

Object focus marking in Spanish: An investigation using three tasks

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Abstract

The literature on focus in Spanish contains a divide between theoretical claims and quantitative empirical evidence: While Spanish is often regarded as resorting to syntactic movement to mark focus, quantitative and/or experimental data often do not support this claim. Research focusing on *non-final objects within the VP* can provide valuable clarity to the empirical picture, especially when evidence is gathered using multiple methods, a practice known as triangulation. In this article, we use three different tasks (judgments, sentence processing, and production) to provide evidence of object focus marking in Spanish. We found that: (i) canonical orders (object in-situ) were preferred overall; (ii) marking object focus via movement strategies is possible—we find a relationship between object-focus marking and non-canonical (S)VPPO order, as predicted by mainstream syntactic accounts; and (iii) Spanish focus is not marked asymmetrically by position (subjects vs. non-subjects). Overall, results show canonical orders (i.e., SVOPP) can be used to realize focus on any constituent, while their non-canonical counterparts are contextually restricted. This finding suggests mainstream syntactic accounts in which information structure triggers syntactic movement may need to be revised to include alternative focus-marking mechanisms.

Keywords: Focus marking, Spanish, Information Focus, Triangulation, Information Structure, Processing

1 Introduction

When speakers communicate, they structure their speech to mark what is *new* information (roughly, “focus”) and what is *old* or highly retrievable information (roughly, “topic”), perhaps for reasons of efficiency (Stevens & Roberts 2019). Languages can differ in the ways they encode such information, which can be marked via syntax, prosody, or morphology (Krifka 2007; Büring 2009).

We investigate the marking of object information focus in Spanish, a language that has been described as using syntax to mark focus via movement of non-focal material, leaving the focus in final position (e.g., Zubizarreta 1998), as in (1).¹

- (1) Context: What did Lori find in her yard? *Object focus*
- a. #Encontró [un **erizo**]_F en su jardín. *VOPP*²
- she.found a hedgehog in her yard
- ‘She found a hedgehog in her yard.’

¹ In this paper, we use the term focus marking as equivalent to focus signaling or focus realization, to collectively cover all strategies speakers use for realizing focus, while recognizing that sometimes such strategies include unmarked word orders or stress patterns.

² We have chosen to notate the word order alternations as VOPP/VPPO because we find this the clearest presentation. However, we do agree with an anonymous reviewer in that this notation mixes grammatical roles (object) and phrase (structure) types (prepositional phrase). In terms of grammatical function, all our items were VOAdjunct or VAdjunctO.

- b. Encontró en su jardín [un **erizo**]_F. *VPPO*

Examples such as (1) have been portrayed as prototypical cases of how syntactic movement can be triggered by information structure. This argument has contributed to theoretical debates about the nature of information-structural phenomena, the possible triggers of movement, and the architecture of the grammar (for further discussion of these issues, see, among others, Reinhart 2006; Erteschik-Shir 2007; López 2009).

Recent investigations, however, present a sharp contrast to this picture. They show evidence that Spanish speakers of multiple varieties reliably prefer in-situ realizations when it comes to *subject* focus, as exemplified in (2) (Gabriel 2010; Hoot 2016; Leal, Destruel & Hoot 2018).

- (2) Context: Who read a novel? *Subject focus*
- a. Leyó una novela [**Juan**]_F. ← Predicted from the syntactic literature
 read a novel Juan
 ‘Juan read a novel.’
- b. [**Juan**]_F leyó una novela. ← Attested preference in experiments

To contribute to this debate, we expand on previous research in two ways. First, we examine the realization of information focus on constituents *within* the VP

(i.e., non-subjects). Although ours is not the first study of object focus, previous literature on Spanish has largely favored subject focus. Additionally, there is evidence suggesting movement within the VP may be more acceptable than movement of subjects (Gabriel 2010; Leal Méndez & Slabakova 2011; Hoot 2012; Feldhausen & Vanrell 2014; Hoot 2016), a possibility we test here. Our decision to test object focus marking is also motivated by crosslinguistic evidence of an asymmetry in focus marking across constituents, whereby focus on subjects and non-subjects is realized in different ways within a same language, earning these languages the label of “asymmetrical” (Zerbian 2007; Zimmermann 2008). Indeed, Skopeteas and Fanselow (2010) count Spanish among the languages for which movement to final position is required only for subjects. However, previous work on Spanish predicts sentence-final focus marking regardless of which constituent is in focus (Zubizarreta 1998). By comparing the realization of focus within the VP to data from our past work on subject focus, we address the existence of such an asymmetry.

Our second contribution is to examine how object focus is processed during online comprehension, in addition to testing it via judgments and production, by using a self-paced reading task. A potential limitation of prior investigations on Spanish is that most studies have mostly relied on production and felicity judgment tasks. Online methods, however, can be informative because they can “tap into processes that are not available to introspection”

(Kaiser 2016: 523). These methods, which have been frequently used in the study of other languages, have shown that speakers can and do process contextual appropriateness in real time (Kaiser & Trueswell 2004; Slioussar 2011; Weskott et al. 2011). Moreover, while researchers have suggested that methodological choices are relevant (Gabriel 2010; Hoot 2016; Leal, Destruel & Hoot 2018; 2019; Uth & García García 2018), few studies systematically examine the effects of task characteristics. In our investigation, we follow in the footsteps of other researchers examining methodological choices (e.g., Grosjean 1998; 2008; Plonsky 2015; Gudmestad & Edmonds 2018; Uth & García García 2018; Escandell Vidal & Leonetti 2019), asking whether task characteristics should affect the conclusions we draw from them. We argue that employing multiple tasks investigating the same phenomenon—a practice known as “methodological triangulation” (Mackey & Gass 2005)—is crucial for understanding the empirical results on focus in Spanish and their theoretical implications. In this paper, we use three tasks that vary on multiple dimensions with the aim of explaining discrepancies in the empirical findings.

In sum, we add three types of evidence to the available data on Spanish focus in order to contribute to theoretical debates on Spanish focus and shed light on how methodological choices affect experimental results. Concretely, we address the following research questions:

(3) *Research questions*

- a. What word order do Spanish speakers **accept** most often to realize object focus?
- b. What word order do Spanish speakers **produce** most often when realizing object focus?
- c. What word order do Spanish speakers **process** most quickly for object focus?
- d. How do results **vary** by task?

Previewing our results, we find that, across our three experiments, the most common strategy for marking object focus in Spanish is *in situ*, contrary to the traditional accounts in the syntactic literature but in line with other recent studies. In two of our tasks, however, we do find evidence that marking focus in final position via syntactic movement is possible, if not preferred – a finding that lends partial support to accounts such as Zubizarreta’s (1998). Our results, overall, favor a view of information structure in which canonical word orders³ can realize focus on any constituent, while non-canonical word orders are restricted to

³ We take canonical word order to be the basic, most common word order generated by syntactic rules but without any additional scrambling or movements. In the case of Spanish, we understand canonical order to be SVOPP. We take all other orders to be non-canonical. Although, as an anonymous reviewer points out, non-canonical orders are sometimes defined by their contextual restrictions, we use these terms merely descriptively to contrast between basic SVOPP order and alterations thereof, without reference to the contexts in which they are felicitous.

specific contexts. Moreover, after comparing our present results to previous work on subject focus, we find no strong evidence for an asymmetry between subjects and objects in Spanish. Finally, after carefully weighing our methodological choices, we find that results varied only minimally by task.

2 Information focus in Spanish

2.1 *Defining focus*

We examine the notion of *focus*, defined as the part of the sentence that is not presupposed but provides new information, evokes alternatives, or closes an open variable in the discourse context (Rooth 1992; Vallduví 1992; Krifka 2007; López 2009). Researchers have distinguished between types of focus, based either on the pragmatic inference conveyed or on the size of the focus domain. Specifically, previous work differentiates *information* (or *presentational*) focus from *contrastive* (or *identificational*) focus; the former simply conveys new information while the latter encodes additional pragmatic interpretations such as correction, contrast, or exhaustivity (É. Kiss 1998). Regarding domain, the term *wide* (or *broad*) focus is commonly used to denote instances where the focus extends to the entire sentence, whereas focus on a single constituent constitutes *narrow focus*. Here, we investigate *narrow information focus*, illustrated in (4), where the focus of the sentences—marked with the subscript F—is determined by

the discourse context. For brevity, we refer to this phenomenon simply as *focus* hereafter.

(4) *Narrow information focus on the direct object*

Context: What did Lori find in her yard?

She found [a hedgehog]_F in her yard.

Crosslinguistically, focused constituents have been argued to carry prominence (Jackendoff 1972; Truckenbrodt 1995), but languages differ in how they achieve such prominence. Intonation languages, such as English and German, mainly use prosody, shifting the nuclear pitch accent to match the focus location (Selkirk 1986; 1995; Büring 2001). French, specifically colloquial French, is known to use different syntactic constructions and most notably clefting (Lambrecht 1994; Destruel 2013), while languages like Japanese, Korean, and Gùrùntùm use morphological markers (Hartmann & Zimmermann 2009). Finally, languages like Italian or Hungarian use syntax to alter the word order so that the focal constituent occupies a structurally prominent position, often either by moving the focus to the left periphery or by scrambling other constituents to leave the focus rightmost (Rizzi 1997; Zubizarreta 1998; Szendrői 2017). This last strategy is what has been argued to happen in Spanish.

