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Processing Preferences in an Ergative Language: Evidence from Basque Postnominal Relative Clauses

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Abstract

This study aimed at contributing to a better understanding of relative clause (RC) processing preferences across languages. Although a preference for subject relatives (SR) has been consistently found in various languages, ergative languages where the notion of subjecthood may be called into question have been grossly understudied. This paper addressed the question of whether word order differences can modulate the previously reported object relative (OR) advantage of prenominal RCs in Basque (Carreiras *et al.*, 2010), an ergative language that allows for prenominal as well as postnominal relatives. A self-paced reading experiment with Basque postnominal RCs showed a SR advantage. The reversed asymmetries for prenominals and postnominals in Basque are discussed considering processing strategies related to the ergative nature of Basque.

Keywords: RC processing, postnominal RCs, ergativity, Basque.

1. Introduction

One of the issues psycholinguistic research seeks to understand is what the mechanisms underlying human language processing are, and whether the processing system's strategies are universal or vary cross-linguistically. Subject preference stands as one of those possible candidates for a universal language processing strategy, given the abundant research attesting subject/object asymmetries in relative clause processing across languages. A sizeable body of research has shown that relative clauses (hereafter RCs) with gaps in subject position (subject relatives, SRs) like (1a) are easier to process than those with gaps in object position (object relatives, ORs) like (1b).

(1) a. The reporter [$_{RC}$ who$_i$ e$_i$ attacked the senator] admitted the error.
b. The reporter [$_{RC}$ who$_i$ the senator attacked e$_i$] admitted the error.

The bulk of research on subject/object asymmetries has focused on head-initial languages with postnominal RCs, in which the RC containing the gap follows its head noun. A preference for SRs has been consistently found, inter alia, in English (Caplan, Vijayan, Kuperberg, West, Waters, Greve, & Dale, 2001; King & Just, 1991; King & Kutas, 1995; Traxler, Morris, & Seely, 2002;), German (Mecklinger, Schriefers, Steinhauer, & Friederici, 1995; Schriefers, Friederici, & Kühn, 1995), French (Cohen & Mehler, 1996; Frauenfelder, Segui, & Mehler, 1980; Holmes & O'Regan, 1981), Dutch (Frazier, 1987; Mak, Vonk, & Schriefers, 2002, 2006), Brazilian Portuguese (Gouvea, 2003), and Spanish (Betancort, Carreiras, & Sturt, 2009).

It has not been until the last decade when head-final relative constructions have become a target to study whether and how headedness impacts upon the directionality of RC processing preferences. Unlike head-initial or postnominal RCs, head-final or prenominal relative constructions appear preceding the head noun. Head position yields opposed orderings of filler (head noun) and gap: whereas in postnominal RCs forward filler-gap dependencies are created, prenominal RCs present backward gap-filler dependencies, as the syntactic gap precedes the head noun in the RC construction. The crucial question is whether the same subject/object processing asymmetries hold even in those languages in which head-position is reversed. Prenominal RCs have primarily been studied in East Asian languages like Chinese, Japanese, and Korean. In such languages there is usually no relativizer marking the beginning of the RC, thus triggering a temporary structural ambiguity between a main clause and an embedded clause reading for a sentence-initial clause.

A consistent subject advantage has been found in Japanese both in behavioral experiments (Ishizuka, 2005; Ishizuka, Nakatani, & Gibson, 2003; Miyamoto & Nakamura, 2003) and electrophysiological studies (Ueno & Garnsey, 2008). An alternative explanation for the SR advantage might be that ORs have greater structural ambiguity, and therefore, are more likely to be misread as a main clause. Arguing along these lines, Ishizuka, Nakatani, and Gibson (2006) presented an exception to the previous subject advantage processing pattern, as ORs were reported to be more easily processed after a contextual manipulation that reduced the main clause/RC temporary ambiguity. However, their results have been called into question for several experimental reasons, and indeed, they were not later replicated in follow-up studies (refer to Kwon, Lee, Gordon, Kluender, & Polinsky, 2010 for a detailed discussion of the results). Results for the RC processing asymmetries in Korean are unequivocal: both self-paced reading (Kwon, Polinsky, & Kluender, 2006), eye-tracking (Kwon *et al.,* 2010), and ERP experiments (Kwon, Kluender, Kutas, & Polinsky, under revision) have confirmed a subject preference, both with and without supportive contexts. Contrary to the latter, the status of RC processing in Chinese is somewhat controversial, with some studies reporting an OR preference (Gibson & Wu, 2011; Hsiao & Gibson, 2003; Lin & Garnsey, 2007), and others finding a SR processing preference (Lin & Bever, 2006a,b; Kuo & Vasishth, 2006; Yang, Perfetti, & Liu, 2010).

