ON THE POSITION OF SUBJECTS IN SPANISH PERIPHRASES: SUBJECTHOOD LEFT AND RIGHT[*]

Diego Gabriel Krivochen & Luis García Fernández
University of Reading & Universidad Complutense de Madrid

ABSTRACT. Chains of auxiliary verbs in Spanish allow for the reconceptualization of well-known grammatical problems under the light of understudied structures. In this paper we will deal with issues regarding the position of subjects in declarative and interrogative sentences featuring auxiliary chains. It will become immediately evident that the dichotomy between pre- and post-verbal subjects results inadequate to provide adequate characterisations for the Spanish cases, in contrast to the situation in English. This is so because post-verbal subjects may appear, *a priori*, to the right of *each* auxiliary in a chain. These new data, which have received little attention, constitute a challenge for standard hypotheses about the position of subjects in Spanish.

Keywords. auxiliary chains; subjects; niching; auxiliary inversion

RESUMEN. Las secuencias de verbos auxiliares en español permiten plantearse problemas gramaticales bien conocidos en el marco de estructuras poco estudiadas. En este trabajo abordamos la cuestión de la posición de los sujetos en oraciones declarativas e interrogativas en estas cadenas de verbos auxiliares. Es inmediatamente evidente que la dicotomía entre sujetos preverbales y posverbales no es adecuada para tratar los casos del español, en contraste con lo que sucede en inglés, puesto que los sujetos pospuestos pueden aparecer *a priori* a la derecha de cada verbo auxiliar en una cadena. Estos nuevos datos, muy poco tratados en la bibliografía, son un desafío para las hipótesis estándar sobre la posición del sujeto en español.

Palabras clave. cadenas de verbos auxiliares; sujetos; nichos; inversión

1. Introduction

The possibility of having sequences of auxiliary verbs creates so-called *auxiliary chains* (RAE-ASALE, 2009; Bravo et al., 2015 and related works). In these chains there are positions between auxiliaries and between the last auxiliary and the main verb, where non-verbal elements can appear. Following Ross (1991), we will refer to these positions as *niches*. In the following example, we have marked niches with square brackets:

(1)   Podrían [] haber [] estado [] siendo [] interrogados.
        Could [] have [] been [] being [] questioned

Niches can host a variety of categories, including NPs (like *los sospechosos*, 'the suspects') adverbs (like *ya*, 'already') and floating quantifiers (like *todos*, 'all'); we can provide some examples of *niching* in (2):

---

(2)   a. ¿Podrían [los acusados] haber [] estado [los acusados] siendo []
interrogados?
b. Los sospechosos podrían [ya] haber [] estado [ya] siendo [] interrogados.
c. Los sospechosos podrían [todos] haber [] estado [todos] siendo [todos]
interrogados

The aim of this work is to analyse the behaviour of *niches* with respect to the possibility of hosting subjects. In turn, this will motivate a revision of the traditional notions of preverbal and postverbal subjects.

The paper is organised as follows: Section 2 presents the empirical data, and introduces some basic descriptive machinery. Section 3 digs further into the structure of auxiliary chains in Spanish and English and focuses on the empirical consequences of assuming the same theoretical machinery for both. This is pursued in Section 4, where we go in detail into the mechanisms whereby auxiliary inversion is obtained in sentences featuring chains of auxiliary verbs. After an analysis of the shortcomings of mainstream approaches to auxiliary inversion which extend the mechanisms developed for English to languages like Spanish, we will introduce (in Section 5) our own proposal about the internal structure of auxiliary chains in terms of local domains: this will have direct consequences for a theory of inversion, but also – crucially- for niching. Since the focus of the present work is the position of subjects in niches, we will close the paper in Section 6 by analysing how the properties of the NP subjects themselves (specifically, definiteness) restrict the syntactic positions where they can appear.

2. The data

It is a well-known fact that in certain structures Spanish subjects can surface at the right of the lexical verb. We can illustrate this with a *wh*-interrogative and an exclamative sentence in (3a) and (3b) respectively, where the verb appears italicised and the subject, in bold:

(3)   a. ¿Con quién *salió* **Ana** ayer?
¿With who(m) go-out$_{3SgPastPerf}$ Ana yesterday?
'Who did Ana go out with yesterday?'
b. ¡Qué tonto *es* **mi hermano**!
How foolish is my brother!
'How foolish my brother is!'

Verbal periphrases (also known as *auxiliary verb constructions*, see e.g. Anderson, 2006), and particularly *auxiliary chains* raise questions about the linear and structural position of subjects which have been overlooked in the literature. These questions are related to the fact that a post-verbal subject (that is: a subject which appears after a verbal head, be it a lexical verb or an auxiliary) in Spanish can occupy more than one position in stark contrast to the state of affairs in English, where only one position is available:

(4)   a. *¿Podría* **Juan** *estar siendo* interrogado?
Could$_{3SgPres}$ J. be being questioned?
b. *¿Podría estar* **Juan** *siendo* interrogado?
Could$_{3SgPres}$ be J. being questioned?

(5)   a. *Could* **John** *be being* questioned?
        b. **Could be** **John** *being* questioned?

Note that both Spanish examples are well-formed (and these two do not exhaust the grammatical possibilities, as we will see shortly), whereas only (5a) is well-formed in English.

It is necessary at this point to provide definitions for the positional terms we will make use of in the remainder of this paper. Descriptively, and as a preliminary distinction (which, we will see, requires further refinement), we can find three types of positions for a subject NP:

(i) Leftwards position

Juan podría ser acusado del crimen.
Juan may₃SgPres be accused of-the crime
'J. may be accused of the crime'

(ii) Intermediate position:

¿Podría **Juan** ser acusado del crimen? / ¿Podría ser **Juan** acusado del crimen?
Could₃SgPres J. be accused of the crime? / Could₃SgPres be J. accused of the crime?
'Could J. be accused of the crime?'

(iii) Rightwards position

¿Podría ser acusado **Juan** del crimen? / ¿Podría ser acusado del crimen **Juan**?
Could be accused J. of the crime? / Could be accused of the crime J.?
'Could J. be accused of the crime?'

We will see in §6 that as a matter of fact the category of rightwards subjects (i.e., NP subjects in the rightwards position) needs to be revised, since there are structural differences between postverbal NPs adjacent to the verb and postverbal NPs which appear after adjoined or extraposed phrases. Furthermore, differences pertain not only to the structural position these NPs occupy, but also to the properties of the NPs themselves (bare vs. definite NPs).

As we have anticipated, the structural complexity of auxiliary chains allows us to shed new light on the concepts of **leftwards subject**, **intermediate subject**, and **rightwards subject**. This preliminary tripartite distinction already configures an improvement over the dichotomy *preverbal* vs. *postverbal* subject. We will provide empirical evidence to support the idea that the notion of *preverbal subject* is not precise enough to account for the Spanish facts and that, within the class of *postverbal subjects*, further structural distinctions need to be made.

A priori, we could be tempted to say that given an auxiliary chain in Spanish, an **intermediate** subject may appear after each auxiliary, as schematised in (6):

(6)   Los sospechosos podrían [] estar [] siendo [] interrogados.
        SUBJECT **AUX1** *SUBJECT* **AUX2** *SUBJECT* **AUX3** *SUBJECT* **LEXV**

In (6) there are four positions where, in principle, we would expect to be able to find a subject. Recall that the subject that does not have any auxiliary at its left will be referred to as **leftwards subject**, any subject that appears at the right of an auxiliary will be referred to as an **intermediate subject**, and any subject that appears at the right of the lexical verb will be referred to as a **rightwards subject**; in this case, with some further distinctions pending to be made. It is essential to point out now that we need to distinguish between two kinds of post-verbal subjects in terms of their inherent properties and the structural positions that they can therefore occupy. We can diagram the general scenario, descriptively, as follows:

Los sospechosos	**podrían**	*los sospechosos*	**estar**	*los sospechosos*	**siendo**	*los sospechosos*	**interrogados**	*los sospechosos*
SUBJECT	**AUX1**	*SUBJECT*	**AUX2**	*SUBJECT*	**AUX3**	*SUBJECT*	**LEXICAL V**	*SUBJECT*
LEFTWARDS SUBJECT		INTERMEDIATE SUBJECT		INTERMEDIATE SUBJECT		INTERMEDIATE SUBJECT		RIGHTWARDS SUBJECT
PREPOSED SUBJECT		POSTPOSED SUBJECT		POSTPOSED SUBJECT		POSTPOSED SUBJECT		POSTPOSED SUBJECT

The situation seems to be the following: in structures in which subject-auxiliary inversion is either necessary or possible, the subject may surface in more than a single linear position, which in turn points towards a variety of structural positions (in García Fernández & Krivochen, 2019 we have proposed that such variety is best captured by means of multidominance than via movement transformations, such that the NP subject is the daughter node of each auxiliary that licenses a structural position for it). The first aspect we would like to call the reader's attention to is that the positions of **leftwards** and **intermediate subjects** seem to form a natural class in terms of the kinds of subjects they can host. Note that the definite subject *Juan* may appear in the leftmost position in a declarative clause and in intermediate positions in inversion-triggering contexts:

(7)   a. **Juan** *podría estar* haciendo eso a Pedro (**leftwards subject**)
J. could be doing that to P.
b. ¿A quién *podría* **Juan** *estar* haciendo eso? (**intermediate subject 1**)
c. ¿A quién *podría estar* **Juan** haciendo eso? (**intermediate subject 2**)
d. ¿A quién *podría estar* haciendo **Juan** eso? (**rightwards subject 1**)
e. ¿A quién *podría estar* haciendo eso **Juan**? (**rightwards subject 2**)
To who(m) could be doing that J.?
'To whom could J. be doing that?'