2.2 *Focus realization in Spanish: Theoretical insights*

Although some researchers have argued that Spanish can realize focus through various linguistic means, including prosody (Casielles-Suárez 2004; Olarrea 2012), the general claim is that information focus is marked via syntactic movement of non-focal constituents that leaves the focus element in sentence-final position (Bolinger 1954; Contreras 1978; Zubizarreta 1998; 1999; Büring & Gutiérrez-Bravo 2001; Costa 2001; Samek-Lodovici 2001; Gutiérrez-Bravo 2002; Domínguez 2004; Ortega-Santos 2006; Gutiérrez-Bravo 2008; Büring 2009; Leonetti 2014; Fábregas 2016; Escandell Vidal & Leonetti 2019). Under this view, which has largely been based on introspective judgments, (5b) is felicitous but (5a) is not.

(5) Context: Who drew the platypus? *Subject focus*

a. #**[Kalyani]**_F dibujó el ornitorrinco. *SVO*

Kalyani drew the platypus

‘Kalyani drew the platypus.’

b. Dibujó el ornitorrinco **[Kalyani]**_F. *VOS*

Zubizarreta (1998) has articulated the most significant explanation for this type of movement, motivating her analysis in terms of prosody: focus movement occurs because it allows the alignment of the focus with the position where

subjects. In other words, the focus-marking strategy employed in these languages depends on the position of the focused constituent. Evidence of this focus-marking asymmetry has been found for French (Lambrecht 2001; Destruel 2016), Hausa (Hartmann & Zimmermann 2007), West Chadic languages (Zimmermann 2008), several Kwa and Gur languages (Schwarz & Fiedler 2007), Northern Sotho (Zerbian 2007), and Georgian (Skopeteas & Fanselow 2010). Crucially, this asymmetry implies that if a language marks non-subjects explicitly, then it must mark subjects explicitly as well (Skopeteas & Fanselow 2010: 170).

Importantly for the present work, Skopeteas and Fanselow (2010: 201) claim such an asymmetry does exist in Spanish, whereby movement to final position is only required for subject focus. It is important to understand the context of their claim, though: Skopeteas and Fanselow make a typological claim, sorting languages into three categories: (i) those like Hungarian in which all arguments under focus receive some special syntactic marking, (ii) those like French in which subjects under focus receive special marking but objects stay in situ, and (iii) those like English in which no syntactic marking is needed. They place Spanish in the second category based on Büring and Gutiérrez-Bravo's (2001) claim that VOS order is required when the subject is focused, whereas unmarked SVO is sufficient for object focus.

Moreover, Büring and Gutiérrez-Bravo never discuss (S)VOPP sentences. In fact, a reasonable extension of the Optimality-Theoretic analysis that they

provide for Spanish to (S)VOPP sentences would predict non-final objects in focus would be aligned to final position via movement of the PP, producing (S)VPPO. In other words, Büring and Gutiérrez-Bravo's analysis does not predict a subject/non-subject asymmetry but rather a final/non-final asymmetry. This understanding of Büring and Gutiérrez-Bravo's work places Spanish in the first category: a language in which *any* argument not already in the special focus-marking position must be placed there by syntactic reordering. On the other hand, as we will see in the next section, there is evidence to suggest that Spanish may in fact fall in the last category, in which no special marking is needed, like in languages such as English. At the same time, Heidinger (2018) has found support for Skopeteas and Fanselow's claims based on Spanish data using clefts (clefts being more frequently used for subjects than objects). Given the conflicting claims, this issue could benefit from additional empirical clarity, which is one goal of the present study.

2.3 *The empirical landscape*

In the last decade, a growing number of experimental studies have shown that Spanish does not rely as heavily on syntactic strategies to signal focus as

traditionally thought.⁴ Previous studies using contextualized acceptability judgment tasks in Spanish have investigated subject focus with intransitive verbs, subject focus with transitive verbs, and object focus. Studies targeting subject focus with intransitives (unergatives/unaccusatives) have provided some of the strongest evidence for focus-final word orders, showing that Spanish speakers prefer focus-final VS orders (Alonso-Ovalle et al. 2002; Lozano 2006a; 2006b; Domínguez & Arche 2008; de Prada Pérez 2010; Roggia 2011; Domínguez 2013; Domínguez & Arche 2014). This finding is not universal: other studies found that VS and SV were rated similarly or chosen in equal measure (Alonso-Ovalle et al. 2002; de Prada Pérez & Pascual y Cabo 2012) or that SV is preferred (Ortiz López 2009) in subject-focus contexts.

When focus falls on the subject but the verb is transitive, movement appears to be modulated by other factors. In sentences including the object of the transitive verb, Mexican speakers prefer in-situ focus (Hoot 2012; Hoot 2016).

⁴ Many of the studies reviewed in this section contain multiple groups, often including native speakers and second-language learners or monolingual speakers and bilingual speakers. In those cases, the results we present here are those of native control groups, which should be included in the empirical data on Spanish focus just like any other study of such speakers. Furthermore, we report only the relevant results from these studies, namely those that include similar information-focus contexts, avoiding those with alternative notions of focus.

Andean speakers similarly accept SVO 100% of the time (Muntendam 2013). When the object is replaced with a clitic pronoun, Gupton (2017) found a slight preference for subject-final orders, while Domínguez and Arche (2008; 2014) found strong preferences for subject-final orders when the object was left-dislocated. When the SVO option is removed, allowing a comparison only between VSO and VOS, Leal Méndez and Slabakova (2011) found a preference for subject-final VOS, despite the inclusion of the overt object. Finally, when focus is on the (DP) object, both focus-final and non-focus-final orders appear to be possible. Both Leal Méndez and Slabakova (2011) and Hoot (2012; 2016) found VOPP and VPPO to be equally acceptable for object focus, and Heidinger (2013; 2015) and Gómez Soler and Pascual y Cabo (2018) found that focus-final orders may be slightly preferred for object focus but are not required.

Unlike judgment tasks, neither oral nor written production tasks have yielded strong evidence for focus-final orders. With intransitive verbs, Hertel (2003) found that VS was not the most common realization for subject focus, although it was more common in subject-focus contexts than in broad-focus contexts. Similarly, Roggia (2011) found that subject-final orders were produced about 60% of the time for unaccusative verbs (canonically VS in Spanish) with no difference for subject focus, whereas for unergative verbs (canonically SV), production of VS increased only slightly (to about 50%) under subject focus. With transitive verbs, Gabriel (2010) and Leal, Destruel, and Hoot (2018) found

that when participants marked subject focus using full sentences including the transitive verb's direct object, they produced subject focus overwhelmingly in canonical position. Kim (2016) found the same was true when the prompt led participants to replace the object with a clitic pronoun. In contrast, Gabriel found a different pattern with clitic pronouns: 50% of one group and 73% of another group produced subject-final orders. Uth (2014) similarly concludes that pre-verbal subject focus is an option but that removing the object makes focus-final orders more likely. Vanrell and Fernández Soriano (2013; 2018) and Feldhausen and Vanrell (2014; 2015) documented a range of constructions for subject focus, including clefts and stress in situ.

Some production studies have examined focus on direct objects when these are followed by some other constituent to allow the possibility of scrambling. As with the marking of subjects, Gabriel (2010) found that object focus was overwhelmingly produced in situ, although he found movement in a few cases. Heidinger (2015) also found that speakers produced utterances with direct objects in final position under narrow focus around 60% of the time. Feldhausen and Vanrell (2014; 2015) similarly reported that movement to final position, although not obligatory, was the participants' most frequent choice, while Vanrell and Fernández-Soriano (2018) reported a wide range of object focus marking strategies, including in situ realization, fronting, and final.

Finally, a few studies examine corpora that includes long stretches of naturalistic conversation. Ocampo (1995; 2003; 2005) documents a variety of strategies for marking focus, noting a lack of one-to-one correspondence between context and any given construction. In his corpora, most sentences have canonical word order, and the focus is not always stressed. Labastía's (2006) recording of one subject's naturalistic speech also documents a range of strategies, including cases in which the stress is shifted to the focus *in situ*, showing that focus need not be rightmost in *porteño* Spanish.

In sum, when Spanish speakers judge focus in tasks that include canonical order options, they typically disfavor alternatives where the focused subject is in final position (i.e., VOS; Hoot 2012; Muntendam 2013; Hoot 2016). Furthermore, speakers rarely mark subject focus via VOS order in production tasks (Gabriel 2010; Vanrell & Fernández Soriano 2013; Feldhausen & Vanrell 2014; Feldhausen & Vanrell 2015; Kim 2016; Leal, Destruel & Hoot 2018; Vanrell & Fernández Soriano 2018). In contrast, word-order alterations *within* the VP—e.g., moving a non-focal PP to create VPPO order so that a focused, non-final direct object is in final position—are more acceptable (Leal Méndez & Slabakova 2011; Hoot 2012; Heidinger 2013; 2015; Hoot 2016) and more likely to be produced (Gabriel 2010; Feldhausen & Vanrell 2014; Feldhausen & Vanrell 2015; Heidinger 2015; Vanrell & Fernández Soriano 2018). The asymmetry (between subject-focus marking and object-focus marking) contrasts sharply with (a)

syntactic approaches to Spanish focus movement, which generally propose a single mechanism motivating focus movement irrespective of constituent, and (b) the literature documenting asymmetries in focus-marking cross-linguistically, which generally finds that *subjects* tend to be marked explicitly more than *objects*.