Leaving aside the unresolved status of RC processing in Chinese, the results on subject/object asymmetries so far seem to tip the scales in favor of a general or universal subject preference in RC processing, despite the cross-linguistic variation regarding head position in RC constructions. This universal preference for subjects was first brought into scene by Keenan and Comrie (1977) in the *Noun Phrase Accessibility Hierarchy* (hereafter, AH). The AH was proposed to account for the cross-linguistic variation regarding the relativizability of different NP positions. Based on data from about fifty languages, they proposed the universal implicational scale in (2), according to which «subjects» are the highest in the hierarchy, and are thus the easiest to relativize.

(2) Subject > Object > Indirect Object > Oblique > Genitives > Object of Comparison

The authors further claimed that the AH has a psychological rationale, so that the hierarchy «directly reflects the psychological ease of comprehension» (Keenan & Comrie, 1977: 88). This way, NPs relativized at low positions are harder to understand than NP positions that are higher in the hierarchy. RCs with subject gaps like (1a) are thus hypothesized to be easier to process than RCs with object gaps like (1b) across languages and irrespective of head position.

Nonetheless, a claim based on universal processing preferences needs support from a wide variety of languages. Ergative languages, around 25% of the world languages (Dixon, 1994), have received little attention in the language processing literature. Ergative languages mark intransitive subjects and objects of transitive verbs with absolutive case, differently from subjects of transitive predicates, which bear ergative case (Dixon, 1994), as illustrated in example (3) from Basque.

(3) a. Irakasle-a-k ikasle-a-ø zoriondu du eskola-n.
Teacher-sg-Erg student-sg-Abs congratulated has school-at.
«The teacher congratulated the student at school».
b. Ikasle-a-ø berandu iritsi da eskola-ra.
Student-sg-Abs late arrived is school-to.
«The student arrived late to school».

Ergativity can prove to be a really fruitful and enlightening pathway for further studying the validity of a universal subject preference. All the languages mentioned so far are nominative-accusative, and thus align sentential arguments in such a way that subjects are nominative no matter the transitivity of the verb, and objects always bear accusative case. By contrast, ergative languages allow us to differentiate between a preference for grammatical functions (subject vs. object) and a preference for case (ergative vs. absolutive). In order to provide a full picture of universal processing strategies in general and RC processing asymmetries in particular, the compelling question to be answered is whether a subject preference still holds in languages like Basque, where subjects are not unequivocally marked with a single case marking. If a general preference for subject extractions were to be a universal processing mechanism, the subject/object processing asymmetry in an ergative language should go in the same direction as in nominative-accusative languages.

2. Subject/object asymmetries in an ergative language

In a recent study of processing asymmetries in prenominal RCs, Carreiras, Duñabeitia, Vergara, De la Cruz-Pavía, and Laka (2010) conducted two self-paced reading and one ERP experiment in Basque, a head-final ergative language. Basque is an SOV language but word order variation is allowed and very frequent. Basque is a three-way pro-drop language, allowing not only for null subjects, but also for object omission (both direct and indirect). This is the same as to say that Basque can drop arguments bearing ergative, absolutive, and dative case. Prenominal RCs have no Wh element heading the relative construction, just as in Chinese, Japanese and Korean. The complementizer *-(e)n* attached to the subordinate verb in clause-final position marks the clause as a RC. Note that the properties of Basque give rise to a quite common temporary ambiguity in head-final RCs: A prenominal RC can be initially interpreted as a main clause with dropped or scrambled arguments, at least until the parser reaches the verb to which the RC marker is attached to.

A morphological ambiguity arises when the ending *-ak* is attached to an NP, which can be interpreted either as singular ergative (i.e., subject of transitives) or as plural absolutive (i.e., subject of intransitives or object of transitives). When interpreted as singular ergative, the sequence consists of *-a*, the singular determiner *the*$_{sg}$, and -k, the ergative case marking. When interpreted as absolutive plural, its morphological structure corresponds to the single morpheme *-ak*, the plural determiner *the*$_{pl}$, since absolutive case has no overt marking. This way, both *irakasleak* («teacher») and *ikasleak* («student») in (4) are ambiguous in the two conditions until the inflected verb *dira*/*ditu* is reached. In the case of a subject relative like (4a), the processor necessarily has to (re)interpret the first NP as the subject of a transitive when facing the verb *dira* («are»). The opposite is true for (4b), in which the verb *ditu* («has») disambiguates the sentence towards an OR interpretation.

