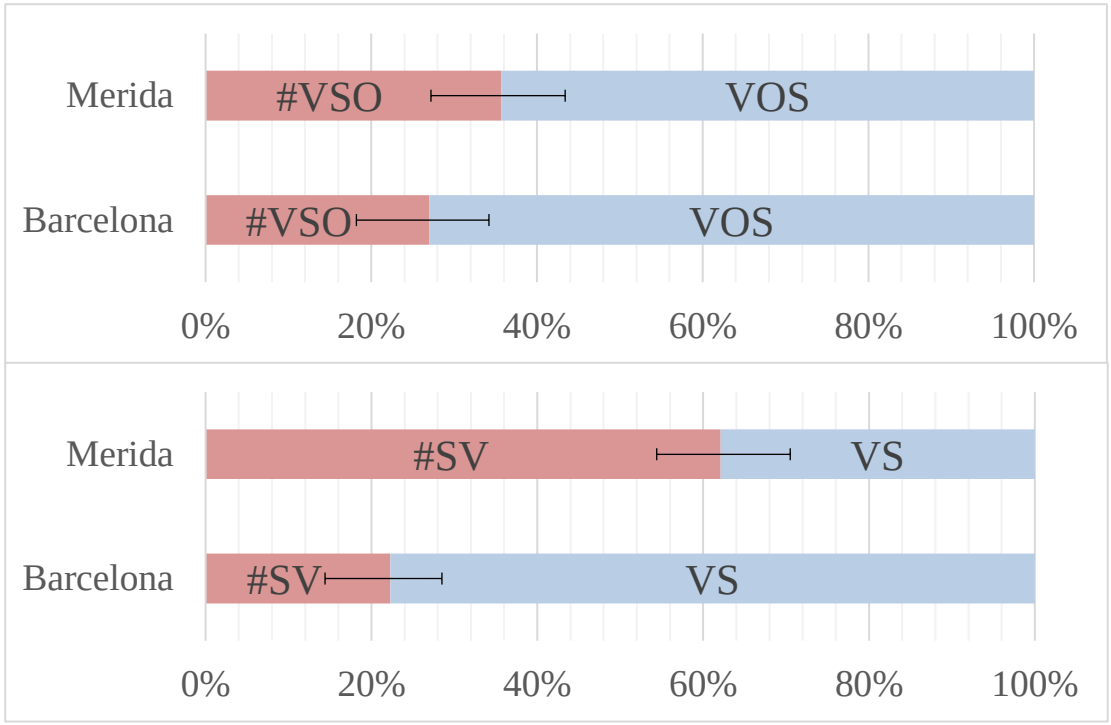


Figure 2: Mean percentages of word-order choices by clitic-presence and group

To analyze this binary dependent variable, we used a binomial mixed-effects logistic regression. *Group* (Barcelona vs. Merida), *Clitic* (full DP object vs. clitic), and their interaction were included as fixed effects so that we could determine the existence of group differences and the likelihood of subject-final orders when the object was cliticized. We modeled repeated measures by including a random intercept and slope (over Clitic) by subject; we modeled by-item variation by including a random intercept by item. The outcome variable for the model was subject-final order choice.

We found that Group ($F(1,1212) = 26.4$, $p < .001$) and Clitic ($F(1,1212) = 6.5$, $p = .011$) were significant predictors; most importantly, however, the Group*Clitic interaction ($F(1,1212) = 17.1$, $p < .001$) was significant. Pairwise comparisons with

Bonferroni corrections for multiple comparisons showed that the Mexican group was significantly more likely to choose focus-final orders in the full DP object condition than when the object was a clitic ($p < .001$), while the Barcelona group did not exhibit a difference in preference between when objects where full DPs vs. clitics ($p = .311$). Pairwise comparisons also showed that the Merida group did not differ from the Barcelona group in the full DP condition ($p = .126$), although the two groups did differ in the clitic condition ($p < .001$). The results of the interaction drove the overall main effects for Group and Clitic, because the Mexico group preferred subject-initial orders in the clitic condition.