2.4 *Research on focus with self-paced reading*

Because our research is the first, to our knowledge, to explore focus in Spanish using self-paced reading, it is important to establish the methodology's utility. Self-paced reading has been successfully used to study the role of context in processing non-canonical word orders in other languages. These investigations show that speakers are sensitive to information structure from very early stages in the comprehension process. When presented without a context, non-canonical orders show degraded acceptability ratings and, crucially for our purposes, also induce processing difficulties (Weskott et al. 2011). However, when the proper context is established, non-canonical orders can be processed either as fast as canonical orders (Kaiser & Trueswell 2004) or even faster (Slioussar 2011; Weskott et al. 2011). The latter situation (when speakers process non-canonical orders faster than canonical ones in the proper context) is known as *strong contextual licensing*, while the former (when speakers process non-canonical orders as fast as canonical orders when the proper context is established) is known as *weak contextual licensing*.

While we know of no previous self-paced reading investigation of non-final object focus (where there is material after the direct object) in Spanish, we have previously published another part of the present project (Hoot & Leal 2020), in which we used a self-paced reading task to investigate reading times of VOS and VSO word orders under subject and object focus in Spanish. In line with previous research, our results showed evidence of contextual licensing: VOS was read significantly faster than VSO in subject-focus condition, while VSO was read significantly faster in object-focus condition. In our view, this evidence provides support, albeit partial, for movement accounts of Spanish focus. Additionally, it indicates that Spanish speakers do attend to context in real time, as has been demonstrated for speakers of other languages (Kaiser 2016). Because this investigation did not include material after the direct object, the present paper represents a necessary second step.

3 Methodological triangulation

The foregoing landscape highlights the importance of experimental methods in focus-marking research. Methodological triangulation can be “within-method” or “across-method” (Denzin 1989), and either “sequential” or “simultaneous” (Morse & Field 1995). In our case, we use triangulation that is within-method (all our tasks are quantitative) and sequential (our tasks were not done at the same time with the same participants). As with any methodological

choice, there are pros and cons associated with the choice of type of triangulation. As we will see in the description of our methods, because our tasks were sequential, they not include the same exact participants. Additionally, the items used in each task were not identical—a choice that should be considered in our interpretations.

Within linguistic research, triangulation is broadly considered to increase validity while decreasing bias. Methodologists (e.g., Johnson 1992; Mackey & Gass 2005) typically encourage researchers to provide several “independent sources to support the study and its conclusions” (Mackey & Gass 2005: 181). We examine (non-final) object focus within three different tasks because the basic facts of focus in Spanish have been enthusiastically debated, raising the question of whether task characteristics factor into these findings (see Uth & García García 2018).

Our goals also align with those in triangulation literature: confirmation of data, completeness of data, and curbing of bias (Jick 1979; Denzin 1989; Knafl & Breitmayer 1991; Redfern & Norman 1994; Halcomb & Andrew 2005; Casey & Murphy 2009). Data confirmation entails verifying whether data from different methods converge so that researchers can be confident in the outcomes—an explicit goal in our case. Another goal of triangulation is to enlarge the data set (Jick 1979). Here, we make a valuable contribution because one of the methods we utilize (self-paced reading) has not been previously used to study Spanish

object focus, and because most studies on focus have not previously made use of triangulation. Finally, we are interested in curbing the biases inherent to any particular method. If task characteristics have been a factor in previous research, the inclusion of a new method and explicit comparisons across methods can help us determine which dimensions are affected by a task.

Finally, we follow Mathison (1988, paraphrased in Howe 2012), who notes that:

Triangulation need not aim to either confirm or disconfirm a given claim, depending on whether data from different methods diverge or converge, respectively. Rather, the researcher can seek to accommodate ostensibly discordant data by bringing it under a more comprehensive explanatory framework. (Howe 2012: 90)

Thus, we allow for the possibility that discordant findings do not necessarily reflect measurement error, but that they might, instead, highlight additional factors that bear on the realization of focus. With this in mind, we turn to descriptions of the three tasks and their results.

4 Semi-spontaneous speeded oral production task

4.1 Participants

We tested 42 monolingual native speakers of Mexican ($n=20$) and Chilean ($n=22$) Spanish in Puebla, Mexico and Santiago, Chile, where they resided. We tested Mexican speakers because this variety is well documented in the experimental literature on information structure (see Hoot 2016; Leal, Destruel & Hoot 2018, among others). Conversely, Chilean Spanish was selected because *few* studies have focused on it regarding information structure. We also considered the fact that Chilean Spanish is not in significant contact with Mexican Spanish or English and is not a Caribbean dialect, because Caribbean Spanish has different syntactic restrictions on subject position (Camacho 2006; Ortiz López 2009). Participants were compensated for participation.

4.2 *Procedure and materials*

Participants watched short clips from a silent film—Charlie Chaplin’s *The Circus* (1928)—in front of a computer. At the end of each clip, participants had ten seconds to answer a *wh*-question that appeared on the screen. The software, SuperLab 5.0, did not allow for video replay. To discourage single-constituent answers, the instructions asked participants to answer using complete sentences and to provide copious details. Answers were recorded with the software Audacity.

We manipulated the grammatical function of the focus element: *wh*-questions targeted either the direct object or the prepositional phrase, as illustrated

in (7) and (8). Object focus was compared to PP focus because PPs appear finally both when focused and in the canonical word order.

(7) *Object focus*

¿Qué montó la acróbata en el circo?

‘What did the acrobat ride in the circus?’

(8) *PP focus*

¿Dónde montó la acróbata al caballo?

‘Where did the acrobat ride the horse?’

Experimental items included a subject, a transitive verb, an object, and a prepositional phrase. Each condition included five lexicalizations, matching the actions in the clips. The task also included 65 fillers. We distributed the ten experimental items and the fillers across three lists (25 items each), so each participant saw three or four experimental items and 21-22 fillers. Because our prompts were based on the story depicted in the videos, it was not possible to control for the frequency, complexity, or prosodic weight of the constituents. The full instrument is available in Supplementary File 2.

4.3 *Results*

We transcribed responses orthographically with the aid of a research assistant and then, to ensure accuracy, randomly checked 10% of the transcriptions. When finding discrepancies, we reviewed the entire transcript of a given participant. We coded the responses following conventions adopted in our previous work (Leal, Destruel & Hoot 2018). Among in-situ realizations, we distinguished between instances in which the object was focalized in its canonical position (*In-Situ*, i.e. (S)V[O]_FPP) and instances where the object's surface position was sentence final because the PP was elided (*Elision*, i.e. (S)V[O]_F). Within ex-situ realizations, we found three movement strategies: (i) sentence initial (*Movement:Fronted*, e.g., [O]_FVS and [PP]_FSVO), (ii) sentence final (*Movement:Final*, e.g. SVPP[O]_F), and (iii) movement to positions other than sentence-initial or sentence-final (*Movement:Other*). Finally, we used *Other* and *Misunderstood/No response* for answers that did not fit into the previous categories or when participants misunderstood or failed to answer. *Misunderstood/No Response* codes were excluded from analysis. Similarly, because *Other* strategies were mainly single-constituent answers, mostly uninformative for our analysis, we do not to consider them hereafter. Finally, all authors reviewed every case to ensure consistent application of the codes. (Supplementary File 1 details our coding system.)

Figure 1 illustrates the proportion of responses in the object and PP focus conditions for the two groups.

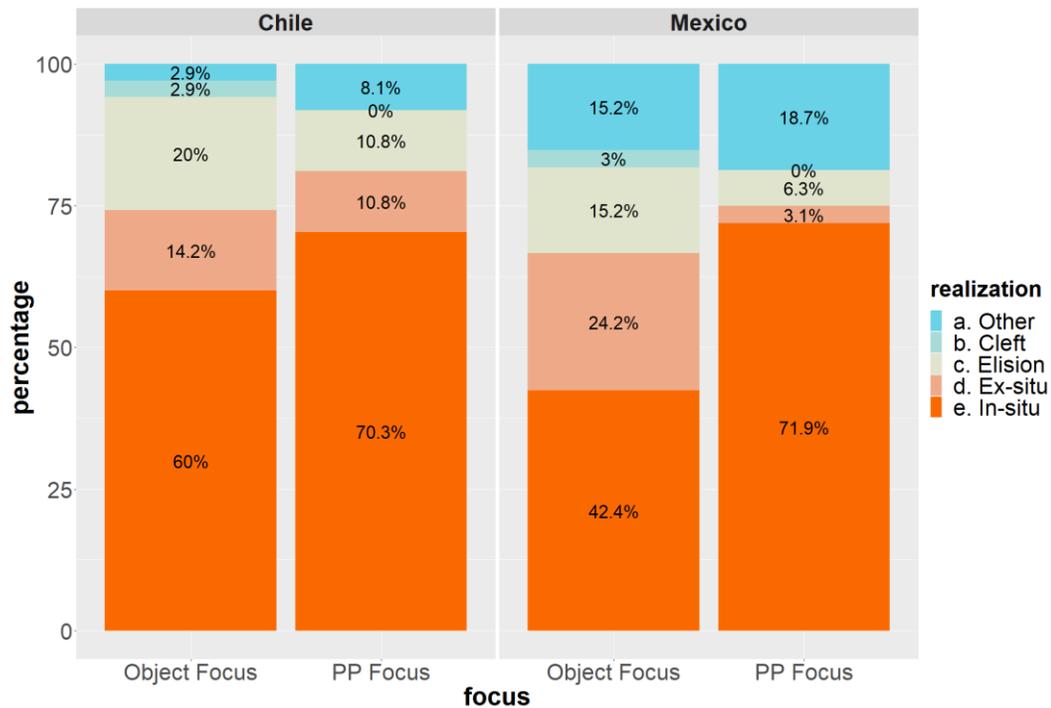


Figure 1: Distribution of strategies for object focus marking and PP focus marking by group.