(4) a. (SR)
Irakasleak aipatu dituen ikasleak lagunak ditu orain.
[e$_i$ irakasle-ak aipatu ditu-en] ikasle-a-k$_i$ lagun-ak ditu orain.
[e$_i$ teacher-pl mentioned has-Comp] student-sg-erg$_i$ friend-pl has now.
«The student that mentioned the teachers has friends now.»
b. (OR)
Irakasleak aipatu dituen ikasleak lagunak dira orain.
[irakasle-a-k e$_i$ aipatu ditu-en] ikasle-ak$_i$ lagun-ak dira orain.
[teacher-sg-erg e$_i$ mentioned has-Comp] student-pl$_i$ friend-pl are now.
«The students that the teacher mentioned are friends now.»

Taking advantage of this morphological ambiguity, Carreiras *et al*. (2010) constructed pairs of sentences containing a subject and an object relative clause each. As a result, sentences in each pair were ambiguous between a subject and an object relative reading until the inflected verb (*dira*/*ditu*) in the main clause was reached. Prenominal ORs were read faster than SRs at the disambiguating region, and SRs produced larger amplitudes in the P600 window, just after reading the disambiguating word *ditu*. The results pointed to a disadvantage for prenominal SRs, thus disconfirming universal processing mechanisms based on a general preference for subject gaps in RCs. Overall, neither a general saliency of subjects nor the head noun position alone offer a comprehensible general picture of subject/object asymmetries in RC processing across languages. In the event of the results obtained for Basque, processing of RCs appears to be case sensitive. Ergativity is indeed a plausible candidate, but how exactly the ergative nature of Basque is affecting RC processing is not clear-cut. One could hypothesize that in ergative languages like Basque the processing system prefers the morphological case of the gapped element to be absolutive over ergative. The processing disadvantage for ergative DPs/NPs is usually explained in terms of markedness. Morphological unmarkedness is believed to provide a processing advantage in language, such that unmarked cases are preferred in processing and order of acquisition over marked ones (Otsuka, 2006). This was already suggested for Basque by Carreiras *et al*. (2010) and Laka (2013). Ergative case is the marked case in Basque, whereas the absolutive case is the unmarked. This becomes clear from the *-k* ending for ergative, contrasted with the zero marking for absolutive. In nominative-accusative languages, by contrast, the nominative case is the unmarked case, as opposed to the markedness of accusative case, thereby predicting a subject (i.e., nominative) preference. Morphological markedness could thus explain why ORs are preferred in an ergative language like Basque but dispreferred in nominative-accusative languages irrespective of head noun position.

However, the RC processing asymmetries in Basque might also stem from processing preferences made for a sentence-initial NP. It is generally assumed that especially in verb final languages, where the verb is usually not available until the very end of the sentence, comprehenders rely much on morphological information such as case marking on NPs to interpret *Who-did-what-to-whom* (Bornkessel & Schlesewsky, 2006; Yamashita, 1997). Yet, morphology sometimes does not help in the form-to-meaning mapping. Cross-linguistic evidence suggests that, upon encountering an ambigous sentence-initial argument, the language processsing system shows a tendency to interpret the initial NP as the subject of the sentence (De Vincenzi, 1991; Demiral, Schlesewsky, & Bornkessel-Schlesewsky, 2008; Schriefers, Friederici, & Kühn, 1995; Wang, Schlesewsky, Bickel, & Bornkessel-Schlesewsky, 2009). Again, given ergativity, the question arises as to whether initial interpretive parsing decisions are universal, respond to grammatical function, or are instead sensitive to case form. In view of the object advantage found for prenominal RC processing by Carreiras *et al*. (2010), one could argue that Basque speakers preferably interpret an initial ambiguous NP as ergative-marked rather than as absolutive-marked. Let us consider this possibility in greater depth. When confronted with an ambigous *-ak* ending in initial position like in (4), participants could interpret it as:

(i) a transitive singular subject (ergative marked)
(ii) an intransitive plural subject (absolutive marked)
(iii) a plural object (absolutive marked)

The authors found that the main verb was read faster when it disambiguated the sentence towards an OR. These processing preferences suggest that the disambiguation towards a SR required a more costly reanalysis than the OR reading, which in turn implies that the parser initially committed to a singular ergative interpretation of the initial NP rather than the plural aboslutive interpretation. Should initial choices favor a plural absolutive interpretation like in (ii) or (iii), a garden-path effect would be expected at the disambiguating verb in the OR condition. Yet, no revision effects were found at the prenominal OR condition.