In order to determine whether these results represented real preferences rather than guessing, we calculated the 95% confidence interval for the estimated marginal mean probability of choosing focus-final orders for each group in each condition. We then compared this range to 0.5, which would represent an equal chance. It would, hypothetically, be possible to find a robust statistical difference between groups if only one group was truly making a distinction while the other performed at chance. We can observe in Figure 2, however, that no confidence intervals do not cross 0.5, indicating that the estimated marginal mean probabilities are significantly different from chance, meaning that we can be reasonably confident that these results represent real preferences.

Descriptively, we see that the Barcelona group prefers focus-final word orders for both the full DP and clitic conditions. On the other hand, the Merida group prefers focus-final only in the full DP condition, preferring subject-initial orders in the clitic condition, contrary to expectation. Additionally, although at first glance it seems that the Merida group displays a less robust preference for focus-final than the Barcelona group in the full

DP condition, this difference did not reach significance in pairwise comparisons (p = .126).

5.5 Discussion

We can summarize the results of the FCT as follows. First, we find experimental evidence in favor of the traditional syntactic view of Spanish focus being realized via movement (e.g., Ordóñez 1998; Zubizarreta 1998) albeit with some qualifications because canonical SVO was excluded. As mentioned in Section 3, previous investigations show that focus-related movement is available but often not preferred, with many studies finding participants prefer SVO for subject focus over VOS. However, when comparing two verb-initial word orders, our groups preferred the word order that aligned the focus rightmost over the one that did not.

Second, the Barcelona group accepted sentence-final orders (over the canonical) more frequently when a clitic was present, as predicted. This finding agrees with previous work including clitic objects (Gabriel 2010; Gupton 2017), and work showing preferences for VS with intransitive verbs (Lozano 2006a, 2006b; de Prada Pérez 2010). This finding is noteworthy because researchers investigating focus have shown that the preverbal position is available for focus marking in Peninsular Spanish, as in other varieties (Alonso-Ovalle et al. 2002; Domínguez 2013; Domínguez and Arche 2008, 2014; Sánchez-Alvarado forthcoming; Vanrell and Fernández Soriano 2013).

Third, we find evidence of dialect differences when a clitic is present. Such differences have been widely alluded to in the literature but rarely investigated systematically. Of particular note is Mexican speakers' preference for subject-initial order in the clitic condition. This finding echoes work showing a preference for realizing

subject focus pre-verbally in Mexican Spanish (Hoot 2012, 2016; Kim 2016; Leal, Destruel, and Hoot 2018a).

An anonymous reviewer wonders whether the dialect differences could be attributed to traces of language contact, along the lines of the contact-induced variation in features of clitic doubling suggested by Zdrojewski and Sánchez (2014). Indeed, the Merida group's preference for SV order in the Clitic condition could plausibly be related to contact with Yucatec Maya, a language in which the primary focalization strategy is fronting (Verhoeven and Skopeteas 2015). That we observe a difference only in the Clitic condition, and not in the Full DP condition, is compatible with this view, because neither of the Full DP sentences presented the focus in initial position. Moreover, the Barcelona group's preference for subject-final focus in both conditions is also consistent with the effects of contact with Catalan, given that Catalan has similar focus-final constructions for subject focus. Ultimately, although language contact could play a role in explaining our results, a fuller exploration of contact effects must be left to future research designed to investigate those questions directly.

6 Experiment 2: SPRT

The self-paced reading task (SPRT) measured participants' processing of the contextual felicity of verb-initial word orders.

6.1 Participants

The same participants took part in both tasks (see Section 5).

6.2 Materials

The SPRT had a 2x2 design, with *Word Order* (VSO vs. VOS) and *Focus Type* (subject vs. object) as factors. We illustrate the experiment design in Table 3, where only the five-word critical region is represented.

Table 3: SPRT Design

	VSO	**VOS**
Subject Focus	Who distracted the worker? *Distrajo el aprendiz al*[8] *obrero.* distracted the apprentice DOM.the worker Prediction: #	Who distracted the worker? *Distrajo al obrero el aprendiz.* distracted DOM.the worker the apprentice Prediction: ✓
Object Focus	Who did the apprentice distract? *Distrajo el aprendiz al obrero.* distracted the apprentice DOM.the worker Prediction: ✓	Who did the apprentice distract? *Distrajo al obrero el aprendiz.* distracted DOM.the worker the apprentice Prediction: #

As with the FCT, we avoided SVO to avoid potential biases towards the default (see Section 5.2), and so that the critical region began with a verb and differed from the other conditions only in the relative order of the subject and object (VSO vs. VOS). As before, critical sentences were not verb-initial (the critical region was embedded in a carrier phrase). We compared VSO, predicted to be felicitous in object focus contexts – and thus processed more quickly – against VOS, predicted to be felicitous in subject focus contexts.