Overall, speakers largely prefer in-situ marking, that is, canonical SVOPP order, for object focus (42% and 60% for Mexican and Chilean speakers, respectively). This percentage is even higher for PP focus (in which case both groups average 70% and 72%). This result holds regardless of the object's phonological weight.

Because marking focus via movement was uncommon, we collapsed all three movement types under the “ex-situ” label in Figure 1; nonetheless, some movement types were more common than others. Objects that were not in canonical position most frequently appeared in final position (18% for Mexican speakers,

14% for Chilean speakers)—precisely the strategy predicted under Zubizarreta’s (1998) analysis (see example 9). Fronting was very rare (see example 11); no examples were attested in the Chilean group, and only 6% in the Mexican group.

(9) *Movement: Final*

El señor del bigote golpeó en la cara [a la chica]_F.

the man of.the mustache hit in the face DOM the girl

‘The man with the mustache hit [the girl]_F in the face.’

When examining PP focus movement strategies, we find dialect-related differences; only Mexican speakers use *Movement: Other*, as in (10) (2%), and only Chilean speakers use fronting, as in (11) (9.3%).

(10) *Movement: Other (PP Focus)*

El plato lo puso [en la mesa]_F el señor del bigote.

the plate it put on the table the man of.the mustache

‘The man with the mustache put the plate [on the table]_F.’

(11) *Movement: Fronting (PP Focus)*

[En la carpa del circo]_F montó la chica al caballo.

in the tent of.the circus rode the girl DOM.the horse

‘The girl rode the horse [in the circus tent]_F.’

A less-common strategy (which does not apply to PP focus) was finding objects at rightmost position where post-focal material was elided, as in (12). Thus, speakers could leave the focus element in rightmost position without syntactic movement. Finally, clefts were never used to mark PP focus and only infrequently for object focus.

(12) *Elision*

Context: Who did the man with the mustache hit in the face?

El señor del bigote golpeó [a la chica]_F~~en la cara~~.

the man of.the mustache hit DOM the girl ~~in-the face~~

‘The man with the mustache hit [the girl]_F ~~in-the face~~.’

To determine statistical significance, we ran a generalized mixed logistic regression, using the *glmer* function in R (R Core Team 2014), which predicted focus-marking realization from the two fixed-effect predictors, treatment-coded prior to analysis: Group (Chilean: 1, Mexicans: -1) and Focus Constituent (Object focus: 1 vs. PP focus: -1). For ease of analysis, we collapsed our categorical dependent variable (i.e., the open-ended responses given) into a binary outcome. We categorized responses depending on whether the sentence’s focus was realized

in its canonical, in-situ position or not. Our models included random by-item intercepts and random by-participant intercepts and slopes for the two fixed-effect predictors, as well as their interaction. We report the estimate (β), standard error (SE), t -scores, and p -values, taking a p -value of 0.05 as the threshold for statistical significance.

Our analysis revealed no main effect of Group ($\beta = 8.73$, $SE = 1.34$, $t = 0.65$, $p = 0.51$) or Constituent ($\beta = -2.75$, $SE = 1.33$, $t = -0.205$, $p = 0.83$), and no interaction between the two ($\beta = -6.14$, $SE = 1.34$, $t = -0.63$, $p = 0.52$), suggesting that both native groups realize object and PP focus in similar ways: in-situ marking is favored overall.

Nonetheless, it is important to note that the order in roughly one in six responses to object focus questions across both groups was SVPP[O]_F, with the object in final position, whereas SV[PP]_FO never occurred under PP focus (as expected). Because there were no SVPPO instances in PP focus, we could not carry out a statistical analysis of the difference, but these results nevertheless show a relationship between final position and focus for direct objects.

5 Forced-choice task

5.1 *Participants*

We tested monolingual native speakers of Yucatecan Spanish in Merida, Mexico ($n=42$).⁵ Participants reported their language history, dominance, ideology, and preferences via the Bilingual Language Profile (BLP; Birdsong, Gertken & Amengual 2012). Their demographic and language history characteristics are presented in Table 1.

Table 1: Participant characteristics.

Total number of participants (female)	42 (25F)
Mean age (range)	21.8 (18-39)
Mean self-reported usage of Spanish “in a normal week” across contexts (family, friends, school/work) (range)	95% (60-100)
Mean (range) self-reported usage of Yucatec Maya “in a normal week” across contexts (family, friends, school/work)	1.7% (0-100) ⁶
Mean (range) self-reported Spanish proficiency (speaking, understanding, reading, & writing), 0-6 scale.	5.7 (3-6)
Mean (range) self-reported Yucatec Maya proficiency (speaking, understanding, reading, & writing), 0-6 scale.	0.1 (0-4)

We excluded speakers who spoke a different variety (e.g., anyone who grew up outside Yucatan state), had not learned Spanish in early childhood,

⁵ Although none of our participants were bilingual, some had limited exposure to Yucatec Maya.

⁶ One person answered 100% usage for Spanish and 100% for Yucatec Maya for their family, despite claiming never to have learned Yucatec Maya and not to be able to speak it. We believe this person was functionally monolingual despite this answer to this question, and if that score is removed the upper limit of this range is 10%.

reported significant contact with a language other than Spanish prior to age 14, or reported language-related or cognitive impairments. Fifteen people, not included in the count above, were excluded for these reasons. Participants were naïve and uninformed about the object of the study and were compensated.

5.2 *Procedure and materials*

Participants completed the forced-choice task and self-paced reading task in the same session.⁷ The forced-choice task lasted around 10-15 minutes and was delivered online via the software Qualtrics, but it was conducted in person (on a computer and, on a few occasions, on a mobile device).⁸ Participants completed the BLP during the same session.

The task included written instructions in Spanish, along with two practice items after which there was no feedback. Participants completed 64 forced-choice items, including 16 critical items—eight in each condition—and 48 fillers, randomized by participant. Our fillers tested other types of focus as well as unrelated structures. Each item was followed by three choices also randomized by participant.

⁷ Generally, they completed the forced-choice task second, but sometimes, for scheduling reasons, they completed it first.

⁸ An anonymous reviewer noted that forced-choice tasks have distinct characteristics from judgment tasks, a fact that we acknowledge. However, forced-choice tasks are typically treated as a subset of judgment tasks (see Schütze & Sprouse, 2013), a categorization we hold to.

During each trial, participants read a question creating the context for object focus or focus on the adjunct prepositional phrase (PP). Then, participants chose the most natural sentence to answer the question from three word-order options. Questions were preceded by drawings depicting the action in the target sentences (see Figure 2).



¿Qué guardó por la noche?

Parece ser que guardó por la noche los juguetes.

Parece ser que guardó los juguetes por la noche.

Parece ser que los juguetes guardó por la noche.

Figure 2. Sample forced-choice item.⁹

⁹ The item in Figure 2 reads thus:

Context: What did he put away at night?

The forced-choice task had a 2 x 3 design. The word-order options were (canonical) VOPP, VPPO, and Fronting (PPVO/OVPP). This last category was included because this study is part of a larger project investigating cross-linguistic influence in bilingual speakers. In Yucatec Maya, the most common way to realize focus is via fronting the focal constituent to sentence-initial position (Verhoeven & Skopeteas 2015), which is why the fronted options were included. While Focus Fronting is also possible in Spanish, it signals contrast rather than information focus (López 2009). Examples are found in Table 2.

Table 2: Example forced-choice stimuli by condition.

	Object focus	PP Focus
Context	<i>¿Qué plantó en el jardín?</i> what he.planted in the garden 'What did he plant in the garden?'	<i>¿Dónde plantó los árboles?</i> where he.planted the trees 'Where did he plant the trees?'
Option 1: VOPP	<i>Plantó los árboles en el jardín.</i> he.planted the trees in the garden 'He planted the trees in the garden.'	<i>Plantó los árboles en el jardín.</i> he.planted the trees in the garden 'He planted the trees in the garden.'

Parece ser que guardó los juguetes por la noche
it.seems to.be that he.put.away the toys by the night
'It seems that he put away the toys at night.'