In contrast to the **leftwards** and **intermediate** positions, the **rightwards** position is the only one that may host bare NP subjects, as shown in (8):

(8)   a. *¿Por dónde podría **agua** haber estado entrando?
Through where could water have been entering?
b. *¿Por dónde podría haber **agua** estado entrando?
c. *¿Por dónde podría haber estado **agua** entrando?
d. ¿Por dónde podría haber estado entrando **agua**?
'Where could water have been entering through?'

Leaving (8b) aside, whose ungrammaticality is not related only to the bare NP, but also to the fact that (as we will argue in detail) there seems to be *no niche* where to

insert a subject, it is clear that (8a) and (8c) are ungrammatical. We can assert, then, that bare NPs may only be **rightwards subjects**, and cannot appear in niches. In this context, it is relevant to insist in aspects of the distribution of bare and definite NPs in a different construction, where subject-auxiliary inversion is optional: relative clauses. Let us focus on the contrast between the distribution of subjects in the paradigms below[1]:

(9)   a. La puerta secreta por donde **Juan** podría estar entrando en la biblioteca.
          The door secret through which J. could be entering in the library
          'The secret door through which J. could be entering the library'
          b. %La puerta secreta por donde podría **Juan** estar entrando en la biblioteca.
          c. %La puerta secreta por donde podría estar **Juan** entrando en la biblioteca.
          d. La puerta secreta por donde podría estar entrando **Juan** en la biblioteca.
(10)   a. *El agujero de la tubería por donde **agua** podría estar saliendo.
          The hole in the plumbing through where water could be coming-out
          'The hole in the plumbing through where water could be coming out'
          b. *El agujero de la tubería por donde podría **agua** estar saliendo agua.
          c. *El agujero de la tubería por donde podría estar **agua** saliendo.
          d. El agujero de la tubería por donde podría estar saliendo **agua**.

From a descriptive standpoint, the scenario seems to be the following: an NP that can appear as a **leftwards subject** can also appear in niches (i.e., as an **intermediate subject**) and as a **rightwards subject**. In contrast, an NP that cannot appear in the **leftwards** position cannot appear in **intermediate positions** either, and is relegated to the **rightwards** area only (see particularly examples (39-40) and the discussion that follows them).

In the following section we will introduce some aspects of the syntax of auxiliary chains, and revise existing accounts of subject-auxiliary inversion. We will see that current models cannot adequately account for the empirical facts we have presented in this section pertaining to inversion and the positions of intermediate subjects. With this in mind, we will propose an alternative account of *niches* under a 'mixed computation' viewpoint (independently motivated) which has been argued in previous works to provide adequate structural descriptions for Spanish auxiliary chains. Finally, we will address the heterogeneity of **rightwards subjects**, and propose an account of their different positions in the phrase marker.

3. Auxiliary chains and niches in a comparative perspective: Spanish vs. English
Like Spanish, English features chains of auxiliary verbs, and they have been the object of several analyses from different theoretical perspectives (see Ross, 1969, 1991; Bach, 1983; Schmerling, 1983; Quirk et al., 1985; Sag et al., 2018; to mention but a few). Auxiliary chains have quite the pedigree in English syntax, for they were used in Chomsky (1957) and related works to argue for the necessity of a kind of rule that exceeded the possibilities of phrase structure to account for 'crossing dependencies' in morphological selection (such that in *have been walking*, *have* selects *–en* and *be* selects *–ing*). In Spanish grammatical studies, the relatively central role that periphrastic verbal constructions have played does not, however, extend to auxiliary chains, which have remained relatively understudied.

---

[1] It must be pointed out that sentences (9' b, c) are considered ungrammatical by some speakers (among which one of the authors), while grammatical by others (among which, the other author). Our use of % reflects that fact.

It is essential to bear in mind that English auxiliary chains are much more restricted tan Spanish chains, for only a single order is allowed, namely that in (11):

(11)   MODAL + PERFECTIVE + PROGRESSIVE + PASSIVE

English chains also feature *syntactic niches* (in the sense of Ross, 1991), which can host a variety of elements, like floating quantifiers (as in (12)) and adverbs (as in (13), below):

(12)   a. They might [] have [] been [] being [] questioned.
       b. They might [all] have [all] been [all] being [all] questioned

A comparative analysis of niches shows that the internal cohesion of auxiliary chains varies in Spanish and English: in English, the closer we are to the lexical verb, the more there are restrictions for the insertion of material (Ross, 1991: 460): in his view, the relations between elements get progressively stronger the closer we get to the lexical VP, and additional syntactic positions are not licensed without heavy restrictions. As we move rightwards on an auxiliary chain, there is an increase in 'verbiness', that is, the amount of properties shared between auxiliaries and lexical verbs (Ross, 1991: 462) On the contrary, finite auxiliaries and auxiliaries that – because of their lack of non-finite forms- cannot appear as complements to other auxiliaries (the class of English *modals*) are the ones that allow for the insertion of material (quantifiers, adverbs, etc.) more freely. We can illustrate this using an example taken from Ross (1991: 460), where capitals indicate nuclear stress:

(13)   Q:- Was only MILDRED being followed?
       A: a. ??No, ALSO TERRY must have been being followed
       b. No, TERRY ALSO must have been being followed
       c. No, TERRY must ALSO have been being followed
       d. No, TERRY must have ALSO been being followed
       e. ??No, TERRY must have been ALSO being followed
       f. *No, TERRY must have been being ALSO followed

We see that there is a relevant interaction between syntax and phonology, insofar as the element that appears in intermediate niches must always receive nuclear stress.

It is also important to note that English presents additional restrictions related not only to the position of the niche in the auxiliary chain, but also to the element that we are attempting to insert. Thus, floating quantifiers (*all*, *most…*) present less restrictions than adverbs like *ever* or *also* and restrictors like *only*. The lack of non-finite forms in English modals (they are '*the least verby of all auxiliaries*', in Ross' terms), which restricts them to the first position in auxiliary chains in matrix sentences (see McCawley, 1975 for further discussion), puts heavy constraints on the combinatory possibilities in English auxiliary chains, and gives them a much more homogeneous character that their Spanish counterparts.

A crucial phenomenon for purposes of understanding the structure of auxiliary chains in Spanish and English is the position of so-called 'inverted subjects'. A subject NP can appear at the right-hand side of the lexical verb due to a number of reasons (not all obligatory), including syntactic, semantic, and information-structure motivations (see, e.g., Leonetti, to appear; López, 2009). In English, however, the inverted subject NP must necessarily appear after the first auxiliary verb in *wh-*

interrogatives; that is: inverted subjects appear only in the first of the positions we have labelled **intermediate positions** and never in the **rightwards position**. Let us see an example, taken from Quirk et al. (1985): *He might have been being questioned.* In the formation of interrogatives, the required subject-auxiliary inversion (which is obligatory, as attested by (14a)) can only be satisfied by a subject NP at the right of the first auxiliary of a chain (which Quirk et al. 1985: 79 refer to as the 'operator' in the chain):

(14)   a. *Why **he** might have been being questioned?
         b. Why might **he** have been being questioned?
         c. *Why might have **he** been being questioned?
         d. *Why might have been **he** being questioned?
         e. *Why might have been being **he** questioned?
         f. *Why might have been being questioned **he**?

Quirk et al. (1985: 79) further elaborate on the structure of sentences involving auxiliary verbs:

> *A more important division, in accounting for the relation between different sentence types, is that between OPERATOR and PREDICATION* [the lexical VP] *as two subdivisions of the predicate. Not all simple statements have an operator, but when it occurs, it is normally the word which directly follows the subject. Provisionally defined as the first or only auxiliary* [or *do-support* should it be required] […], *it has a crucial role in the formation of questions*

In English, *be* can function as both a main verb and an operator in polar interrogatives in all varieties, and *have* only in British varieties of English (as in (15c-d)):

(15)   a. John *is* an idiot
         b. *Is* John an idiot?
         c. You *have* some money
         d. *Have* you any money?

This situation strongly contrasts with what we find in Spanish, where an inverted subject can appear in more than a single **Intermediate** position, which we will distinguish with numbers solely for clarity purposes:

(16)   a. *¿Cuándo **ellos** podrían haber estado siendo interrogados? **Leftwards position**
            when they could have been being questioned?
         b. ¿Cuándo podrían **ellos** haber estado siendo interrogados? **Intermediate position 1**
         c. *¿Cuándo podrían haber **ellos** estado siendo interrogados? **Intermediate position 2**
         d. ¿Cuándo podrían haber estado **ellos** siendo interrogados? **Intermediate position 3**
         e. ¿Cuándo podrían haber estado siendo **ellos** interrogados? **Intermediate position 4**
         f. ¿Cuándo podrían haber estado siendo interrogados **ellos**? **Rightwards position**
         'When could they have been being questioned?'

Descriptively, we can say that both English and Spanish feature obligatory subject-auxiliary inversion in interrogative sentences, seeing as how both (14a) and (16a) are ungrammatical. In both languages, the subject can surface at the right of the first auxiliary, as shown in (14b) and (16b); however, in English this is the only grammatical option, whereas in Spanish there are further grammatical positions for

subjects. Which positions these are, and whether they are available for all kinds of subjects will be the focus of our discussion.