This same preference in ergative languages is explained in terms of dependent and independent case marking by Polinsky, Gómez-Gallo, Graft, and Kravtchenko (2011) for Avar. In an ergative language, the dependent case is ergative, since it can usually only appear in structures where the absolutive is present. The opposite is true for accusative languages, where the dependent case corresponds to the accusative. RCs with an object absolutive gap should show a processing advantage in ergative languages, because, once the parser has encountered an initial ergative marked (dependent) argument, the gap in the absolutive position should be easier to project than upon encountering an initial absolutive case-marked argument.

These two processing forces, namely a preference for unmarked (absolutive) gaps together with a preference to interpret an initial ambiguous NP as ergative, would both favor an OR advantage for Basque prenominal RCs like (4): upon reading the first word *irakasleak*, participants possibly interpreted it as singular ergative, and thereby, as a transitive subject of a main clause (Frazier, 1987); later in the sentence subjects identified they were reading a RC, and consequently posited an absolutive gap; these incremental interpretive choices created a garden-path at the disambiguating verb window in the SR condition but no revision was required in the OR condition. The critical issue here is whether these processing strategies related to ergativity work in tandem, or rather, one is overwhelmingly more powerful than the other. Unfortunately, this is something we cannot answer based on results from Basque prenominal RCs like (4).

3. Processing postnominal Relative Clauses in Basque: a self paced reading experiment

Crucially, Basque also has postnominal RCs. Unlike prenominals, postnominals are headed by a *wh*-pronoun, and they are preferably interpreted as appositive or non-restrictive. Though mainly used in high registers, they have been used in written Basque since the 16th century (Oyharçabal, 2003), and are currently used in standard language. The study of postnominal RC processing in Basque provides a unique path to examine in a single language the challenges word order differences in RC constructions push to the language processing system. This matter is rendered particularly interesting by the fact that morphological markedness and sentence-initial processing choices pull in opposite directions in the case of Basque postnominal RCs. Consider the sentences in (5), which exhibit the postnominal versions of the SR and OR in (4).

(5) a. (SR)
Ikasleak, zeinak irakasleak aipatu baititu, lagunak ditu orain.
Ikasle-a-k$_i$, [zein-a-k$_i$ e$_i$ irakasle-ak aipatu bait-ditu,] lagun-ak ditu orain.
Student-sg-erg$_i$, [who-sg-erg$_i$ e$_i$ teacher-pl mentioned Comp-has,] friend-pl has now.
«The student, who mentioned the teachers, has friends now.»
b. (OR)
Ikasleak, zeinak irakasleak aipatu baititu, lagunak dira orain.
Ikasle-ak$_i$, [zein-ak$_i$ irakasle-a-k e$_i$ aipatu bait-ditu,] lagun-ak dira orain.
Student-pl$_i$, [who-pl$_i$ teacher-sg-erg e$_i$ mentioned Comp-has,] friend-pl are now.
«The students, who mentioned the teacher, are friends now.»

A preference for morphologically unmarked gaps would predict the same processing asymmetry in prenominal as well as postnominal RCs in Basque, under which an OR advantage is expected. Sentence-initial processing choices favoring a singular ergative interpretation over a plural absolutive one would instead predict a SR advantage for postnominal RCs, contrary to what is expected for prenominals given the same processing strategy. Here we report a self-paced reading experiment with subject- or ergative-gapped and object or absolutive-gapped postnominal RCs in Basque, such as those in (5a) and (5b) respectively. Should we find a reading slowdown at the critical disambiguating verb in the OR condition, this would indicate a processing advantage for SRs, and consequently, an ergative preference for initial ambiguous NPs would be argued to be the main factor affecting RC processing asymmetries. If, by contrast, an OR preference holds even with postnominal RCs, then markedness-based accounts of RC processing would gain force.