Option 2:	<i>Plantó en el jardín los árboles.</i>	<i>Plantó en el jardín los árboles.</i>
VPPO	he.planted in the garden the trees	he.planted in the garden the trees
	‘He planted the trees in the garden.’	‘He planted the trees in the garden.’
Option 3:	<i>Los árboles plantó en el jardín.</i>	<i>En el jardín plantó los árboles.</i>
Fronting	the trees he.planted in the garden	in the garden he.planted the trees
	‘He planted the trees in the garden.’	‘He planted the trees in the garden.’

To instantiate these structures, we created sixteen lexicalizations.

Participants saw each lexicalization only once, either in the object-focus condition or in the PP-focus condition. Because lexical frequency can affect acceptability judgments, the words used were among the 5,000 most common Spanish words (Davies 2006). Additionally, because phonological weight affects pre- and postposing of arguments (Heidinger 2013; 2015), direct objects and PPs were comprised of the same number of syllables. The full instrument is available in Supplementary File 3.

5.3 Results

The results of the forced-choice task are shown in Figure 3.

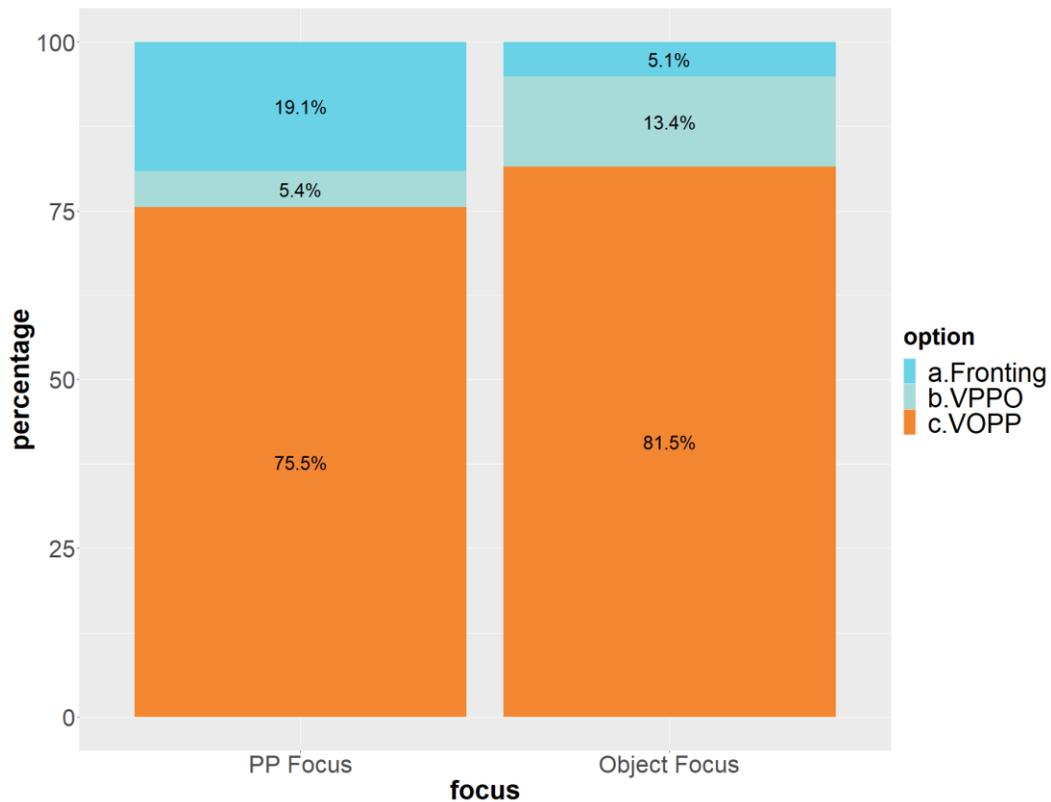


Figure 3. Forced-choice task results.

Figure 3 shows that VOPP is clearly the preferred word order for both focus contexts. To determine whether the proportions were different in the two focus contexts, we conducted three binary logistic regressions using the GLMM procedure in SPSS. For each regression, Focus Type (Object or PP focus) was the only fixed effect. To account for repeated measures, we included a random

intercept by subject.¹⁰ We report the estimate (β), standard error (SE), t -scores, and p -values, taking a p -value of 0.05 as the threshold for statistical significance.

The first test compared the probability of VOPP word order across the two conditions (object/PP focus). The effect of Focus Type on the probability of VOPP was not significant ($\beta = -0.34$, $SE = 0.20$, $t = -1.69$, $p = 0.09$), so VOPP was preferred under both object and PP focus questions.

The second test compared the probability of VPPO word order across the two focus conditions. This test revealed a significant effect of Focus Type on the probability of VPPO ($\beta = -1.02$, $SE = 0.29$, $t = -3.48$, $p = .001$). Pairwise comparisons revealed that VPPO was substantially more probable under object focus than under PP focus.

Finally, the third test compared the probability of Fronting across the two conditions, revealing a significant effect of Focus Type on the probability of Fronting ($\beta = 1.50$, $SE = 0.29$, $t = 5.13$, $p < .001$). Pairwise comparisons revealed that Fronting, unlike VPPO, was substantially more probable under PP focus than under object focus.

¹⁰ Including random slopes by subject or any random effect by item caused the models not to converge in two of the three cases. For the third test, a model with a random slope by subject and a random intercept by item did converge, but, given that there are no agreed-upon measures to compare goodness of fit with logistic regressions, we chose to use the same random effects structure for all three tests for the sake of consistency. Either random effects structure produces the same results, so the decision does not affect our conclusions.

6 Self-paced reading task

6.1 Participants

The same participants who took part in the forced-choice task completed the self-paced reading task. See section 5.1.

6.2 Procedure and materials

The SPR task was completed in the program Linger (Rohde 2003). At the outset, participants read on-screen instructions and completed five practice items. The 96 SPR items were randomized by participant and presented in three blocks of 32 each. Participants could take breaks between blocks and between tasks. Overall, the task lasted approximately 45 minutes.

Each item was preceded by a non-moving context establishing given and new information and ending in a question targeting either the direct object or the PP. The stimulus then appeared on the screen, masked by dashes, and participants advanced through the sentence by pressing the spacebar. The task used a non-cumulative moving window paradigm, such that each press of the spacebar revealed one segment of the sentence, allowing participants to set their own pace for reading (Just, Carpenter & Woolley 1982). The program measured the time in milliseconds between button-presses. Participants could not go back and reread.

Each stimulus was followed by a true/false statement to check comprehension; participants responded by pressing J if false and F if true. Half

the statements were true, half false. Half targeted the context and half targeted the experimental sentence, but none targeted the constituent in focus. Wrong answers were marked as incorrect so that readers would slow down. One participant whose answers were less than 80% accurate on the comprehension questions was excluded from the study.

The self-paced reading task had a 2x2 design manipulating two independent variables: *Focus Type* (object focus/PP focus) and *Word Order* (VOPP/VPPO). Table 3 illustrates sample items in the four conditions; critical regions are underlined.

Table 3: Example SPR stimuli by condition.

	Object Focus	PP Focus
Context	<i>Contrataron a un artista para instalar una obra en el patio del museo. ¿Sabes qué instaló?</i> ‘They hired an artist to install a work in the patio of the museum. Do you know what he installed?’	<i>Contrataron a un artista para instalar un mosaico en alguna parte del museo. ¿Sabes dónde lo instaló?</i> ‘They hired an artist to install a mosaic in some part of the museum. Do you know where he installed it?’
VOPP	<i>Pues yo creo que <u>instaló un mosaico en el patio</u>, aunque no estoy seguro.</i>	<i>Pues yo creo que <u>instaló un mosaico en el patio</u>, aunque no estoy seguro.</i>

‘Well, I think he installed a mosaic in the patio, although I’m not sure.’

VPPO	<i>Pues yo creo que <u>instaló en el patio un mosaico</u>, aunque no estoy seguro.</i>	<i>Pues yo creo que <u>instaló en el patio un mosaico</u>, aunque no estoy seguro.</i>
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‘Well, I think he installed in the patio a mosaic, although I’m not sure.’

To reduce variation due to external factors, we controlled for the following: All direct objects were indefinite, masculine, inanimate nouns (e.g., *un mosaico* ‘a mosaic’). PPs were either temporal adjuncts (*por la noche* ‘at night’) or locative adjuncts (*en el bosque* ‘in the forest’), including a preposition and its complement definite DP. In a given sentence, the direct object and the PP had the same number of syllables (either four or five), to control for phonological weight. Verbs, always three syllables long, were core transitive verbs appearing in the third-person singular of the preterit. The combined critical region (verb, object, and PP, underlined in Table 3) was controlled for overall length (between 26 and 32 characters).

We controlled for definiteness and phonological weight because they interact with information structure. We also controlled for plausibility, so we were not able to control for word frequency. To address potential problems with

infrequent lexical items, however, we conducted a pilot study in which native Spanish speakers ($n=9$) were asked for explicit feedback on plausibility and comprehensibility. They were asked in particular for feedback on lexical choice. Their comments resulted in small changes to introductory contexts; critical items were all judged comprehensible and plausible.