4. Operator movement and auxiliary inversion

As anticipated above, we will deal with the interaction between auxiliary inversion and the position of subjects, in the light of contrasts like (17).
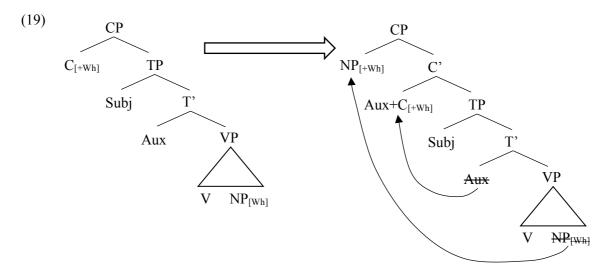
(17)   a. Juan puede tener que estar trabajando toda la tarde
        J. may have to be working all the afternoon
        'It is possible that John has to be working all afternoon'
        b. *Puede Juan tener que estar trabajando toda la tarde
        c. ¿Puede Juan tener que estar trabajando toda la tarde?

What (17b) illustrates is that in declarative sentences it is not possible to have the subject immediately after the first auxiliary (in this case, *poder*), but as soon as we change the illocutionary force of the sentence, as in (17c), that position becomes available. From a syntactic perspective, it seems plausible to claim that interrogation modifies the structural description of the sentence in such a way that either a previously unavailable position becomes available or a position that was available but not semantically licensed becomes licensed. The former option pertains to syntax only, the latter, to what we could refer to as the syntax-semantics-pragmatics interface. In either case, the mechanisms by means of which interrogation yields auxiliary fronting (such that we get the paradigm (17a) and (17c), both of which are well-formed sentences) need to be made explicit. To this end, we will now present the two logical options to model subject-auxiliary inversion in traditional transformationally-enhanced Phrase Structure models (Government and Binding and the Minimalist Program); these models assume that the property of displacement (encompassing all 'filler-gap' dependencies) is to be captured by means of movement rules[2]. In order to make our case, we will proceed from simple periphrastic auxiliary constructions to complex chains. We will begin with a simple periphrastic construction Aux + V, and as the trigger for subject-auxiliary inversion, let us take *wh*-movement. The basic transformational analysis that we will assume relates (18a) to (18b) by means of *wh-movement* (of *qué* to Spec-CP) and T-to-C movement (of *podría* to C):
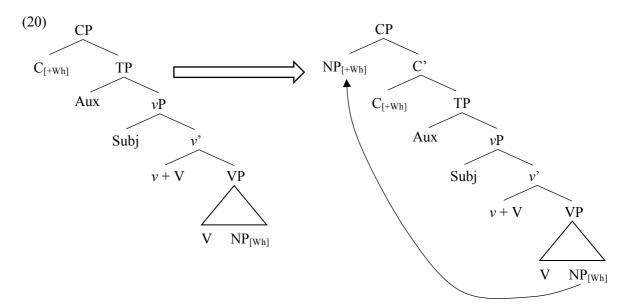
(18)   a. Juan podría pensar de nosotros qué
        b. ¿Qué podría Juan ~~podría~~ pensar ~~qué~~ de nosotros?

We need to get into the details of the transformational accounts in order to assess their applicability to the cases presented in this paper. The first approach, which we will refer to as the **Two Movement Hypothesis** (TMH) to inversion assumes that subjects are invariably in Spec-TP (be it for EPP reasons or for Case reasons, that is inconsequential to the present discussion), *wh*-phrases move to Spec-CP, and T moves to C thus extending the phrase marker (as per Chomsky's 1995: 190 *extension condition*); this yields the VS output. This is illustrated as follows:

---

[2] It is worth pointing out that this is by no means a necessity: *displacement*, like *extraction* (e.g., Postal, 1998: 1), can be used descriptively without committing the linguist to a particular theoretical account (e.g., Move-α, slash features, specifications in c-structure, constructions, etc.). See, e.g., Sag (2010) for ample discussion about filler-gap dependencies in English from a non-transformational standpoint.

(19)

CP → C$_{[+Wh]}$ TP [Subj, T' [Aux, VP [V NP$_{[Wh]}$]]] ⟹ CP [NP$_{[+Wh]}$ C' [Aux+C$_{[+Wh]}$ TP [Subj T' [~~Aux~~ VP [V ~~NP$_{[Wh]}$~~]]]]]

The second approach, which we will refer as the **Single Movement Hypothesis** (SMH) assumes that the subject NP remains at Spec-*v*P or VP depending on lexical properties of the verb, and that the only overtly moved constituent is the *wh*-phrase (e.g., Barbosa, 2001 and references therein). Spec-TP need not be filled in Spanish, in contrast to English[3] (the so-called Extended Projection Principle, see Chomsky, 1982: 9-10). Furthermore, linear order offers no evidence for T-to-C movement since the base-generated order is already VS; deciding whether T moves to C requires additional argumentation which at this point is orthogonal to our case (but see Gazdar, 1981: 161 for discussion). We can diagram the situation as follows:

(20)

CP → C$_{[+Wh]}$ TP [Aux, *v*P [Subj, *v*' [*v* + V, VP [V NP$_{[Wh]}$]]]] ⟹ CP [NP$_{[+Wh]}$ C' [C$_{[+Wh]}$ TP [Aux *v*P [Subj *v*' [*v* + V VP [V NP$_{[Wh]}$]]]]]]

It must be pointed out that the Aux-to-C movement approach does have some merit in the description of the English facts (although it is not free from problems; see

---

[3] The situation with unaccusatives is revealing at this respect, as we can see in the well-known paradigm (i-iv)

    i)   Llegaron tres hombres
           Arrive$_{3PlPast}$ three men
    ii)   *Arrived three men
    iii)   Three men arrived (Spec-TP is filled by a lexical NP)
    iv)   There arrived three men (Spec-TP is filled by an expletive pronoun)

Gazdar et al., 1982; Sag et al., 2018 for extensive discussion). This is so because, as has been observed extensively, English auxiliary inversion can only target the highest auxiliary in a chain (see (14a-f) above). Therefore, proposing head-to-head movement of the highest auxiliary in the chain to C does the job. However, in languages where more complex objects can undergo fronting this approach turns out to be inadequate, both too restrictive and too lax for purposes of different processes. The idea that each auxiliary constitutes an independent syntactic head and moves of its own accord without paying attention to what other auxiliaries in the chain do also results inadequate. Should we accept this hypothesis, in order to generate all possible word orders there is no way around proposing *ad hoc* movements and constraints over movement, such that one, two, or three auxiliaries move leftwards depending on the word order that we want to obtain: the descriptive and explanatory power of this approach is null. If, on the other hand, the auxiliary chain raises as a whole, we need to be able to insert the subject in intermediate positions. This means that very similar sequences need to receive vastly different derivational accounts.

Despite their applicability to English, both approaches sketched so far present esentially the same problem when applied to our Spanish data: they cannot account for *intermediate* positions (they were not designed to do so). Let us see why. We may begin by considering a case in which we have *two* auxiliaries modifying the lexical verb: (21a) below is a declarative sentence featuring a chain of two auxiliaries, and (21b), (21c), and (21d) are the corresponding *wh*-interrogatives illustrating all possible subject positions:

(21) a. **Juan** puede estar trabajando en la biblioteca
J. may be working in the library
'It is possible that J. is working in the library'
b. ¿Dónde puede **Juan** estar trabajando?
Where may J. be working
'Where is it possible that J. is working?'
c. ¿Dónde puede estar **Juan** trabajando?
Where may be J. working?
d. ¿Dónde puede estar trabajando **Juan**?
Where may be working J.?

The essential datum for our case is (21c), we beg the reader to bear it in mind. Above we briefly presented two accounts for subject-auxiliary inversion in simple Aux-V constructions based on proposals made for English, now we will make our case explicit about why neither account is adequate for Spanish.

Recall that the **TMH** assumes *two* instances of movement, (i) the *wh*-phrase moves to Spec-CP and (ii) the auxiliary moves from T to C thus surfacing linearly at the left of the subject, which would be structurally located in Spec-TP. Let us see an example:

(22) a. Juan puede trabajar allí
J. may work there
b. ¿Dónde$_i$ **Juan** *puede* trabajar t_i? → *Dónde* moves to Spec-CP
c. ¿Dónde$_i$ *puede$_j$* **Juan** t_j trabajar t_i? → *Puede* moves to C

The **SMH** assumes a *single instance of movement* (*wh*-phrase to Spec-CP), since the subject remains in a lower position, within the VoiceP / *v*P domain (see Zubizarreta, 1992; Bok-Bennema, 1992; Olarrea, 1998) because it is considered

unnecessary for a Nominative subject in Spanish to be in Spec-TP. If Spanish is a V-to-T language (i.e., if the lexical verb moves to a position outside and higher than the *v*P), and a further projection is assumed for the auxiliary (say, ModP; see e.g. Camacho, 2006), this approach predicts the generation of the following string:[4]

(23)   ¿Dónde puede trabajar **Juan**? → *Dónde* moves to Spec-CP

So far, so good. But things get much more complicated when we aim to provide a proper structural description for sentences like (21 b-d), where we find two auxiliaries and a lexical verb. The hypotheses considered above generate the two following sentences respectively, *and only those*:

(24)   a. ¿Dónde$_i$ puede$_j$ **Juan** t_j estar trabajando t_i? → *Wh*-movement to Spec-CP; head-to-head movement of *puede* to C
        b. ¿Dónde puede estar trabajando **Juan**? → *Dónde* moves to Spec-CP, the subject remains *in situ* in *v*P / VoiceP

Observe that neither hypothesis provides a natural account of (21c), *¿Dónde puede estar Juan trabajando?* The **TMH** cannot explain (21c) because in this example the subject is not leftwards enough. In contrast, the single-movement hypothesis fails to explain (21c) because the subject is not rightwards enough.