3.1. *Methods and materials*

Participants

Fourty students at the University of the Basque Country (UPV/EHU) participated in the experiment as paid volunteers after giving informed consent (36 female; age range 18-31, mean age 19.72). All were native speakers of Basque with normal or corrected-to-normal vision and no history of language-related deficits. A linguistic background questionnaire attested to the participants' proficiency, age of acquisition, and exposure to Basque.

MATERIALS

Twenty-six experimental sets like (5) were constructed, each with two RC conditions: a postnominal SR and a postnominal OR. RCs were fully ambiguous between a SR and an OR reading until the main verb (REGION 7, the critical region). A post-critical word was included to avoid effects associated with sentence-final integration processes (Aaronson & Ferres, 1984). Except for the penultimate word, the two versions in each pair involved the same words displayed in the same order, so lexical frequency was controlled overall. The disambiguating verbs (*ditu -has-* and *dira -are-*) were controlled for length (four letters long each), frequency (3.25 and 3.81 respectively), and orthographic neighborhood (15 and 16 orthographic neighbors, respectively) using E-Hitz (Perea, Urkia, Davis, Agirre, Laseka, & Carreiras, 2006). In order to control for case (mis)match effects (Sauerland & Gibson, 1998), the case of the *wh*-pronoun and the antecedent NP matched in each condition: ORs all had the antecedent NP and the *wh*-pronoun in plural absolutive *(-ak*), whereas SRs had both in singular ergative *(-a-k)* (both being formally indistinguishable).

Table 2

Experimental sample set

Condition	Example
(a) SR	Ikasleak, zeinak irakasleak aipatu baititu, lagunak ditu orain. Ikasle-a-k, [zein-a-k irakasle-ak aipatu bait-ditu], lagun-ak ditu orain Student-sg-S, [who-sg-S_1 teacher-pl mentioned COMP-has], friend-pl has now. «The student, who mentioned the teacher, has friends now.»
(b) OR	Ikasleak, zeinak irakasleak aipatu baititu, lagunak dira orain. Ikasle-ak_1, [zein-ak irakasle-a-k aipatu bait-ditu], lagun-ak dira orain. Student-pl_1, [who_1 teacher-sg-S mentioned COMP-has], friend-pl are now. «The students, who the teacher mentioned, are friends now».

Participants were randomly assigned to one out of two counterbalanced lists, such that each read an equal number of SRs and ORs, but only one version of each pair. Experimental items were interspersed among 74 unambiguous fillers of similar length, some of which contained postnominal RCs. Overall, around 25% of the sentences were ambiguous RCs. Trial order repetition effects were avoided randomizing the presentation order for each participant.

PLAUSIBILITY SURVEY

To guarantee that reading materials were all equally plausible as SRs or ORs, thirty-six Basque informants (who did not participate in the experiment) rated a total of seventy-two sentences on a scale ranging from 1 (totally implausible) to 7 (totally plausible) in a separate off-line norming survey. Forty-eight postnominal SR and OR pairs were constructed and intermixed with twenty-four filler sentences of various linguistic structures —with and without postnominal RCs— and of various degrees of plausibility. Experimental items were divided in two counterbalanced lists, and each of the lists was then divided in two lists that differed in order of presentation.

The twenty-two sentence pairs with the largest within-pair differences were discarded. Ratings for the remaining twenty-six pairs did not differ significantly ($p > .5$), indicating that the

RC heads in the experimental sentences were equally plausible as the subject (mean rating 5.10; ± .53) or the object (mean rating 5.18; ± .42) of the RCs.

Procedure

A word-by-word self-paced-reading experiment was conducted using the moving window paradigm (Just, Carpenter, & Wooley, 1982). Participants were tested individually in a silent and correctly illuminated room. Stimuli presentation and data collection was performed with Linger (version 2.94) software by Doug Rohde (see http://tedlab.mit.edu/~dr/Linger/) on a computer with a 15.4 inch CRT monitor. The reading pace was set by the participants' key pressing. Participants were initially presented with a computer screen filled with a string of dashes and spaces. Each time the space bar was pressed one word was unmasked, keeping the rest masked. Reading times (henceforth, RTs) were measured as time lapses between the display of each word and the key press. After each experimental sentence a yes/no comprehension question was displayed all at once on a new screen. Participants pressed «A» if they believed the answer was *yes*, and «L» otherwise. Correct answers were balanced, and only feedback to incorrect answers was provided. Written instructions and a practice session preceded the experimental trial. Sentences were presented in a single line using a 25-point courier font. Participants had breaks every twenty-five items. The whole session lasted about 20 minutes.