We embedded the items in a carrier phrase so that the critical region would be neither the first nor the last part of the sentence.¹¹ The portion of the sentence after the critical region was always a new clause, so that a constituent appearing at the end of the critical region was also at the end of its clause, i.e., in the predicted focus-prominent position.

We created 32 lexicalizations and distributed them across eight lists, so that each participant saw eight items in each cell of the design, for a total of 32 experimental items. Additionally, each participant saw 64 filler items. The full instrument is available in Supplementary File 4.

6.3 *Results*

¹¹ An anonymous reviewer noted that this decision, however, reduces the comparability of the experiment because the stimuli for the SPR and the FCT, included complex sentences, while the responses of our production task included both complex and simple sentences. We must also note that any production task, including ours, will have this comparability problem, as investigators cannot always control whether speakers produce simple vs. complex clauses in a production task.

Before conducting the analysis, we log-transformed the reading times (RTs) and examined them to exclude outliers who had RTs more than 2 standard deviations from the overall mean, resulting in two exclusions. To analyze the data, we then trimmed the raw reading times conservatively at a minimum of 100 milliseconds and a maximum of 10,000 milliseconds. Finally, we created length-adjusted RTs following Fine et al.'s (2013) length-adjustment procedure and then combined the RTs of the three regions of interest (verb, direct object, and PP). The residual RTs from the adjustment procedure indicate how much faster or slower participants read the items compared to the expected time for a segment of that character length. The lower the RT, the faster those items were read. Figure 4 presents the length-adjusted RTs by condition and word order.

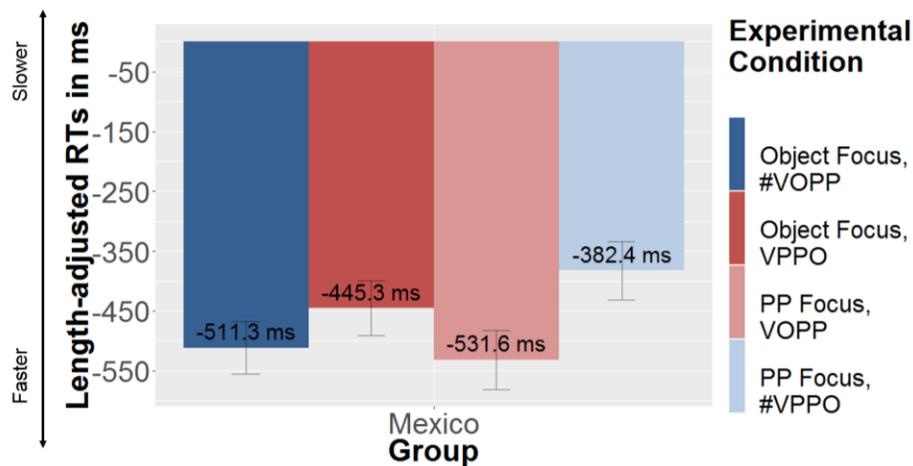


Figure 4. Length-adjusted reading times by condition.

We analyzed the length-adjusted RTs by fitting a linear mixed model following Eddington's (2015) model-fitting procedure. The model included two fixed factors: Focus (object or PP) and Order (VOPP or VPPO), as well as their interaction. The model accounted for repeated measures by including a random intercept by subject; it also included a random intercept by item.

Type III tests of fixed effects revealed a main effect for Order ($F(1,1237) = 4.69, p = .031$), but no main effect for Focus ($F(1,1237) = 0.02, p = .886$) and no interaction ($F(1,1237) = 0.86, p = .355$). Pairwise comparisons confirmed that VOPP was read faster than VPPO overall ($p = .031$), irrespective of focus context.

7 Discussion

7.1 *Summary of results*

Overall, the results of our three tasks converge. These results show that in-situ realizations (i.e., canonical orders) are the most commonly produced, most highly rated, and most rapidly processed for non-final object focus. Beyond this overwhelming preference, however, we find that speakers do produce and accept object-final word orders more often under object focus than otherwise, which fits in with the dominant understanding in the syntactic literature. The results from our three experiments are most compatible with a view of information structure in which canonical word orders can realize focus on any constituent, while non-canonical word orders are restricted to specific contexts (e.g., Höhle 1982; Hopp

2009; Weskott et al. 2011). Specifically, while canonical SVOPP word order is felicitous in any context, SVPPO is mostly found in contexts in which the constituent in final position is in focus. This contrasts with positions that propose a strict one-to-one relationship between focus-marking and grammatical function, or those positions in which movement is triggered by pragmatic features, whether directly (e.g., Rizzi 1997) or indirectly, via an association with stress (e.g., Zubizarreta 1998; Büring & Gutiérrez-Bravo 2001; Samek-Lodovici 2001).

7.2 *The role of task characteristics*

Across the three tasks, we find limited evidence that task characteristics influenced the observed results; in fact, there is remarkable similarity across the findings. This is in spite of the fact that the tasks did not use the same items and that the production task was done with a different group of speakers. In what follows, we examine the results of each task one by one and compare them to previous findings in an effort to determine what effects could be attributed to the task design.

7.2.1 *Production task*

In the production task, in-situ realizations were the most common, a finding that aligns with the previous literature and is consistent with the results of our other two tasks. However, we did find evidence that final position was

associated with focus marking because speakers produced non-canonical VPPO more often under object focus than under PP focus. Thus, our results echo previous production studies that found a predominance of in-situ focus marking for objects with few instances of movement resulting in the focus in final position (Gabriel 2010; Vanrell & Fernández Soriano 2013). Conversely, our results are unlike those studies that have found higher proportions of movement (Feldhausen & Vanrell 2014; 2015; Heidinger 2015).

How might the characteristics of our production task affect the results and our interpretation of them? First, we must take into account the fact that this data is not from a reading task, which has a particular effect on prosodic realizations (Uth & García García 2018). Since we are mostly interested in the resulting word order, however, we will not discuss this difference at length.

One important characteristic to consider involves the eliciting prompts, because different rates of movement may correlate with different focal constituents. For instance, the stimuli in Gabriel (2010), which elicited focus on a direct object followed by a PP indirect object, prompted the lowest rates of focus marking via movement (17% for one group, 27% for the other). Feldhausen & Vanrell (2014; 2015), on the other hand, found a higher rate of movement (roughly 50%), and their stimuli included a PP adjunct following the direct object. Finally, Heidinger (2015) found the largest rate of movement (64%) using stimuli that included a subject-oriented depictive adjective rather than a PP. (In the

sentence *Juanita pintó el armario descalza* ‘Juanita painted the armoire barefoot,’ *descalza* ‘barefoot’ is a depictive.) While it is quite plausible that the difference between our findings and Heidinger’s are due to the type of constituents involved, our stimuli most resemble those of Feldhausen and Vanrell, yet our results are much closer to Gabriel’s, which show a higher proportion of in-situ realizations. We do not have a clear reason for this difference.

One possibility is that prompts also differ in how they are delivered. A common method is to present the context via pictures and then present the question in writing, asking participants to answer aloud (Gabriel 2010; Vanrell & Fernández Soriano 2013; Feldhausen & Vanrell 2014; Uth 2014; Feldhausen & Vanrell 2015; Vanrell & Fernández Soriano 2018). Other studies elicit production orally, providing the context aurally or in pictures and asking the question aloud to prompt an oral response (Roggia 2011; Heidinger 2015; Muntendam & Torreira 2016; Sánchez-Alvarado 2020). Finally, a few use other methods, including written production (Hertel 2003) and repetition of an aurally-presented sentence (Kim 2016). Our method is closest to the first type of elicitation—visual context via video and written prompts for oral production, which has been criticized for not including prosodic information in the prompts (Escandell Vidal & Leonetti 2019)—but ultimately, few differences appear to hinge on whether the prompts are written or aural. No pattern of results emerges between the two main

elicitation types, and studies that have somewhat different outcomes from ours use similar elicitation types.

7.2.2 *Forced-choice task*

Moving to our forced-choice task, our results show evidence that in-situ realizations (VOPP) were the most common choice, with rates that were even higher than those in our production task. Moreover, the proportion of VOPP choices did not vary by condition. That VOPP was preferred to the same degree under both object and PP focus suggests that focus in situ (V[O]_FPP) is available in Spanish, a finding not predicted by the leading syntactic account (e.g., Zubizarreta 1998). However, again we find that speakers *can* realize object focus via movement: participants chose non-canonical VPPO significantly more often under object focus than PP focus. That VPPO was more probable when the object was in focus provides support for focus being instantiated in final position in Spanish. This finding contrasts with data showing that speakers either slightly prefer movement strategies (Heidinger 2013; 2015; Gómez Soler & Pascual y Cabo 2018) or choose equal rates of both in-situ marking and movement (Leal Méndez & Slabakova 2011; Hoot 2012; 2016)—in our data, these instances represented a low proportion of cases. Beyond the literature in Spanish focus, we note that our result aligns with the view that canonical word orders are available to instantiate any type of information structure, while non-canonical word orders

appear to be restricted to specific contexts (see Höhle 1982; Hopp 2009, among others).