It could be adduced that both hypotheses could account for (21c) at the cost of adding some *ad hoc* condition. For example, the two-movement hypothesis could incorporate a subsequent movement of *estar* to a higher position; the single-movement hypothesis could similarly be adjusted by keeping the gerund *trabajando* in a structurally low position. At this point it is necessary to consider a more complex chain, as in (25):

(25)   a. **Juan** tendría que poder estar entrando por la puerta principal.
        J. should be able to be entering through the door main
        'J. should be able to be entering through the main door'
        b. ¿Por dónde tendría **Juan** que poder estar entrando?
        c. ¿Por dónde tendría que poder **Juan** estar entrando?
        d. ¿Por dónde tendría que poder estar **Juan** entrando?
        e. ¿Por dónde tendría que poder estar entrando **Juan**?
        'Where should J. have to be entering?'

Note that as we increase the number of auxiliaries, the number of niches also increases, and there are more available positions for intermediate subjects. In turn, the number of additional assumptions and operations that both of the aforementioned hypotheses would need in order to account for the data also increases but without empirical payoff. Let us analyse why.

By the same token as in the discussion above, transformational models (i.e., any theory of the grammar comprising a phrase structure component and a –possibly unary- set of *reordering operations*, in the sense of Ross, 1967: 427) can account for
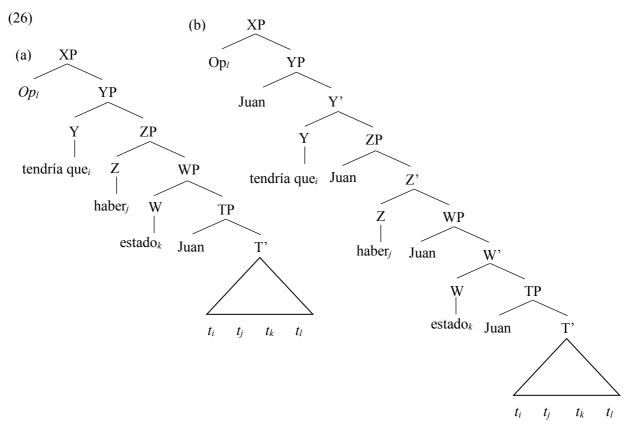
---

[4] It may be worth noting that, between (22b-c) and (23), by much (23) sounds more natural and is used more frequently in casual conversation; the pattern that emerges is entirely consistent with Escandell Vidal's (2019) observations that some grammatical forms –which are acquired through formal education and whose uses are 'passive'- are almost exclusively associated to specific registers and genres

auxiliary chain fronting in one of two ways, which constitute sub-cases of the **TMH** in that there is subject-auxiliary inversion in addition to *wh*-operator movement:

(i)   **THMa**: An auxiliary chain is fronted via head-to-head movement, where each auxiliary is an independent syntactic head. In this account, there has to be as many available functional heads as auxiliaries will move upwards; since we have seen that the number of auxiliaries in a chain can vary (from 1 to about 5), it is necessary to stipulate the number of functional projections *a priori*.

(ii)   **THMb**: An auxiliary chain is fronted as a complex syntactic object (XP movement to Spec-position). In this version, analogously to the previous one, it is necessary to resort to *ad hoc* stipulations to determine the number of auxiliaries that will raise and therefore appear at the left of the subject.

Let us analyse both options in detail, in order to prove that a transformational solution within a monotonic phrase structure model (be it X-bar theory or Merge-based Minimalism) cannot adequately account for the data in the case of auxiliary chains either, building on the case made above for simple periphrases.

At this point, the following issue arises: if the members of the auxiliary chain are fronted individually, via head-to-head movement (the specific labels of the target projections for this movement are inconsequential, the problem we point out pertains to the *strong* generative power of the system), as in **THMa**, we are faced with one of the following inevitable problems: either (i) there are no structural positions for intermediate subjects (as diagrammed in (26a) below) or (ii) it is predicted that, if auxiliaries move to complete functional projections above TP, each of which should (by the axioms of X-bar theory) license a Specifier position, therefore *each auxiliary should licence an internal subject position*, including the highest auxiliary (as in (26b) below). Since our focus is set on the dynamics of Aux-Subject interactions, in (26) we will simply assume that some inversion-triggering operator (*Op*) binding a variable within TP has moved to the left periphery, without specifying the nature of that operator (it may be a *wh*-phrase, a non-finite verbal form targeted by *verum focus* fronting –as in (27b) below-, etc.):
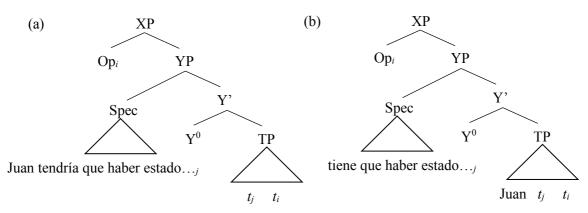
(26)

(a)

(b)

The representations in (26), derived via head-to-head movement (whereby each auxiliary in a chain is an independent syntactic head and consequently moves to independent functional heads in the left periphery) are empirically inadequate for two alternative reasons:

(i)   Either because there are no structural positions available for *intermediate subjects* (as in (26a)) if auxiliaries move via head movement to functional heads which do not project a specifier position (as in a *bare phrase structure*-based model), or

(ii) Because if each functional projection does indeed project a specifier position (as in (26b)), then this predicts that each and every auxiliary should be able to license an *intermediate subject* (see also Sportiche, 1988 for a related argument pertaining to floating quantifiers in declarative clauses), crucially *including the highest auxiliary* and auxiliaries like *ser* and *haber*, contrary to fact as we can see in (27) (see also Torrego, 1984):

(27) a. *¿Qué$_i$ Juan tendría que haber estado estudiando t_i?
What J. have to$_{COND}$ have been studying?
'What would J. have to have been studying?'
b. *Muriéndose$_i$ Juan tendría que haber estado t_i para no ir a esa fiesta.
Dying J. have to$_{COND}$ have been to not go to that party
'J. would have to be dying not to go to that party'
c. *¿Cuándo ha Juan llegado t_i?
When has J. arrived?

Therefore, due to problems of both under- and over-generation, both sub-hypotheses **TMHa** and **TMHb** are rejected on empirical grounds.

Moving each auxiliary to the left periphery is not the only theoretically possible option, however. If the whole auxiliary chain is a single syntactic object, as follows from the proposals in Gómez Torrego 1999: 3346, Guéron y Hoekstra 1988: 36-37, among others (which we have called **TMHb**), then we have in turn two options: (i) either the first auxiliary takes with it the subject, which is at the leftmost position, or (ii) the subject remains in a lower position (Spec-TP / Spec-vP; how low depends on partially independent assumptions), and the auxiliary chain moves independently. Let us diagram both options:

(28)

(a)
XP
Op$_i$ YP
Spec Y'
Y^0 TP
Juan tendría que haber estado…$_j$
t_j t_i

(b)
XP
Op$_i$ YP
Spec Y'
Y^0 TP
tiene que haber estado…$_j$
Juan t_j t_i

Evidently, (28a) –where the whole TP gets raised- must be excluded since it generates an ungrammatical order, with the subject immediately adjacent to the operator (see (27a-b)). The alternative in (28b) generates a possible order, with the subject at the right of the auxiliary chain; however, it is overly restrictive –thus, insufficient- insofar as it cannot account for *internal subjects*. There is no available position in (28b) for the subject *Juan* to appear, say, after *tener que*, which is perfectly possible as we can see in (29):

(29) a. Muriéndose tendría Juan que haber estado para no ir a esa fiesta.
Dying have J. to have been to not go to that party
J. would have had to have been dying not to go to that party
b. ¿Qué tendría Juan que haber estado robando para que lo encarcelen?
What have J. to have been stealing for that CL put-in-jail$_{3Pl}$
What would J. had to have been stealing to be put in jail?

In summary: in a transformational framework, it seems to be necessary to have auxiliaries move to a position above the subject in order to avoid *Op-subject* adjacency (**Qué Juan tendría que…?*). However, assuming that auxiliary chains are internally opaque objects, or single modifiers, turns out to be empirically inadequate. We need to avoid the subject being raised together with the chain, as in (28a), but leaving it *in situ*, be it in a low position (vP / VoiceP) or a higher position (TP) is overly restrictive as only one of several possible orders can be generated. It is worth pointing out that, both for reasons of word order and logical *scope*, the auxiliary chain must occupy a structural position above the eventive domain (i.e., VP / vP).

If, alternatively (*as per* the **SMH**), the subject stays within the vP / VP domain (without moving to Spec-TP), then it should *not* be able to surface at the left of the lexical verb (under a V-to-T view); in this case the theory turns out to be inadequately too restrictive in the light of examples like (30):

(30)   ¿Qué podría Juan haber estado haciendo?
        What could$_{3SgCond}$ J. have been doing?
        'What could J. have been doing?'

In (30), the subject appears at the right of two auxiliaries (*haber* and *estado*) and the lexical verb itself (*haciendo*). If, as defended in Barbosa (2001), Uribe-Etxebarría (1992), Zubizarreta (2001), among others, Spanish subjects do not raise to Spec-T in interrogative sentences, then it is impossible to generate the sequence in (30) unless further movements are assumed, without proper theoretical or empirical justification. For example, rightwards movement of *haber estado haciendo* to position it after the *v*P/VP located subject, yielding a representation like (31).

(31) ¿[CP Qué [C podría [TP ~~podría~~ ~~haber estado~~ [*v*P [*v*P Juan ~~haciendo qué~~] haber estado haciendo]?