3.2. *Data Analysis and Results*

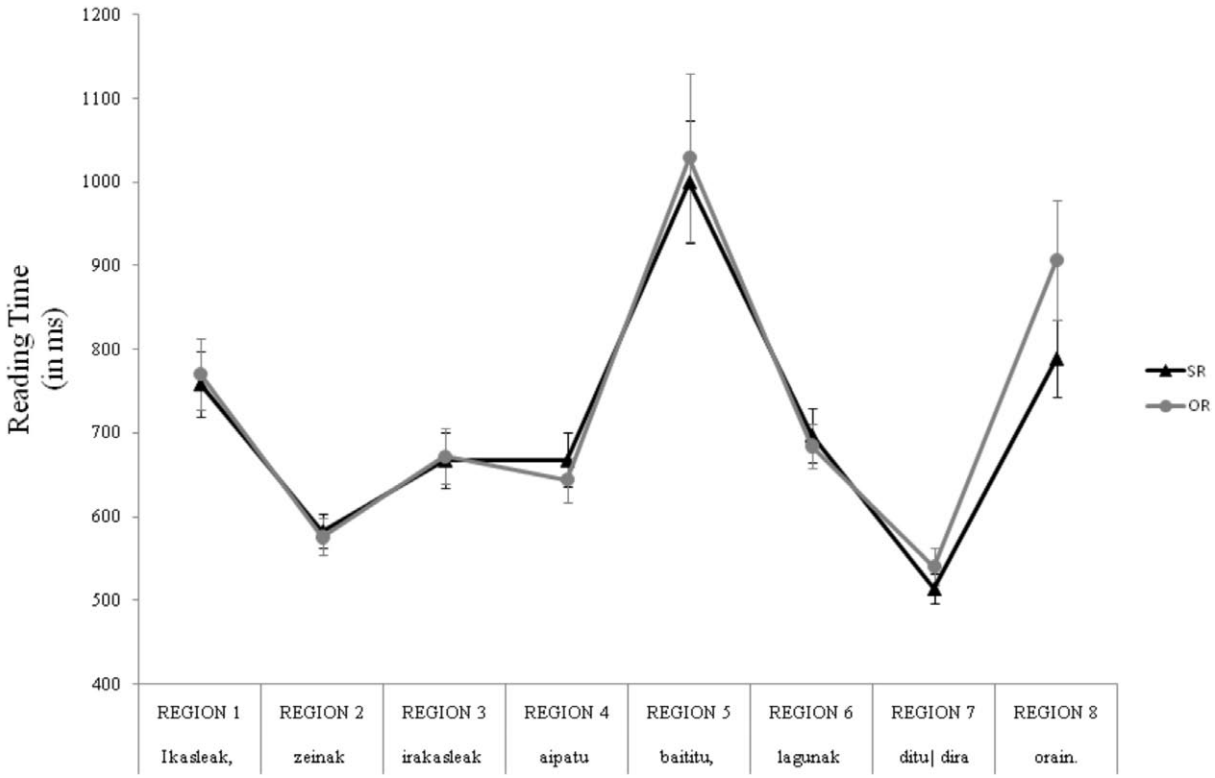
Participants' accuracy in comprehension questions and RTs for each of the eight regions was recorded. All RTs above or below 2.5 standard deviations from the mean were discarded for the analysis. Overall, less than 3% of the data was excluded. Mean RTs for each region were entered into pairwise *t*-tests for the factor RC type (SR vs. OR). Statistical analyses were performed over participants' and items' data (reported as t_1 and t_2, respectively).

Comprehension performance

A main effect of RC type was found exclusively in the analysis by participants: the mean comprehension accuracy was higher for SRs than for ORs (85.96% and 80.77% respectively), $t_1(39) = 2.63, p<.02, t_2(24) = .48, p>.60$.

Reading Times

Figure 1 below plots the mean RTs per region for SR and OR clauses, together with the corresponding standard error bars. Results suggest a processing advantage for postnominal SRs over ORs: reading times were shorter for the SR condition at the critical disambiguating region (REGION 7) $t_1(39) = 2.03, p < .05, t_2(24) = 1.86, p = .07$, and this effect persisted into the post-verbal region (REGION 8), where the effect was largest, $t_1(39) = 2.18, p < .04, t_2(24) = 2.39, p < .03$. It is frequent in self-paced reading experiments that an effect is found in the region immediately following the critical word, especially when the critical word is short as is the case with the disambiguating verbs *dira/ditu* (Mitchell, 1984). As expected, statistical comparisons on the previous regions revealed no significant difference between subject and object RCs (all *t*s < 1.1 and all *p*s>.30).