The discourse context for either subject or object focus consisted of a one-sentence setup story followed by *wh*-question pertaining to either the subject (9) or the object (10).

[8] In Spanish, [+specific] and [+animate] DP objects are obligatorily marked with the preposition *a*, typically called Differential Object Marking. This marking indicates to speakers which DP is accusative. When preceding the definite article *el* 'the,' the contraction *al* is used.

(9) Subject Focus Context

Hubo un accidente en la fábrica porque alguien distrajo al obrero. ¿Sabes quién lo distrajo?

'There was an accident at the factory because someone distracted the worker. Do you know who distracted him?'

(10) Object Focus Context

Hubo un accidente en la fábrica porque el aprendiz distrajo a alguien. ¿Sabes a quién distrajo?

'There was an accident at the factory because the apprentice distracted someone. Do you know whom he distracted?'

Subjects and objects were definite, masculine, and human (e.g., *el árbitro* 'the referee'). They were matched for length; all were three syllables. Verbs were always transitive, in the third-person preterit, and three syllables long. Each sentence was also controlled for overall visual length; critical regions were between 25 and 32 characters long. Given that the lexical items had to meet all the previous requirements, we were not able to control for word frequency.

We conducted a norming task and a pilot to ensure the suitability of tokens. The norming task tested plausibility and reversibility. Fifty-four items were constructed, all of which had arguments selected as above. For norming, items had canonical SVO word order (to make it maximally unambiguous which argument was the subject and which the object). We created two versions of per token with the object and subject swapped (11b,

11c). Items were embedded in short contexts (11a) and distributed in two lists so that each list only contained one version. Twenty-six native speakers of Spanish judged the items for plausibility using a sliding scale from 0 (“totally impossible”) to 100 (“completely possible”).

(11) Plausibility and Reversibility Pre-test

a. *Durante su viaje a Paris*…

‘During his trip to Paris…’

b. …*el artista visitó al poeta*.

‘…the artist visited the poet.’

c. …*el poeta visitó al artista*.

‘…the poet visited the artist.’

With this test, we established a baseline threshold of acceptability: any item for which one of the pairs had a mean score below the midpoint of the scale was discarded. Then, we examined the remaining items for reversibility and chose the 32 items whose mean ratings for the two versions were closest. The norming task ensured that the items were controlled in that the role of each participant in the sentence could not be predicted from the semantic content of the verb or its arguments, following Hopp (2009), and thus avoid effects due to lexical semantics or predictability. For instance, in examples (9) and (10), neither the apprentice nor the worker is *a priori* more likely to have distracted someone than the other. In contrast, in a sentence pair like *The teacher taught the student* vs. *The student taught the teacher*, one is substantially more plausible than the other.

After selecting the items through the norming task, we then developed the experimental items, creating VSO/VOS versions for each. We also created contexts for 32 token sets so that each participant could see 8 items per cell of the design.

To pilot the data, we asked native Spanish speakers (*n*=9) for feedback on the comprehensibility and suitability of the sentences, including the specific lexical items used. Following this feedback, several minor changes in wording were made to contexts. Overall, pilot participants did not note any problems with understanding the words used in the experiment.

Finally, each item was embedded in a carrier phrase. As in the FCT, critical items were introduced by verbs of perception or assertion so that the sentences were not verb-initial. To avoid interference from wrap-up effects, the critical region was followed by an additional clause adjoined to and referencing the entire sentence (not a part of any constituent; e.g., *aunque me sorprende* 'although it surprises me,' *pero puedo equivocarme* 'but I might be wrong.').

6.3 Procedure

This task was run in Linger (Rohde 2003) and began with instructions written in Spanish followed by five practice items (unrelated to the target items) to familiarize participants with the experiment. Participant received feedback on the comprehension questions (see below) following the practice items. Each participant was randomly assigned to one of eight lists, each of which consisted of 96 contextualized sentences (32 target sentences, 64 fillers). Items were presented in three blocks of 32 sentences each; participants could take a break between blocks. Item order was randomized per participant.