But *podría* needs to be treated differently, because it appears at the left of the subject. We would need to assume a leftwards movement followed by a rightwards movement just to keep the subject in Spec-*v*P (or, in any case, lower that C and at the right of *podría*, but at the left of *haber estado haciendo*) If rightwards movements are banned due to further stipulations (as done in Kayne, 1994 and subsequent works), the problem just becomes harder to solve. Not least because there doesn't seem to be a reliable systematic procedure to decide which link of an auxiliary chain (or which set of links) moves left and which right other than a *post hoc* analysis depending on how things end up linearly ordered.

The analysis of niches in Spanish auxiliary chains, thus, seems to call for a different conceptualization of the problem, whereby we can define local domains within chains for purposes of syntactic operations and semantic interpretation.

5. Non-uniformity in auxiliary chains: its consequences for *niching*

5.1 Niching in Spanish auxiliary chains: the case of <haber + participle>
Within the theoretical framework proposed in Bravo et al. (2015) and subsequent works, the availability of niches in auxiliary chains in not determined *a priori* based on a 'one-size-fits-all' phrasal template; rather, it depends on the structural and semantic relations *between* the specific members of a given auxiliary chain. In English, as we have seen, the relative order of auxiliaries is fixed (such that the only possible order is MODAL + PERFECTIVE + PROGRESSIVE + PASSIVE; see Bach, 1983; Quirk et al., 1985; Schmerling, 1983; Sag et al., 2018, and references therein); this contrasts with the situation in Spanish, where it is possible to permute the order of auxiliaries in a chain, within certain limits. The structure that is assumed for auxiliary chains has direct consequences for the predicted availability of niches within those chains. Note that, if niches were independent from the specific auxiliaries that occupy a certain position in a chain, then we should have a universal set of positions common to all languages, contrary to fact. The possibility of inserting material within a chain of auxiliaries depends on at least (a) the position of the niche in the chain with respect to the lexical verb (as pointed out by Ross, 1991), but also (b) the relations *between* auxiliaries: some auxiliaries can only be analysed as *functional modifiers* of lexical heads. This latter point is the *locus* of cross-linguistic variation, and even within a grammatical system we cannot state or assume that all modifiers have the same syntactic properties in what pertains to *niching*. Specifically,

Spanish displays a strong asymmetry between perfective *haber* and the rest of what Bravo et al. (2015) and subsequent works called *functional auxiliaries*, including <*ser* + participle> , <*ir a* + infinitive> and <*estar* + gerund>. Let us get into this issue in some more detail. Consider the following paradigm of polar interrogative sentences:

(32)   a. *¿Ha Juan llamado?
        Has J. called?
        b. ¿Fue Juan condenado?
        Was J. condemned?
        c. ¿Va Juan a ser condenado?
        Will J. be condemned?
        d. ¿Está Juan siendo razonable?
        Is J. being reasonable?

All examples in (32) feature a lexical verb (*llamado*, *condenado*), with one or two functional modifiers (*haber*, *ir a*, *ser, estar*). However, there is a stark contrast between the ungrammaticality of (32a), with perfective *haber* and the grammaticality and acceptability of (32b-d), which feature passive *ser*, temporal *ir a*, and progressive *estar* respectively. At this point, we can legitimately probe further into the question of whether there is a niche after *haber* at all, or whether we are in the presence of a situation analogous to what Escandell-Vidal (2019) observes for the synthetic future in Spanish, many of whose uses correspond to heavily restricted contexts and genres, and which do not reflect a speaker's *active* grammatical competence (see also Moreno Cabrera, 2013 for related discussion). The issue is therefore one of productivity and systematicity, both of which pertain to the possibility of making *generalisations* in the theory of the grammar. For our present intents and purposes, let us focus on the question of whether perfective *haber* licenses a niche where an NP subject could be host.

RAE-ASALE (2009: §23.1k), in the context of a discussion about the 'relative syntactic independence' between 'components' in compound tenses (pretérito perfecto compuesto '*ha trabajado*', pretérito pluscuamperfecto '*había trabajado*', pretérito anterior '*hubo trabajado*', etc.) proposes the following as an argument in favour of such 'relative independence':

> [es posible la] *intercalación de algún elemento entre auxiliar y participio: adverbios (*las casas con las que habíamos **siempre** soñado*), el sujeto de la construcción (*lo que hubiera **yo** hecho*) u otros elementos, a veces con sintaxis forzada por el metro o la rima, como en* […] con él se hubiera **al fuego** encomendado *(Barahona, Lágrimas).* (NGLE, §23.1k, highlighting ours)

This point is somewhat developed further later on, with 'intercalación' being replaced by 'interpolación'; both refer to what here we have been calling *niching*:

> *Los tiempos compuestos no rechazan esta forma de interpolación, aunque es algo menos frecuente en ellos. La favorecen en particular los contextos irreales* (Lo que habría yo hecho si...). *Las formas polisilábicas de* haber *aceptan la interpolación del sujeto con mayor facilidad que las monosilábicas (compárese* Había yo pensado que... *con* *He yo pensado que...*), acaso porque estas últimas se asimilan indirectamente a los elementos procliticos. Aun así, las formas* hemos *y* habéis *no se ajustan del todo a esta generalización, puesto que suelen rechazar la interpolación.* (NGLE, §28.5d)

The reader may be left with the impression that we are dealing with a proper syntactic pattern after these remarks by RAE-ASALE. However, in our opinion, the

problem is more complex, and the existence of these (isolated) examples does not constitute enough justification to claim that *haber* licenses a niche. There are a few reasons why. Structures with an intermediate subject in the *pretérito perfecto compuesto* ('present perfect': *ha trabajado*) are almost non-existent: as of the 12th of February, 2019, we have not found a *single* example in CREA of <*haber* + pronoun> followed by a participle: *has tú, ha él, ha ella, has vos, han ustedes*. We have found two examples featuring *ha usted*, one of which should raise more than a few eyebrows (most certainly, it did ours): *¿Y cómo se ha usted sentido, señora?* from a text by Ángeles Mastretta.

If we proceed to examine the *pluperfect* (*había trabajado*), in the same corpus and as of the same date, we find *no* occurrences of the following forms followed by a participle: *habías tú, habíamos nosotros, habíais vosotros, habías vos*. There are 114 instances of <*había yo* + participle> in 66 documents, but 30 of those belong to three authors: Mercedes Salisachs, José Padilla and Eladia González. These figures are rather eloquent in illustrating the point that in <*haber* + pronoun / NP + participle> we are *not* dealing with a productive pattern in Spanish. It is a common observation in comparative Romance linguistics that Spanish *haber* is more grammaticalised than the corresponding forms in French or Italian. Spanish *haber* has completely lost its original possessive meaning (from Latin *habeo*, lit. 'to have (sth$_{ACC}$)'), and in Spanish it can auxiliate *all* verbs, as opposed to the situation in other Romance languages (French or Italian), which establish a divide between verbs depending on whether they build their composite tenses with the equivalents of *have* or *be*. The fact that *haber* is more grammaticalised than its counterparts in other Romance languages correlates with a more restrictive syntax, as the process of grammaticalisation moves *haber* further towards the realm of morphology[5].

We have stressed the point that it is difficult to have lexical material intervening linearly between *haber* and the participial form it selects; this has also been observed by RAE-ASALE:

> *Las perífrasis verbales coinciden con los tiempos compuestos en admitir ciertos adverbios entre auxiliar y auxiliado, aunque estos últimos suelen estar, al menos en la lengua actual, más limitados en esta pauta sintáctica.* (NGLE, §28.5e)

It is important to take this remark into consideration, for it pertains to the *asymmetry* that we mentioned above between *haber* and other functional modifiers in the extent to which *niching* is licensed. The 'limitation' that RAE-ASALE notes, in the present view, derives from the fact that we are *not* in reality dealing with *syntax* at all (if syntax pertains to *systematic*, *productive*, and *transparent* linguistic objects; see e.g., Lasnik & Uriagereka, forthcoming): expressions of the form <*haber* + participle> are not derived by concatenation of two basic expressions of the language (as would be the case of *tener que* + VP, which does involve concatenation of two

---

[5] It is a well-known fact that French and Italian maintain, under certain conditions, object agreement; Spanish, however, has lost it completely:

(i) a. Les chaises, Jean les a peintes.
   b. *Las sillas, Juan las ha pintadas.
     The chairs$_{FemPl}$, J. CL$_{FemPl}$ has painted$_{PartFemPl}$
     'The chairs, John has painted them'
(ii) a. Maria, l'ho vista questa mattina.
   b. *A María, la he vista esta mañana.
     M., CL$_{FemSg}$ have seen$_{PartFemSg}$ this morning.
     'Mary, I've seen her this morning'

basic expressions: *tener que* and the lexical VP), but rather the *modification* of a single basic expression of the language, that which surfaces as the participle. In this view, *trabajar* and *haber trabajado* do not belong to two different indexed categories in the metalanguage, but to a single one, which is *modified* by a rule akin to inflection (in the same way that *trabajar* and *trabajaba* belong to the same indexed category yet are not identical morpho-phonologically or semantically). Interestingly, this view is not unheard of and has been articulated and applied to grammatical analysis: Schmerling (2018: §6.5) studies the distribution of perfective *have* in English periphrastic constructions (particularly its co-occurrence with modals), and concludes that

> have *is not itself an expression but a lexical suffix in multi-word basic expressions.*
> (Schmerling, 2018: 92)