4. Discussion

Here we report a self-paced reading experiment with Basque postnominal RCs, in which reading times showed a significant effect of relative clause type: SRs were read faster than ORs. The current study aimed at contributing to a better understanding of RC processing preferences across languages, and addressed the question of whether word order modulates the OR advantage found for prenominal RCs in Basque, an ergative and head-final language. To this end, a self-paced reading experiment evaluated how the position of the RC relative to the head noun might influence the RC processing asymmetries in Basque, a language that allows not only for prenominal but also for postnominal RCs. The results showed opposed subject and object processing asymmetries for prenominal and postnominal RCs in Basque.

The data cannot be explained just appealing to a general advantage for unmarked (i.e., absolutive) case-marking of the gapped element, for this processing strategy would equally favor an OR advantage both in prenominal as well as in postnominal Basque RCs. Instead, the SR advantage of postnominals is compatible with the idea that Basque speakers preferably interpret a sentence-initial argument as ergative rather than as absolutive. As suggested by Laka (2013), this can be understood as a strong subject-first preference in ergative languages, as ergative case unequivocally marks subjects.

This is not to say that a preference for unmarkedness should be ruled out based on the current data from Basque postnominal RCs. In this respect, future work should investigate processing asymmetry effects with RCs containing unambiguous initial arguments, and thus determine whether the same subject/object asymmetries obtain for prenominal RCs in the absence of garden-

path effects provoked by initial disambiguation choices. If in that case the OR advantage for prenominal RCs becomes diluted, psycholinguistic research should start considering that the same processing asymmetries could be extrapolated to simple declarative sentences, and that consequently, a simple clause might be equally complex as regards processing when there is competition between two animate arguments. This is, of course, something that should be further explored.

Appendix: experimental ítems

1. Ikasleak, zeinak irakasleak aipatu baititu, lagunak dira/ditu orain.

   «The students, who the teacher mentioned, are friends now». (OR)
   «The student, who mentioned the teachers, has friends now». (SR)

2. Zuzentzaileak, zeinak itzultzaileak kontratatu baititu, profesionalak dira/ditu dirudienez.

   «The reviewers, who the translator hired, are professionals apparently». (OR)
   «The reviewer, who hired the translators, has professionals apparently». (SR)

3. Ilobak, zeinak osabak maite baititu, medikuak dira/ditu ospitalean.

   «The nephews, who their uncle loves, are doctors at the hospital». (OR)
   «The nephew, who loves his uncle, has doctors at hospital». (SR)

4. Gaixoak, zeinak medikuak bisitatu baititu, adiskideak dira/ditu gaztetandik.

   «The patients, who the doctor visited, are friends since they were young». (OR)
   «The patient, who visited the doctors, has friends since s/he was young». (SR)

5. Notarioak, zeinak abokatuak lasaitu baititu, kolaboratzaileak dira/ditu oraindik.

   «The solicitors, who the lawyer calmed down, are still collaborators». (OR)
   «The solicitor, who calmed down the lawyers, still has collaborators». (SR)

6. Artistak, zeinak antzezleak aurkeztu baititu, amoranteak dira/ditu aspalditik.

   «The artists, who the actor introduced, have been lovers for a long time». (OR)
   «The artist, who introduced the actors, has lovers since long ago». (SR)

7. Gizonak, zeinak emakumeak laztandu baititu, maitaleak dira/ditu diotenez.

   «The men, who the woman caressed, are lovers, so they say». (OR)
   «The man, who caressed the women, has lovers, so they say». (SR)

8. Neskatxak, zeinak andreak apaindu baititu, laguntzaileak dira/ditu ileapaindegian.

   «The girls, to whom the woman did the haircuts, are assistants at the hairdresser's». (OR)
   «The girl, who did the haircut to the women, has assistants at the hairdresser's». (SR)

9. Informatikariak, zeinak teknikariak ezagutu baititu, langileak dira/ditu enpresan.

   «The computer technicians, who the engineer met, are employees at the company». (OR)
   «The computer technician, who met the engineers, has employees at the company». (SR)