This task used a moving-window paradigm; stimuli were presented on a computer using a word-by-word display. By pressing a key (space bar), participants were able to set the pace for their own reading (Just, Carpenter, and Woolley 1982). Each trial proceeded thus: First, participants read the static context, after which they were presented with a target sentence where all characters (except spaces) were masked by dashes (-). To read the sentence, participants were asked to press the space bar, after which they were able to see each word non-cumulatively. Participants could not go back to re-read any words. The software recorded, in milliseconds, the duration between space-bar presses. Participants completed this task under the supervision of one of the authors and were encouraged to ask questions. The SPRT took around 45 minutes.

Each item (filler and experimental) was followed by a true/false comprehension question. Half of these targeted the context and half targeted the subsequent sentence; half were true and half were false. One participant who scored less than 80% on these comprehension questions was excluded from the study (not included in count above).

6.4 Results

We log-transformed reading times (RTs) to inspect for outliers (those with overall RTs greater than 2.5 standard deviations), but no participants were excluded for this reason. We trimmed raw RTs very conservatively, with a maximum threshold of 10,000 milliseconds and a minimum of 100. Then, we length-adjusted the RTs (following the length-adjustment procedure in Fine et al. 2013). We performed all analyses on these residual (length-adjusted) RTs. Faster RTs are thus smaller or negative numbers because observed RT is close to or below expectations; slower RTs are larger numbers, because the residual is above the expected RT.

A linear mixed model was fit to the data, with *Context* (subject vs. object focus), *Order* (VSO vs. VOS), and *Group* (Merida, Barcelona) as fixed effects and Item and Participant as random effects. The random-effects specification was determined by comparing measures of goodness of fit, following the procedure suggested by Eddington (2015). The resulting random-effects structure included a random intercept for Item and Subject, as well as a random slope by Subject over the interaction of Context*Order. In order to compare conditions directly, post hoc pairwise comparisons were conducted, with the Bonferroni correction for multiple comparisons.

We present the results of the SPRT (critical region) in Figure 3.

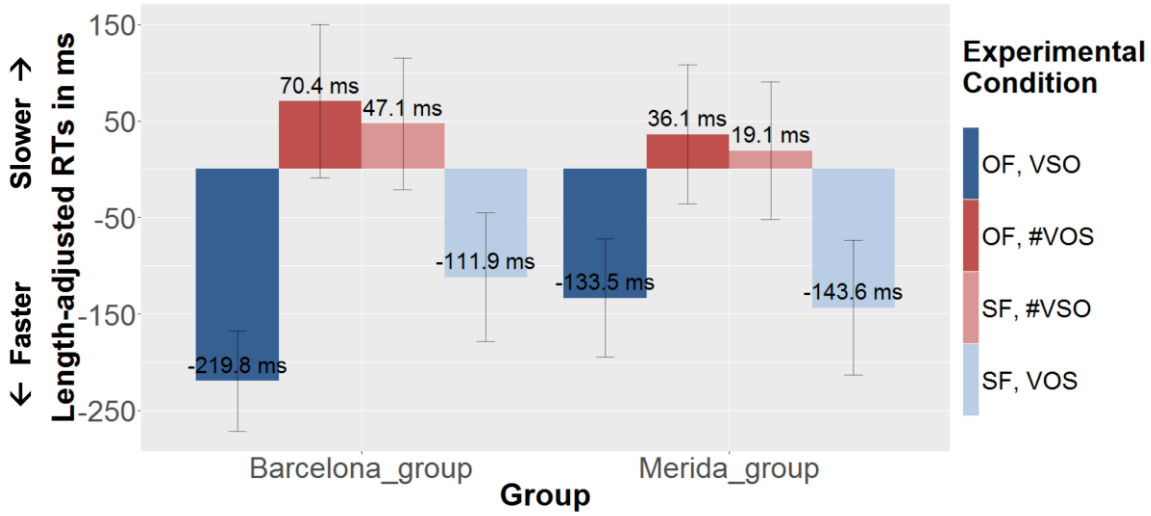


Figure 3: Residual RTs by condition and group (blue columns represent felicitous orders, red infelicitous; darker colors constitute object focus contexts, lighter subject focus contexts)