She notes that perfective *have* in English displays distributional irregularities which go against a treatment of *have* as an unremarkable syntactic head which forms derived expressions with other verbal heads by concatenation (of whichever specific kind; be it the Minimalist operation Merge, Categorial Grammar-style concatenation, etc.); particularly illustrative are the following examples of the interaction between deontic modals and perfective *have* (taken from Schmerling, 2018: 91):

(33)   a. *To be eligible you can't have won within the last six months.*
        b. **It is not the case that you can have won within the last six months.*

Schmerling points out that in her dialect (and in that of the informants that we have consulted, independently), perfective *have* cannot co-occur with deontic *may* or *can*, although it is possible (as seen in (33a)) to have deontic *can't*: once negation is raised to a higher clause (as in (33b)), the sentence is no longer grammatical for many speakers[6]. The ungrammaticality of (33b) as a paraphrasis of (33a) is particularly surprising; or it would be under the view that *have* is a garden-variety syntactic head which establishes unexceptional phrase structural relations with other syntactic heads and phrases (other auxiliaries in a chain, pronouns, NPs, adverbs…). Our conclusion is remarkably similar to Schmerling's (reached by different means and stemming from different assumptions), in that the putative systematicity of the patterns that *have* can appear in are in fact highly restricted (recall the quotation from RAE-ASALE above):

> *Why these irregularities* [such as those illustrated in (32)] *should exist is not entirely clear; but that they exist is evidence that* Modal + have *collocations are **individually learned basic expressions of English**. It has often been suggested that the semantic contribution of* have *is not consistent in all such collocations, and this position would be consistent with the hypothesis that **such forms are learned individually**.* (Schmerling, 2018: 91. Our highlighting)

In the light of these data, we would like to put forth the idea that the cases in which a subject surfaces after *haber* are remnants of previous diachronic stages of grammatical change, which does *not* reflect the natural use of native speakers. This quasi-constructional pattern is, therefore, a *learned* expression which belongs to a *passive* competence (in the sense of Moreno Cabrera 2013 and Escandell-Vidal,

---

[6] It is worth noting that Spanish presents an interesting paradigm: the only verbs which do not have compound forms (i.e., which do not admit the periphrasis with *haber*) are *soler* ('to do sth regularly') and *haber de* ('to have to'). Whatever explanation one has for the impossibility of **ha solido* (e.g., a semantic incompatibility between the perfective information introduced by *haber* and the habituality of *soler*) does not extend to **ha habido de*.

2019). These learned expressions, in some cases (as in the example from Ángeles Mastretta above) clash with the intuitions of native speakers (most certainly, with ours).

These considerations provide empirical support to our earlier claims that (a) the structure of Spanish auxiliary chains cannot be adequately accounted for by uniform phrase structure models based on recursive combinatorics but rather present aspects of what has been called 'mixed computation' (Krivochen, 2015, 2018; Lasnik & Uriagereka, forthcoming), and (b) as a consequence of the previous point, the availability of *niches* in auxiliary chains cannot be determined *a priori* based on a structural template; there are asymmetries between auxiliaries which yield grammatical patterns that do not correspond to the productivity and systematicity that a generative syntax predicts. The distinction between productive syntax and learned construction-like patterns (very roughly in the sense of Goldberg, 2006) seems to be required in order to get an observationally, descriptively, and explanatorily adequate account of *niching* in Spanish auxiliary chains (and, *as per* Schmerling's 2018 observations about perfective *have*, these considerations, insofar as they pertain to *methodology*, can be extended to English periphrastic constructions as well, with promising empirical results).

But there is a further point we mentioned above and left unaddressed: the well-formedness of a Spanish sentence featuring subject-auxiliary inversion in relation to *niching* also depends on the properties of the syntactic object being *niched*. Of particularly interest to us in the present paper is the case of niched subjects. In the case of **intermediate subjects**, as we will see in detail below, whether we are dealing with *bare* NP subjects or *definite* NP subjects makes a crucial difference: we will argue that these two kinds of NPs cannot occupy the same structural positions. The reader may recall in this context the contrast between (7c) and (8c) above, repeated here as (34a-b):

(34)   a. ¿A quién *podría estar* **Juan** haciendo eso?
        b. *¿Por dónde *podría haber estado* **agua** entrando?

This contrast requires explanation, for it is not obvious that definite and indefinite NPs do or do not occupy the same syntactic positions. In order to account for this contrast, we need to (i) provide an adequate formal characterisation of Spanish auxiliary chains (which, as we have seen, feature crucial differences with their English counterparts) and (ii) determine, on the basis of this characterisation, the structural positions where definite and indefinite NPs can occur as intermediate and rightwards subjects. We will proceed in this order.

5.2 The structure of auxiliary chains: extended projections and functional modifiers

In previous works we have proposed that the structure of auxiliary chains is not uniform; rather, chains can be internally segmented in local domains which contain:

  a. A predicative basic expression *p*
  b. Temporal and aspectual modifiers of *p* (cf. Bravo et al. 2015's *functional auxiliaries*)
  c. Nominal arguments of *p* (subjects, objects, clitics)

We can define (b), *functional modifiers*, as auxiliaries that can only modify other auxiliaries but never be modified themselves; in contrast, the lexical heads of

elementary trees corresponding to EPs are syntactic objects that can be modified as well as modify. There are empirical reasons to claim that auxiliary chains are not uniform in terms of their cyclic properties: some auxiliaries *block* the transmission of temporal and aspectual information, whereas others *let that information go through*. In Bravo et al. (2015) and subsequent works, the former were referred to as *lexical auxiliaries* (a class that includes *modals*, *phasal aspectual auxiliaries*, and *first position only auxiliaries*), whereas the latter were dubbed *functional auxiliaries* (including *perfective*, *progressive*, and *passive* auxiliaries). In García Fernández & Krivochen (2019) we referred to each structural unit containing elements (a), (b), (c) as the *extended projection* of *p* (in the sense of Grimshaw, 2001; Abney, 1987: 57). In the interest of highlighting the generality of this proposal, we may point out that the idea is equivalent in generative power to the so-called *Condition on Elementary Tree Minimality* (CETM) in *Lexicalized Tree Adjoining Grammars* (LTAG; Joshi & Schabes, 1991; Frank, 1992, 2002, 2006):

> *Each elementary tree consists of the extended projection of a single lexical head* (Frank, 1992: 53)

More recently, Frank (2002: 22) elaborates on this perspective, also based on the notion of *extended projection*, slightly reformulating the CETM in the following terms:

> *The syntactic heads in an elementary tree and their projections must form an extended projection of a single lexical head.*

The restriction on the size of elementary trees proposed by Frank is essentially what we are going for, provided that the elements in the *extended projection* of a lexical head are the ones specified in (a-c) above: note that nominal arguments are part of the extended projection of the verbal predicate that select them; in this sense, simple NPs do not configure independent cycles. In Schmerling's terms (and more generally, in post-Montagovian categorial grammar terms), the size of extended projections is determined by the application of *concatenation rules* (such that, for instance, *tener que trabajar* would indeed be obtained by the concatenation of *tener que* and *trabajar*, and each of these corresponds to a new EP –a new elementary tree from an LTAG perspective-), but not by rules of functional modification (in the sense of Schmerling, 2018), as these apply *within* an extended projection (such that *haber trabajado*, *haber sido ayudado*, *ir a estar trabajando…* are obtained by rules of functional modification applying to the basic expression *trabajar*, and do not give rise to new EPs). The perspective adopted in the present paper, informed by phrase structure grammars, and that which emerges from the Categorial Grammar tradition converge in establishing a difference between concatenation and modification, with empirical consequences for the availability of intermediate positions for such objects as subjects, floating quantifiers, etc.

A different notion of *niche* from the one we find in Ross (1991) for English stems from the idea that auxiliary chains are *not* monotonic phrase structural objects: niches are licensed at the level of *extended projections*, which are not periodic domains that can be delimited *a priori*, but rather cycles that emerge from the dynamics of a specific derivation. Thus, we predict a preference for the appearance of arguments (internal subjects, clitics) in intermediate positions around *lexical* rather than *functional* auxiliaries, for the former are the heads of their respective EPs and define

the size of their minimal elementary tree. Let us see an example with a *wh*-interrogative:

(35) ¿A quién (*Juan) tiene (Juan) que haber (*Juan) estado (Juan) pidiéndole perdón?
      To who(m) (J.) has (J.) to have (J.) been (J.) asking-CL forgiveness
      'Who should J. have to have been apologising to?'

We see that the definite subject *Juan* may surface in *intermediate positions*, as seen above. But now we can refine that observation, and point out that those positions in which an *intermediate subject* is grammatical are precisely those licensed by the predicative expressions which head EPs, but not their functional modifiers: i.e., elements which are not introduced by concatenation but by rules of functional modification. These functional modifiers are not all the same, and the theory does not predict that they should be: as seen above, *haber* seems to be far more grammaticalised than *ser*; furthermore, there seems to be intra-linguistic variation pertaining to the relation between functional modifiers and the lexical heads they modify. This relation may be closer to garden-variety *syntax* (in which case there should be a syntactic position available between *ser* and the participle it selects) or to inflectional *morphology* (in which case there is no niche and thus intermediate subjects are not allowed). The reader may recall that we marked some intermediate positions with %: this reflects such variation. *Grosso modo*, there seems to be a growing tendency towards *grammaticalising all functional auxiliaries as morphological modifiers of lexical heads* (i.e., *ser*, *ir a* and *haber* being all introduced by rules of functional modification), which in terms of the present discussion translated as younger speakers rejecting **intermediate subjects** even with *ser* (in addition to the ungrammaticality of intermediate subjects with *haber*) since there is no syntactic niche licensed in <*ser* + participle> sequences. We may note in this respect the following examples, taken from Torrego (1984: 105), judgments are hers:

(36) a. *¿Qué ha la gente organizado?
      What has the people organised?
      b. *¿Por quién fue la reunión organizada?
      By who(m) was the meeting organised?