10. Kantariak, zeinak dantzariak ikusi baititu, irakasleak dira/ditu eskolan.

    «The singers, who the dancer saw, are teachers at school». (OR)
    «The singer, who saw the dancers, has teachers at school». (SR)

11. Bizilagunak, zeinak etorkinak salbatu baititu, pisukideak dira/ditu orain.

    «The neighbours, who the immigrant saved, are flat mates now». (OR)
    «The neighbour, who saved the immigrants, has flat mates now». (SR)

12. Psikiatrak, zeinak psikologoak kritikatu baititu, lankideak dira/ditu ospitalean.

    «The psychiatrists, who the psychologist criticized, are colleagues at the hospital». (OR)
    «The psychiatrist, who criticized the psychologists, has colleagues at the hospital». (SR)

13. Suhiltzaileak, zeinak poliziak babestu baititu, anaiak dira/ditu nonbait.

    «The firefighters, who the policeman protected, are brothers apparently». (OR)
    «The firefighter, who protected the policemen, has brothers apparently». (SR)

14. Haurrak, zeinak mutilak engainatu baititu, bizilagunak dira/ditu ziurrenik.

    «The children, who the boy fooled, are neighbors probably». (OR)
    «The child, who fooled the boys, has neighbors probably». (SR)

15. Zinegileak, zeinak aktoreak txalotu baititu, jarraitzaileak dira/ditu iaztik.

    «The directors, who the actor praised, are followers since last year». (OR)
    «The director, who praised the actors, has followers since last year». (SR)

16. Zientzialariak, zeinak ikertzaileak nahi baititu, ikasleak dira/ditu unibertsitatean.

    «The scientists, who the researcher wants, are students at the university». (OR)
    «The scientist, who wants researchers, has students at the university». (SR)

17. Jokalariak, zeinak atezainak bultzatu baititu, aurkakoak dira/ditu futbol-zelaian.

    «The players, who the goalkeeper pushed, are opponents on the soccer field». (OR)
    «The player, who pushed the goalkeepers, has opponents on the soccer field». (SR)

18. Saltzaileak, zeinak erosleak kontsolatu baititu, senitartekoak dira/ditu agian.

    «The sellers, who the buyer comforted, are relatives maybe». (OR)
    «The seller, who comforted the buyers, has relatives maybe». (SR)

19. Palestinarrak, zeinak israeldarrak tirokatu baititu, ezagunak dira/ditu bestaldean.

    «The Palestinians, who the Israeli shot, are well-known on the other side». (OR)
    «The Palestinian, who shot the Israelis, has acquaintances on the other side». (SR)

20. Agureak, zeinak gazteak zaindu baititu, senideak dira/ditu beharbada.

    «The elderly men, for whom the young person took care, are relatives maybe». (OR)
    «The elderly man, who took care of the young people, has relatives maybe». (SR)

21. Mutikoak, zeinak neskatilak izutu baititu, begiratzaileak dira/ditu udalekuetan.

    «The boys, who the girl scared, are tutors at the summer camp». (OR)
    «The boy, who scared the girls, has tutors at the summer camp». (SR)

22. Neskak, zeinak mutilak lotsatu baititu, lagunak dira/ditu benetan.

    «The girls, who the boy embarrassed, are friends really». (OR)
    «The girl, who embarrassed the boys, has friends really». (SR)

23. Umeak, zeinak lehengusinak zipriztindu baititu, anai-arrebak dira/ditu antza.

    «The children, who their cousin splashed (with water), are siblings seemingly». (OR)
    «The child, who splashed his/her cousins (with water), has siblings seemingly». (SR)

24. Zuzendariak, zeinak arduradunak salatu baititu, entzuleak dira/ditu prentsaurrekoan.

    «The directors, who the manager accussed, are listeners at the press conference». (OR)
    «The director, who accussed the managers, has listeners at the press conference». (SR)

25. Manifestatzaileak, zeinak bakezaleak besarkatu baititu, bazkideak dira/ditu erakundean.

    «The demonstrators, who the pacifist hugged, are members at the organization». (OR)
    «The demonstrator, who hugged the pacifists, has members at the organization». (SR)

26. Idazleak, zeinak kazetariak hunkitu baititu, irakurleak dira/ditu jakina.

    «The writers, who the journalist moved, are readers of course». (OR)
    «The writer, who moved the journalists, has readers of course». (SR)

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