The linear mixed-effects model revealed a significant interaction of Context*Order, with no other significant main effects or interactions. There was no interaction between group and any other variable, indicating that the groups did not differ in their RTs, nor was there a significant main effect of order, indicating that no word order was always read more slowly than another. Instead, the interaction suggests that word order RTs depended on the context. Visual inspection of the data indicates the direction of that relationship: word orders in which the contextually focused constituent appears in sentence-final position were read faster than those in which it did not, as expected. Pairwise comparisons confirmed this result. Overall, both groups read VSO faster than VOS in Object Focus contexts (p = .001) while VOS was read faster than VSO in Subject focus contexts (p = .019).

6.5 Discussion

As with the FCT, the results of the SPRT support the traditional syntactic literature on Spanish focus, which emphasizes the relationship between focus and final position. In both object and subject focus contexts, participants read sentences with final focus faster than those with non-final focus. Our results show also that participants do attend to information structure during online processing, as shown in previous studies (Kaiser and Trueswell 2004, Slioussar 2011, Weskott et al. 2011). The RTs were not contingent on word order alone but rather on the interaction between word order and context. This finding is relevant because the processing of Spanish focus has not previously been investigated. Finally, unlike what we found in the FCT, we found no dialect effects. This finding is not contradictory because the SPRT did not include a condition in which the object was replaced by a clitic, which was the only case in which

the dialect groups differed in the previous task. When it comes to VOS vs. VSO, both groups behaved similarly in both tasks, showing a preference for VOS with subject focus.

7 General discussion

Our first research question asked whether, in subject focus contexts, subject-final orders are processed faster and/or preferred (when we remove potential sources of bias by removing SVO as an option or by cliticizing the object). The judgment data elicited from the FCT suggests that for both groups, subject-final orders are preferred when SVO is not an option and the object is a full DP. This finding runs counter to previous work that has found that VOS orders are judged lower for subject focus (Hoot 2016) and rarely produced in such contexts (Gabriel 2010; Leal, Destruel, and Hoot 2018a). Instead, it echoes work showing evidence for syntactic movement to mark focus in Spanish (e.g., Leal Méndez and Slabakova 2011; Lozano 2006a, 2006b). In our view, the evidence for movement is tied to task design; specifically, to our choice to avoid SVO as an option. Moreover, this data fits well with a view of Spanish focus that includes a variety of focus-marking strategies, including marking focus sentence-finally.

In terms of the processing of subject focus, the SPRT data similarly showed that word orders in which the focus appears sentence-finally are processed faster by both groups. This data provides support for studies showing evidence of movement as a focus-marking strategy in Spanish (e.g., Leal Méndez and Slabakova 2011; Lozano 2006a, 2006b). It is also noteworthy that the SPRT effects are quite robust, indicating that contextual felicity can be processed by speakers in real time – a result that echoes work in information structure in other languages (Kaiser and Trueswell 2004, Slioussar 2011, Weskott et al. 2011).

In summary, both experiments provide new evidence showing that Spanish focus can be expressed via movement in certain contexts, especially when canonical options are not available. Nonetheless, because previous experiments have found robust evidence for in-situ focus, the ultimate picture that emerges is one where Spanish speakers employ multiple strategies.

Finally, we observe some dialect differences when objects are cliticized. The data from the FCT shows that when clitics are present, Barcelona speakers prefer the subject-final order (clVS), while the Merida speakers prefer the subject-initial order (SclV). This finding aligns with Gupton's (2017) findings for Galician Spanish. Subject-initial orders are possible in Peninsular Spanish (Alonso-Ovalle et al. 2002; Domínguez and Arche 2014; Gupton 2017; Vanrell and Fernández Soriano 2013), so the fact that these speakers prefer the subject-final option (despite the other option being the canonical) suggests that removing the intervening object increases the acceptability of subject postposing. The Merida group does not show this expected clitic effect, however, a finding that is in line with previous work with Mexican Spanish speakers, who have shown a preference for in-situ focus realization (Hoot 2012, 2016).