Note that Torrego does not allow an intermediate definite NP subject after *either* perfective *haber* or passive *ser*, which coincides with the intuitions of one of the authors of the present paper.

The internal segmentation for auxiliary chains proposed here and in previous works, contrasts with the uniformly monotonic view which predominates in the English grammatical tradition, and which –given the rigidity of English auxiliary chains-, has its merits (although it is not completely exempt of problems). The structural flexibility inherent in the present proposal allows us to capture empirical aspects of the syntax and semantics of Spanish auxiliary chains in a way that is formally explicit and theoretically elegant.

In this light, let us consider the examples in (37):

(37) a. *¿Cuándo **ellos** podrían haber estado siendo interrogados? **Leftwards Position**
      b. ¿Cuándo podrían **ellos** haber estado siendo interrogados? **Intermediate Position 1**
      c. */%¿Cuándo podrían haber **ellos** estado siendo interrogados? **Intermediate Position 2**

    d. %¿Cuándo podrían haber estado **ellos** siendo interrogados? **Intermediate Position 3**
    e. ¿Cuándo podrían haber estado siendo **ellos** interrogados? **Intermediate Position 4**
    f. ¿Cuándo podrían haber estado siendo interrogados **ellos**? **Rightwards Position**
    When could they have been being questioned?

The reader can see that (37c) is ungrammatical, or at least very marginal. The examples in (37) illustrate the asymmetry between niches that we have been discussing, since not all of them can host a subject. This contrast follows from our previous discussion about the quasi-morphological properties of perfective *haber* as a functional modifier in the extended projection of a lexical head which is *not* introduced into the derivation by means of *concatenation* but by means of a different kind of rule: there is *no niche* after *haber*, therefore, an X-bar-style phrase-structure grammar assigns too much structure to what does not seem to be a phrasal dependency at all. In Schmerling's (2018) Categorial Grammar-based *neo-Sapirian framework*, expressions of the form *have + participle* are not derived via *concatenation* of basic expressions, but rather by a rule of *modification* which takes an expression E of an indexed category C (notated E_C) and delivers as its output a modified expression of category C, not an expression of a new category. However, it is accounted for, it is crucial for a descriptively and explanatorily adequate theory of auxiliary chains (and thus of niching) to be able to capture the lexically-governed asymmetries between patterns that *prima facie* would seem to be unremarkably regular. We can summarise the proposal in the present paper as follows:

- *Only lexical heads license niches*

Admittedly, this seems to be too strong as a characterisation of the grammar of some speakers, but it does capture the pattern of syntactic change in the speakers' grammar that we noted above. Now, because of the CETM, there is only one lexical head *per* EP (because each EP configures an elementary tree), therefore,

- *There is only one niche per EP*

This limits both the amount of material that can appear in intermediate positions and the available positions themselves. Concretely, EPs headed by *modals* (*poder*, *tener que, etc*) and *phasal aspectual auxiliaries* (*empezar a, terminar de, etc*) license a syntactic position (a *niche*) that can be filled by a single nominal argument. Furthermore, we formulated a further restriction on the weak generative power of the system: only definite NPs can occupy these intermediate positions. The implications are clear: pure configurational considerations do not suffice when attempting to provide adequate characterisations of the syntax of *niching* in Spanish auxiliary chains; the *definite / indefinite* contrast does not pertain to the format of the phrase marker (thus, it is not a 'configurational' notion), yet it is a defining factor in the well-formedness of expressions featuring intermediate subjects. In the following section we will extend this perspective, and deal with the properties and distribution of rightwards subjects.

6. Two classes of rightward subjects

Above, we identified two issues that would be the focus of our inquiry: the first was the distribution of **intermediate subjects**, which in turn required an analysis of the conditions under which *niching* is licensed in Spanish. The second problem to be

dealt with –also anticipated above- is whether all **rightward subjects** indeed occupy the same structural position. To this end, consider the following examples:

(38)   a. ¿Cuándo podrían haber estado siendo interrogados **los sospechosos**?
          When could have been being interrogated the suspects?
          'When could the suspects have been being interrogated?'
        b. ¿Por dónde podría haber estado entrando **agua**?
          From where could have been entering water?
          'Where could water have been coming in?'

Note that in both examples the subject (marked in bold) appears at the right of the lexical verb, but this does not mean that they are in identical structural positions, as we will see shortly. The definite NP *los sospechosos* may appear in the leftmost position and in all intermediate positions, with the exception of the position between *haber* and *estado* (if there is a position there to begin with, see our discussion in section 4 above -also Schmerling, 2018: 89-92 for an argument from English- that there is not). In contrast, the bare NP *agua* cannot occupy any of these positions.

It is worth looking at other constructions in which the leftmost position cannot be filled, either by a definite NP or a bare NP. Specifically, in (39) and (40) we give two examples of infinitival adjuncts:

(39)   a. *Al **Juan** estar cantando, no oyó el timbre.
        b. Al estar **Juan** cantando, no oyó el timbre.
        c. Al estar cantando **Juan**, no oyó el timbre.
          Prt be singing J., not hear₃SgPast the bell
          'Because he was singing, J. did not hear the bell'
(40)   a. *?Al **agua** poder salir por este tubo, ten cuidado.
        b. *Al poder **agua** salir por este tubo, ten cuidado.
        c. Al poder salir **agua** por este tubo, ten cuidado.
          Prt may come-out water through this tube, have₂SgImp care
          'Because water may come out of this tube, be careful'

Note that the construction <*al* + infinitive> does not allow pre-verbal subjects, which accounts for the ungrammaticality of (39a) and (40a). Both subjects can appear as rightwards subjects, which explains the well-formedness of (39c) y (40c), but only a definite NP can appear in a niche; in turn this provides an account for the contrast between the grammaticality of (39b) and the ungrammaticality of (40b).

At this point, we are in the position of establishing two descriptive generalizations (to which we will return below):

> Generalization I: a bare NP subject cannot appear in an intermediate position
> Generalization II: intermediate positions are available for definite NPs even in structures where the leftmost position is not

We can further exemplify Generalization II with a gerundive absolute construction: the leftmost position is not available for an overt subject, definite though it may be, but the intermediate position is:

(41)   a. ***Juan** estando cantando, sonó el timbre
        b. Estando **Juan** cantando, sonó el timbre

Being J. singing, rang the bell
'While J. was singing, the bell rang'

It is not a new observation that only null-subject languages license post-verbal subjects (see, e.g., Jaeggli & Safir, 1989); far less studied is the question of what pre-verbal positions are available and how they play along with post-verbal positions, regardless of how pre- and post-verbal orders are obtained. This latter point is relevant insofar as the question we address here does not arise only in movement-based models, but in fact is independent from transformations: the availability of positions is a matter of syntactic-semantic licensing which can be expressed in terms of a phrase structure rule, a transformation, lexical indexing, conditions on parallel structure mapping (as in LFG or Jackendoff's Parallel architecture), etc. Our framework of choice thus follows from considerations of ease of exposition and presentation rather than from the assumption that it is inherently superior to its competitors to account for the facts.

In this work we will defend the hypothesis that post-verbal bare NP subjects are not in Spec-vP, but rather occupy the position of complement of V. In this respect, note the unacceptability (or, for some speakers including one of the authors, ungrammaticality) of (47), where the post-verbal subject is a bare unmodified NP which appears *after* the location in an unaccusative configuration:

(47)   ?/* ¿Por dónde podría haber estado entrando en esta habitación **agua**?

In (47), the bare NP does not occupy the position of complement of V, and thus the sentence is ungrammatical. In contrast, rightwards definite NP subjects are not in Compl-V, but *adjoined* to a higher node; this is why definite NPs can linearly surface after VP adjuncts and as dislocated topics, as in (48):

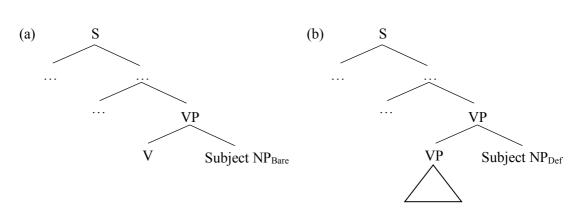(48)   a. ¿Cuándo podrían haber estado siendo interrogados por el incidente **los sospechosos**?
        b. Pueden haber estado entrando por aquí, **las hormigas**

The structural descriptions which capture the distribution of bare and definite NPs that we have in mind go along the lines of (49) below, with the post-verbal definite NP subject being Chomsky-adjoined to the closest cyclic node *as per* Ross' (1967: 341) Right Roof Constraint (RRC)[7]:

---

[7] The RRC establishes a higher boundary for rightwards movement (Heavy NP shift, Extraposition, etc.):
In all rules whose structural index is of the form ... A Y, and whose structural change specifies that A is to be adjoined to the right of Y, A must command Y (where the definition of 'command' differs from that of 'c-command' in making explicit reference to the structurally closest S node; more generally, the closest cyclic node).