We ask again: How might the characteristics of our acceptability judgment task affect our results and interpretations? One dimension to consider is the type of judgment elicited. A possible reason our findings contrast with previous judgment studies may be that our results are from a forced-choice task, while previous results come largely from rating tasks using numerical scales. Sprouse and Almeida (2017) have shown that forced-choice tasks are more powerful than rating tasks at detecting the same effect size, so increased power could be an explanation for why we observe greater evidence for movement than Gómez Soler and Pascual y Cabo (2018) or Hoot (2012; 2016) did using numerical scales.

Another consideration concerns design: Schütze and Sprouse (2013) argue that the best judgment task design for isolating the effects of theoretical interest is a fully crossed factorial design, yet not all previous judgment studies have included this feature (e.g., Hoot 2012; 2016). In such a design, the result of interest is not just whether sentence type A is more or less acceptable (or chosen more or less often) than sentence type B, because such a difference could stem from many factors beyond those of theoretical interest. Instead, the idea is to compare A to B in one condition and then compare A to B in a different condition. If the difference between the two is greater in one condition than the other, we can claim that the manipulation between the conditions has an effect.

The present study has a factorial design, comparing the percentage of the time each word order was chosen across contexts. So, the question is not simply “Which order is chosen more?” but rather “How does the relative proportion change across conditions?” In this light, our study provides evidence that the preferred order outlined in Zubizarreta’s account is, indeed, attested in the data, even if it is not the most common option: VPPO is significantly more common under object focus than in a comparison context, meaning the increased use of non-canonical VPPO is likely attributable to context. Nevertheless, our results simultaneously show that canonical word order was chosen overwhelmingly, and, despite the value of factorial logic, we must take raw preferences, especially so substantial a preference, into account as well. Overall, then, we interpret the judgment results as evidence for both in-situ *and* movement realizations: VPPO is chosen more often under object focus than under PP focus, providing evidence for movement to final position as a focus realization strategy; at the same time, the strong preference for VOPP (and the fact that proportions of VOPP do *not* differ between conditions) provides evidence that focus can be realized in situ.

7.2.3 *Self-paced reading task*

Finally, the results of the self-paced reading task highlight the effects of canonical order: in-situ realizations (VOPP) are processed faster, irrespective of focus context. We note that we saw no interaction between word order and

condition. In principle, even without finding strong contextual licensing, a plausible outcome of this experiment would have been to observe weak contextual licensing—an effect of order overall, with VOPP generally processed faster, but also an interaction in which VPPO was *relatively* faster under object focus. Such a result could indicate that movement of the PP leaving the object in final position was available as a strategy to realize object focus. However, because we did not observe that pattern, we cannot say this task provides support for a traditional view of focus realization in Spanish via movement.

Importantly, this result is not an artifact of general insensitivity to context in online processing. As previously mentioned (see section 2.4), context is incorporated early in online processing and affects overall reading times (Kaiser & Trueswell 2004; Slioussar 2011; Weskott et al. 2011), and our own work shows that these same speakers are able to attend to context in a similar task investigating subject focus (Hoot & Leal 2020).

However, the comparison with our previous work is not completely straightforward, and it might be indicative of the importance of another methodological choice: including canonical word orders. On the one hand, our previous results on subject focus showed evidence of contextual licensing, in which contextually felicitous word orders were processed faster than infelicitous orders. The subject-focus results differ from our present object focus results because here we find no effect of context: canonical VOPP is processed faster

than VPPO word order in both conditions. However, our study on subject focus compared two non-canonical word orders, while the present one included one canonical option. Thus, it is reasonable to hypothesize that the differences between the two are related to canonicity.

What should we make of the differences in the results of the online and offline tasks? One possibility is that offline tasks involve the speakers' metalinguistic knowledge. Online methods such as self-paced reading are generally considered nearer the implicit end of the implicit/explicit spectrum, which discourages participants from relying on explicit metalinguistic knowledge (Kaiser 2016). If we take the differences between the online and offline tasks to represent metalinguistic knowledge, then we would have to come to the conclusion that participants produce and accept movement in the two offline experiments because they have explicit or prescriptive knowledge of focus-final movement. However, we are skeptical of this explanation because, in our experience, focus movement is not well known beyond theoretical linguistics, and it is not commonly a subject of instruction in Spanish language courses. Another possibility may be that SPR, which measures real-time processing, is more susceptible to purely processing-based psycholinguistic factors, such as the accessibility of particular structures. For instance, SPR may be especially vulnerable to the effects of frequency or canonical/unmarked word orders. If so,

better understanding the role such factors play in interpreting SPR studies would help achieve clearer interpretations of these results.

Furthermore, our tasks also differ in terms of the demands imposed on the speakers' cognitive resources. Our acceptability judgment task was offline, thus offering the widest latitude in terms of time: participants had no time restrictions and could use, at least in theory, their explicit metalinguistic knowledge. This possibility could also have been enhanced by our presentation: displaying both sentences at the same time could encourage comparisons that would not necessarily have been prompted by sentences presented in isolation. Our production task, on the other hand, had a time limit and did not allow for task pre-planning—characteristics that fall under the most demanding type of production task according to Ellis' (2005; 2009) hierarchy, which attempts to gauge the demands production tasks place on speakers. While we don't believe the characteristics of our task were too demanding for native speakers, it is possible that priming could be differentially affected by time-limit requirements. To our knowledge, however, priming has been found both in immediate and cumulative response conditions (Hoedemaker & Gordon 2014), so further research would be needed to test that possibility. Finally, our self-paced reading task, while imposing no time limits, is demanding in terms of both time pressure and cognitive resources, since readers must remember the sentence without access to rereading. Our results, while not conclusive in this respect, leave open the possibility that

task demands might affect focus realizations, since the task with the most time pressure, and also most demanding of cognitive resources, was the only one that revealed no evidence for the most infrequent, non-canonical focus realization (namely, focus-final).

7.3 *Asymmetry by argument type*

We have noted that languages differ regarding whether they mark focus on subjects and non-subjects using the same strategies (Zimmermann 2016). The fact that we do not observe effects of the context on reading times for object focus in the SPR task, whereas our previous results indicate that context does matter for processing subject focus, leaves open the possibility of such an asymmetry in Spanish, a possibility endorsed by Skopeteas and Fanselow (2010). Recall from section 2.3 that the existence and nature of this asymmetry is not uncontroversial; some evidence shows that Spanish displays the typological asymmetry that Skopeteas and Fanselow discuss, while at the same time the mainstream syntactic accounts propose the same focus-marking mechanism across constituents. What do our results contribute to this discussion? We can compare our object focus results to previous results on subject focus, both our own and in the literature, in search of the relevant asymmetry. In Table 4, we summarize this comparison. Our production and judgment tasks both find that object focus is preferentially realized in situ, although we found some evidence for movement to final position

as a focus-marking strategy. Directly comparing with previous production results on subject focus, we see that speakers are even more likely to produce focused subjects in situ, while producing comparatively *more* movement instances under object focus.

Table 4: Evidence for subject/object asymmetries in Spanish focus marking by task type.

	Subject Focus	Object Focus	Asymmetry?
Production	With transitive verbs , subjects overwhelmingly produced focus in situ (Gabriel 2010; Kim 2016; Leal, Destruel & Hoot 2018)	Objects produced mostly in situ (Gabriel 2010), but with a larger range of strategies, compared to subjects (Vanrell & Fernández-Soriano 2018).	Limited evidence for a subject/object asymmetry. The limited evidence shows an asymmetry in the opposite direction of the prediction: Objects are more likely to receive explicit marking than subjects (although in-situ focus marking is still most frequent)
	With intransitives , we find variable SV/VS production (Hertel 2003; Roggia 2011)	Overall, more evidence of movement to final position than for subjects. (Feldhausen & Vanrell 2014; 2015; Heidinger 2015) →Present production task (section 4)	

Judgment	<p>Canonical SVO preferred when available</p> <p>(Hoot 2012; Muntendam 2013; Hoot 2016)</p> <p>When there is no object in sentence (intransitives, clitic object pronouns) or canonical word order removed, we find partial evidence of movement to final position</p> <p>(Alonso-Ovalle et al. 2002; Lozano 2006a; 2006b; Domínguez & Arche 2008; de Prada Pérez 2010; Roggia 2011; de Prada Pérez & Pascual y Cabo 2012; Domínguez 2013; Domínguez & Arche 2014; Gupton 2017)</p>	<p>Both in situ and movement preferred equally (Leal Méndez & Slabakova 2011; Hoot 2012; Hoot 2016)</p> <p>Evidence that movement to final position is available (Heidinger 2013; 2015; Hoot 2016; Gómez Soler & Pascual y Cabo 2018)</p> <p>→ Present judgment task (section 5)</p>	<p>Limited evidence for subject/object asymmetry.</p> <p>Arguably, VOPP for object focus was more strongly preferred than SV for subject focus, at least outside canonical SVO, indicating special marking for subjects more so than for objects.</p> <p>However, CANONICITY seems to play a sizeable role.</p>
Processing	<p>Context matters.</p> <p>Subject-final processed much faster in subject focus than object focus, and object-final processed much faster in object focus.</p> <p>Note, though: no canonical order available in this study.</p> <p>(Hoot & Leal 2020)</p>	<p>Context does not matter.</p> <p>VOPP (canonical) processed faster always.</p> <p>→ Present self-paced reading task (section 6)</p>	<p>Limited evidence for subject/object asymmetry.</p> <p>Contextual licensing effects for subject but not objects.</p> <p>(But no canonical order in subject study, meaning that canonical orders might be a factor.)</p>