One of the main contributions of our study is methodological, since we provide processing data that can be compared to judgment data. Let us consider the place of real-time processing data in the study of information structure, especially as it relates to the facts in (1). As mentioned in Section 4, processing data is believed to be less influenced by metalinguistic knowledge, while such knowledge has been claimed to constitute a potential source of noise in judgement data. In our case, it is especially noteworthy that

the results from both tasks largely coincide, buttressing the case for sentence-final focus marking in Spanish under certain circumstances.

Having the facts in (1) in mind, our data can be used to propose the addition of a fourth fact to be accounted for under a comprehensive theory of Spanish focus. Namely, a theory of focus should account for the fact that even though multiple strategies may be used to mark focus, mismatches in expectations about a sentence's information structure can disrupt processing when *marked* word-order forms are involved. Because the SPRT did not include SVO as an option, further research is needed to determine whether subject marking with SVO does, in fact, produce processing delays. Nonetheless, this fact (processing delays with information structure mismatches when unmarked orders are involved) fits in well with views wherein information structure is used in real time by both speakers and hearers in order to facilitate language processing (Cowles 2003). Although this fact is not new to the literature of information structure and processing, we provide evidence from Spanish that can be used for theory-building purposes.

A second, related, issue involves the role of canonical word order status plays in experimental designs. As discussed in Section 3, previous research has shown that participants overwhelmingly accept and produce canonical SVO order to realize subject focus in Spanish. However, we find here that when SVO is removed as an option, evidence for movement strategies emerges. Why might that be the case?

There are at least two possible explanations for the preponderance of canonical word order in previous work (e.g., Gabriel 2010, Leal, Destruel, and Hoot, 2018a). The first is that it is related to the task. We contend that this view is plausible but ultimately unlikely to be the explanation. The second possibility is that the relationship between

canonical order and contextual felicity is not the one assumed by most theorists. We discuss these explanations in turn.

Judgment data can be modulated by a number of extra-linguistic factors, such as frequency, plausibility, and processability, among others (Cowart 1997; Schütze and Sprouse 2013). Consequently, constructing judgment experiments such that these extra-linguistic effects do not have an outsized influence is quite challenging. In this context, it would be unsurprising to find that unmarked word orders receive higher ratings largely because of their canonical status. Indeed, previous researchers have noted that, when stimuli are clearly grammatical, felicity violations reduce acceptability only slightly (Gómez Soler and Pascual y Cabo 2016; Hoot 2016, 2019). The fact that grammatical but contextually infelicitous sentences receive high ratings on judgement tasks may stem from the task itself: although the felicity violation is a real effect, it may be obscured by other confounding variables. Carefully constructed judgment experiments, however, should ease the effect of these possible confounds, just like any other source of noise.[9]

The methodological setup of production tasks might also inherently bias toward SVO. Cowles (2012) notes that language production data is influenced by factors such as lexical frequency or conceptual availability, such that a sentence's final encoding is not determined by information-structure alone. Furthermore, many production tasks (e.g., Kim 2016; Leal, Destruel, and Hoot 2018a) can induce priming or persistence effects. When researchers use questions to elicit focus in production, constituents must necessarily be ordered, generally in the unmarked order. These context questions may

[9] For instance, researchers can counterbalance items for frequency or use factorial designs to compare across conditions with minimally different structures, and there is substantial evidence that speakers can make consistent and robust judgments despite the influence of confounding factors like frequency or canonicity (see Cowart 1997; Schütze & Sprouse 2013 for discussion).

influence participants by priming canonical word orders. Using unmarked orders might not be a preferable solution, however. Researchers have found evidence that very *frequent* structures produce weaker priming than *infrequent* constructions, because the latter cause greater surprisal (Levy 2008). For example, Rosemeyer and Schwenter (2017) conducted a corpus study of the past subjunctive in Spanish, which has two forms, one frequent and one infrequent. They found that the presence of the frequent form in the previous context was indistinguishable from no priming at all, while the presence of the infrequent form strongly primed more use of the infrequent form. If we extend this logic to the present case, it seems unlikely that priming the canonical order via questions would produce a strong effect compared to any other elicitation method, since the canonical (=frequent) order would not produce very strong priming compared to what more marked word orders would elicit.

In our own study, could the prevalence of in-situ focus with sentences including clitics be due to the task? We do not believe this is the case because we do not evince consistent task effects across participants (i.e., the bias should operate in the same direction for all). Our results showed that the groups differ in the one case where pre-verbal unmarked subject position was available. If the reason why participants choose unmarked word orders is related to the task alone, it should not affect only one of the two groups (yet only Mexican speakers evinced this effect).

Nevertheless, the question of why SVO trumps other word orders in previous research remains and should be addressed. Researchers (e.g., Brunetti 2009) have argued that canonical word orders, by virtue of being the unmarked option, are always felicitous in any discourse context, which could explain the pervasiveness of SVO in Spanish.

Under this view, the relationship between discourse context and word order is one in which only *marked* word orders are restricted to particular discourse contexts, while *unmarked* word orders may realize any focus structure. Further evidence comes from Hopp (2009), who reported that native German speakers accepted canonical SOV order nearly 100% of the time across all discourse contexts, even those that also allow non-canonical OSV order, noting that, in general, canonical word order cannot "be overridden by [information-structural] context" (Hopp 2009:475, fn. 4). The same appears to hold true of Spanish: Muntendam (2013) reports nearly unanimous acceptance of SVO in all the discourse contexts under study.

Additionally, canonical orders can be processed faster whereas non-canonical orders may incur a processing cost (Hopp 2009, Weskott et al. 2011). For example, Hopp's German natives read canonical SOV faster in all contexts. In another study on German word order in embedded clauses, Bader and Meng (1999) used a speeded grammaticality task with word-by-word presentation and found that speakers had more difficulty processing sentences with non-canonical word orders. Furthermore, those non-canonical orders that did not conform to information structural expectations were the most difficult of all, a finding that the authors argue is suggestive of a system where revisions due to information structure (focus, in this case) are additional (and subsequent) to syntactic revision processes (e.g., introduction of filler-gap dependencies).

These results run counter to syntactic analyses of focus (whether in Spanish, English, or other languages) that assume a connection between focus and word order that depends on the idea that canonical word orders cannot be felicitously inserted into marked discourse contexts. Although many authors recognize the flexible or variable

nature of focus realization, syntactic accounts have historically relied on a correspondence between particular word orders and particular contexts.

In this landscape, what does our data contribute? Our tasks, which have removed SVO as a choice, reveal evidence for movement that could have been obscured otherwise. If participants in previous studies chose SVO for independent (perhaps extra-linguistic) reasons, our study allows us to observe an effect (i.e., VOS preferred over VSO) that was potentially eclipsed by other factors. On the other hand, if speakers' grammar specifies that VOS can only fit into subject focus contexts but allows SVO in any context, then previous studies may have included two acceptable word orders but analyzed the resulting choices assuming that the chosen/produced order was the only option. Removing SVO allows us to determine whether VOS *can* realize subject focus, even if SVO may be a better option.

8 Conclusions and future directions

We examined how native Spanish speakers of two different dialects judge and process information focus marking. We used two complementary methodologies, gathering forced-choice judgment data and sentence processing data – the first such evidence from Spanish – for the purposes of data triangulation. After summarizing three basic facts that a theory of Spanish focus should account for, our data led us to propose the addition of a fourth fact which also necessitates explanation: mismatches in information-structural expectations give rise to processing delays (when non-canonical orders are involved), a notion that fits in well with the idea that speakers and hearers exploit information structure to facilitate sentence processing (Cowles 2003).

Given our data sources, we also considered the effects of task design and the potential effects of dialect. We argued that task design did not appear to have an excessive influence on how our results fit in with previous investigations, although we noted that certain choices, like sidestepping canonical word orders, can unveil focus realizations (e.g., sentence-final focus) that, while not frequently used, are present in the speakers' grammars and, as such, should be considered for theory-building purposes.

One lingering question regards the processing of canonical word orders and how it compares to the processing of non-canonical ones. Because our task design abstained from including SVO, we cannot make any claims about the relative ease of processing of canonical orders vs. information-structurally compliant noncanonical word orders. Because the ultimate shape of a sentence is affected by a multitude of factors, one of which is information structure, studying the processing of canonical word orders is a necessary supplement to the data presented here.

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