Comparing our present results to previous literature (Table 4) is complex because a multitude of design-related factors could play a significant role (e.g., whether or not the sentence includes a direct object, whether or not canonical orders are included, etc.). However, we do find evidence for similar strategies (movement and in-situ marking) for both subjects and objects. Overall, then, this comparison reveals no clear asymmetry by argument position. Interestingly,

however, the lack of asymmetry is not the one predicted by the syntactic accounts (that any argument under focus must be equally marked with movement to final position). Instead, the Spanish speakers in our sample pattern more with what happens in English, where no special word order is “required”, regardless of constituent.¹²

At first blush, the results from the SPR seem to offer the clearest case of an asymmetry. Using the same methodology with the same population reported here, our previous research examining the processing of *subject* focus showed evidence that the proper context resulted in felicitous orders being processed faster than non-felicitous orders—that is, it showed contextual licensing—in alignment with previous processing research. In the present experiment, on the other hand, we see no such contextual advantage. This could be taken to indicate a subject/non-subject asymmetry in the spirit of Skopeteas and Fanselow, whereby subjects move to final position under focus, but objects do not. However, a more plausible explanation is that task characteristics are involved: our previous experiment on subject focus did not contrast canonical and non-canonical orders but rather compared the processing of two non-canonical orders (VOS vs. VSO). Thus, the comparison between tasks is not a minimal pair: the question of how

¹² Another possibility that complicates discussion of an asymmetry between arguments in Spanish is the idea that *any* overt subject in Spanish should be understood to be already marked, because non-focal subjects are typically null (Biezma 2014).

canonical orders (SVO) are processed against the non-canonical option that is presented as felicitous in the syntactic literature (VOS) is an open question that future research should address.

Overall, as summarized in Table 4, we do not find strong evidence of an asymmetry of marking between subjects and objects. However, because the tasks in the previous literature differ in multiple dimensions (population, constructions elicited in the prompts, etc.), more research paying crucial attention to oft-overlooked methodological choices is required to determine whether this lack of asymmetry generalizes.

7.4 *Limitations of the present work*

Two limitations of our work involve prosody, which is an important part of focus marking. Although the specific prosodic realizations of focus in Spanish are under debate (Kim & Avelino 2003; Martín Butragueño 2005; Kim 2016), psycholinguistic investigations of focus have consistently shown that speakers not only encode information structure via prosody, but that they also utilize prosodic cues to determine the structure of utterances and to predict what lies ahead in terms of the structuring of information (see Kaiser 2016 for a review).

First, in all three tasks, the prompts were presented in writing, not aurally. For the judgment and SPR tasks, the focus was therefore not marked prosodically, and we could not control what prosody participants may have been mentally

assigning to the sentences as they read them. Clearly this is a limitation which arose as a trade-off for making the tasks more feasible for participants to complete in a reasonable time. Such decisions are common in all research, but we must nonetheless acknowledge that the lack of prosodic information in the sentences being judged and processed is a limitation.

Second, although participants responded aloud in the production task, we did not design it to be suitable for prosodic analysis: while it is possible that speakers used intonation to mark focus, the task is not amenable for this type of analysis. For example, the descriptions of the characters in the video clips contained many voiceless consonants, making examining pitch tracks or using other usual measures of pitch accent difficult. Impressionistically, though, we did not find any of the typical patterns used to mark focus in the production task. That is, in our estimation, participants did not produce a clearly audible stress on the in-situ object when they produced SVOPP word order in response to object focus questions. Instead, most sentences carried a neutral nuclear accent at the end, as is the typical pattern for Spanish. Although this finding is merely descriptive, it should be noted that previous studies do not always find that participants stress in-situ focus (e.g., Kim & Avelino 2003; Ocampo 2003; Labastía 2006; Kim 2016; Vanrell & Fernández-Soriano 2018). This lack of correspondence between focus and stress has not, to our knowledge, been a central consideration in the theoretical literature on focus. Such a finding can potentially be of importance for

the theoretical treatment of information focus: If the lack of correspondence between focus and nuclear stress holds for other investigations, this would constitute a violation of the focus prominence rule—one of the most basic assumptions on the focus-prosody interface.¹³

This leads to obvious questions regarding the viability of syntactic models such as Zubizarreta’s (1998, 2016), which depart from the assumption that “[t]he focused constituent must contain the rhythmically most prominent word” (Zubizarreta 2016: 166). This is the case because data by Gabriel (2010) and many others, including our present and past findings, show that Spanish does not appear to be restricted to this particular realization of nuclear stress. Zubizarreta (2016) has noted that, for dialects such as Argentinean Spanish, A-deaccenting and NS-shift, although “a marked option in Spanish” (Zubizarreta 2016: 183), might be preferable to changes in the word order or to V-initial orders.

The problem is that this preference does not seem to be limited to Argentinean Spanish and, moreover, it also appears to be a poor candidate to be explained via dialectal variation. At the moment, we have evidence that Catalanian Spanish, Mexican Spanish, and Chilean Spanish (as measured by different tasks) behave in very similar ways to Argentinean Spanish—speakers of these varieties prefer what Zubizarreta calls the “marked” option in Spanish and

¹³ We thank an anonymous reviewer for making this point.

avoid what she considers to be the most felicitous one (p-movement). Where does that leave us then? In our view, it is probably time to question whether A-deaccenting and NS-shift are really marked options in Spanish.

8 Conclusion

All three tasks converge on the main findings. First, in terms of object focus within the VP, canonical orders can be exploited for any information-structural purpose while non-canonical orders (i.e., movement) are contextually restricted. Thus we find that a strong version of the mainstream syntactic account cannot account for our data because it precludes the possibility of canonical word orders (SVO for subject focus and VOPP for object focus) when a non-final constituent is in focus. Second, movement strategies are possible, albeit not preferred. Specifically, we find evidence of a relationship between object focus contexts and non-canonical (S)VPPO order. Thus, our data supports a view of information structure in which canonical word order are felicitous in *any* informational focus context, but non-canonical word orders are restricted to contexts in which the constituent they make prominent is also in focus.

Conversely, our data does not support the notion that the context *triggers* or requires a non-canonical word order. In terms of processing, we find that context does not always ameliorate the processing delays incurred by non-canonical word orders. In other words, we do not find evidence of either weak or strong

contextual licensing because canonical VOPP order was always processed faster. Finally, we find no strong evidence that Spanish focus is marked asymmetrically by grammatical function (subjects vs. non-subjects). Although there is a need for more processing research investigating the role of canonical word orders in subject focus (SVO), the lack of asymmetry appears to hold across task types.

In addition to the empirical conclusions and theoretical implications for the study of Spanish focus, we had the opportunity to reflect on methodological choices, which have been noted as a potential reason for discrepancies between “the empirical and theoretical issues regarding focus realization in Romance languages” (Uth & García García 2018: 3). First, we offer corroboration for the notion that triangulation is a desirable practice, as the results from tasks that vary in multiple dimensions can provide both a nuanced view of the data and confidence that the results are not artifacts of a particular task. Second, we find that certain methodological choices may affect results, especially when those choices involve whether or not to include canonical orders. Our findings suggest that canonicity (which is deeply tied to frequency) may play a crucial role in subject focus marking. In fact, across the three tasks, we find evidence that canonical orders can be exploited in a variety of contexts, while non-canonical orders appear to be restricted to specific information-structural situations. Third, we must recognize a multitude of other methodological factors, beyond the scope of those mentioned in this paper, which could affect results. For that reason, these

choices, including selection of fillers, choice of analysis (focusing on overall preferences or differences between conditions), and others, should be detailed in the reporting. Furthermore, and perhaps more importantly, these choices should be considered by analysts when comparing and generalizing across studies.

Abbreviations

DOM = Differential object marking

Supplementary files

Supplementary File 1: Coding system for production task.

Supplementary File 2: Semi-spontaneous speeded oral production task materials.

Available at <https://www.iris-database.org/iris/app/home/detail?id=york%3a938007&ref=search>.

Supplementary File 3: Forced-choice task materials. Available at <https://www.iris-database.org/iris/app/home/detail?id=york%3a938005&ref=search>.

Supplementary File 4: Self-paced reading task materials. Available at <https://www.iris-database.org/iris/app/home/detail?id=york%3a938006&ref=search>.

Funding information

This research was funded by the College of Liberal Arts & Social Sciences and the University Research Council at DePaul University and by a National Science Foundation Doctoral Dissertation Improvement Grant (no. 323229) to Tania Leal.

Acknowledgements

We are grateful to Claudia Chapa Cortés, Graciela Cortés Camarillo, Amira Cámara Cortés, Eduardo Rubio, and Daniel Vázquez Hernández for their help recruiting participants in Merida. We are also thankful for the assistance provided by Carlos González Vergara and Domingo Román when we collected data in Santiago, Chile. Katia Bazan Yitani was also instrumental for our data collection in Puebla, Mexico. Additionally, our sincere thanks to three anonymous reviewers, whose insights improved the article. All errors are our own.

Competing interests

The authors declare that they have no competing interests.

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