(49) a. [s … [vp V NP]] (bare NP)
      b. [s … [vp V] NP] (definite NP)

If the account of the structure of auxiliary chains in terms of extended projections of lexical heads (lexical verbs or lexical auxiliaries) that we have put forth in García Fernández et al. (2017); García Fernández & Krivochen (2019) and summarised here is along the right lines, then 'cyclic nodes' are the roots of the elementary trees that configure each extended projection (see also Frank, 2006 for a clear exposition of the basic principles of *lexicalised Tree Adjoining Grammars*, which our proposal of extended projections within auxiliary chains stems from). In this context, we can provide some further evidence in favour of an adjunction approach to the structural placement of postverbal definite NP subjects. Consider a case of *clitic right dislocation* with a post-verbal subject in which the subject appears *after* the dislocated DO (see López, 2009 for extensive discussion).
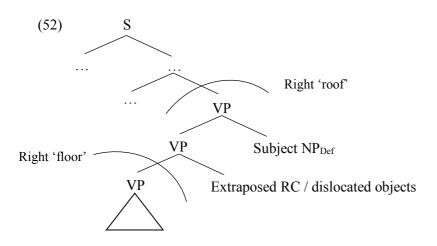
(50) Se lo entregó a Juan, el paquete, el empleado de correos
      SE Cl3SgACC-deliver to J., the package, the mailman
      'The mailman delivered the package to Juan'

A similar situation arises with Relative Clause Extraposition (adapted from Brucart, 1999: 465).

(51) Le entregó una lista al encargado del curso que contenía los nombres de todos los inscritos, el director de departamento
      Cl3SgDAT gave a list to-the manager of the course which contain3SgPastImpf the names of all the enrolled, the director of department
      'The head of department gave the teacher in charge of the course a list which contained the names of everyone enrolled'

The post-verbal NP subject in all cases appears *after* the dislocated object (as in (50)) or extraposed relative clause (as in (51)), and of course also VP adjuncts (as in (48)). This gives us some clues about its structural position. If Spanish rightwards movement is bound by the RRC as it is in English, then we can establish that the position of the post-verbal definite NP subject cannot be higher than the closest cyclic node dominating the VP nor lower than VP itself (where VP adjuncts are Chomsky-adjoined). Note that at present, if we allow for Chomsky-adjunction to extend the VP indefinitely, it is immaterial whether dislocated elements are adjoined to VP and subjects are adjoined to *v*P; under a cartographic approach or a more articulated VP

dynamics[8]. In addition to the *higher* boundary set by the RRC, the Extraposition and dislocation cases push the *lower* boundary to the closest root node (which is also consistent with the standard formulation of the RRC, although not part of it). We can diagram the relevant structural configurations as follows:

(52)

In English, the right-dislocated element binds a resumptive pronoun in the canonical pre-verbal subject position:

(53)   *He*'s real smart, *John*

The equivalent Spanish structure ((54), below) can only involve a null subject *pro*; a tonic pronoun is banned in these cases (and note that the only possible reading in the grammatical case is that in which the dislocated NP bears the same index as the null subject *pro*):

(54)   a. *$él_i$ es muy inteligente, Juan$_i$
        b. *pro*$_{i/*j}$ es muy inteligente, Juan$_i$

This is consistent with a derivation via rightwards movement as copying rather than chopping (in the sense of Ross, 1967), and reinforces the argument in favour of an RRC approach to restricting the possible structural places for a post-verbal definite NP subject.

We may also examine the issue posed by subjects in answers to *wh*-questions, building on Lobo & Martins (2017). They correctly point out that only a VS answer is acceptable in cases like (55) (Lobo & Martin's (12b)):

(55)   -¿Quién es?
        Who is?
        'Who is it?'
        -#Yo soy
        I am
        -Soy yo
        Am I

---

[8] Although we will not pursue it here, this is an issue worthy of further research (particularly if *v*P is considered a cyclic node, as in most standard *phase theoretic* accounts within Minimalism; Chomsky, 2001 and much subsequent work).

'It's me'
-*Who's that?*
-*It's me*

Once again, we may ask what the structural position occupied by the subject pronoun is. And, again, we can probe this by requiring a more articulated structure in the VP:

(56)   ¿Quién es el que siempre llega tarde?
        Who is it that always arrives late?
        'Who is the person that is always late?'
        a. *Juan es siempre
            J. is always
        b. Es siempre, $\left\{ \begin{array}{c} invariablemente \\ no\ importa\ cuando\ preguntes \end{array} \right\}$ Juan
            Is$_{3SgPres}$ always, invariably / no matters when ask$_{2SgSubj}$, J.
            'It's always, invariably / no matter when you ask, J.'
        c. ?Es Juan siempre, invariablemente
            Is$_{3SgPres}$ J. always, invariably
            'It's J. always, invariably'

Note that the subject appears in the rightmost position, after VP adverbs and parenthetical adjuncts of variable complexity (see (56b)). At this respect, it is useful to point out the contrast between (56b) and (56c): note that it is not enough to have VS order to yield a grammatical sentence (as observed by Lobo & Martins), the subject must also be adjoined to a *higher* node than the adjoined parenthetical or an extraposed relative clause (this node being the structurally closest cyclic node), as predicted by our account. These examples therefore reinforce the hypothesis that the structural position of definite post-verbal subjects is not the same as that of bare NP subjects.

A prediction that follows from the structures in (49a-b) is that postverbal NP subjects with unergative verbs should be degraded in grammaticality with respect to unaccusative verbs, since in the former the object position is not available. In other words: if unergative verbs are denominal (as first suggested by Fillmore, 1968; see also Hale & Keyser, 2002, and much related work), derived by N incorporation / conflation, the position of V complement is occupied by the trace of the incorporated N, and it can only surface as a further specification of that N (e.g., *morir una buena muerte*, *soñar el sueño de los justos*); in contrast, unaccusative verbs license a VP-internal position for subjects within the scope of V, therefore a post-verbal NP subject can occupy the position of complement of V. The judgments are somewhat subtle, but we do find a difference in acceptability between (57a) and (57b):

(57)   a. ??Pueden haber estado *corriendo* carreras **personas** en el patio (unergative V, bare NP within the VP)
        a'. *Pueden haber estado *corriendo* carreras en el patio, **personas** (unergative V, bare NP Chomsky-adjoined to VP)
        'People may have running races in the backyard'
        b. Pueden haber estado *entrando* **personas** en el patio (unaccusative V, bare NP within the VP)

b'. *Pueden haber estado *entrando* en el patio, **personas** (unaccusative V, bare NP Chomsky-adjoined to VP)
'People may have been coming into the backyard'

Because this is an issue that pertains to the structural positions occupied by NPs rather than to the properties of NPs themselves, both bare and definite NPs are affected (as we can see in (58a) below, a definite NP is just as marginal acceptability-wise as a bare NP in a VP-internal post-verbal position with an unergative V). However, because definite NPs can appear in a more peripheral position, outside the VP, we would expect the cyclic-adjoined version to repair the violations in (57a') and (57b') above:

(58) a. ??Pueden haber estado *corriendo* **los maratonistas** aquí
b. Pueden haber estado *corriendo* aquí, **los maratonistas** (unergative V, adjoined definite subject)
c. Pueden haber estado *entrando* aquí, **aquellas personas** (unaccusative V, adjoined definite subject)
'They may have been coming in here, the marathon runners / those people'

This suggests that we need to look at (49) in some more detail. An issue that we are ready to address at this point is whether there is a structural difference between (59a) and (59b):

(59) a. ¿Cuándo podrían haber *entrado* por la ventana **los ladrones**?
b. ¿Cuándo podrían haber *entrado* **los ladrones** por la ventana?
When could have entered through the window the thieves?
'When could the thieves have come in through the window?'

Note that both feature a definite postverbal NP, in both cases we are dealing with a rightwards subject. However, in (59a) the locative PP *por la ventana* appears closer to the V than the subject, whereas in (58b) the subject is adjacent to the verb. It is necessary to provide an account of this fact, namely, that definite NPs seem to have available more structural positions than bare NPs, and therefore their distribution is less restricted.

Recall that above we made a generalisation about the distribution of leftwards subjects in implicative terms: if a subject can be a leftwards subject, then it can appear in intermediate positions (i.e., within niches). Can we say something analogous for rightwards subjects?
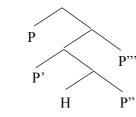
The first factor that we need to consider is, as suggested by (57-59), *verb typology*. We want to control for that, since only unaccusatives (within intransitives) license a VP-internal subject position (Belletti, 1988 and much related work). This will be our *ceteris paribus* condition: in unaccusative configurations, there is a VP-internal subject (which means that the configuration (49a) is available) but of course nothing precludes root adjunction (which means that the configuration (49b) is available as well). We also observed that bare NPs cannot appear root adjoined; in other words, the rightmost rightwards position is *only possible* for definite NPs. Now, in analogy to the situation with leftmost subjects, we can ask: if a subject can be a rightmost rightwards subject (i.e., if it can appear root adjoined, after adjuncts and extraposed objects), can we predict that it will also be a grammatical VP-internal rightwards subject? Indeed, we can. This is when the examples in (58) become particularly

relevant: in (59a) the definite NP subject appears after the locative PP, and this is consistent with the structural analysis in (49b). But we must note that (59b) is also possible, and every bit as grammatical as (59a).

We can now summarise this and include the observations made about leftwards subjects building on our proposal that auxiliary chains are structured around local domains (syntactically, as elementary trees; semantically, as predicational domains) which we referred to as *extended projections*:

> *If a subject may appear in a peripheral position P in an extended projection EP with head H, then it may also appear in positions P', P''… where P', P''… are in the scope of P*

We can illustrate this in a phrase structure tree. Consider the following structural description:

(60)

The generalisation above states that if a subject can appear in P, it can also appear in all positions *within the EP of H* that appear in the scope of P (since only nodes within a given elementary tree are accessible for lexical insertion licensed by a predicate). In standard terms (Ladusaw, 1980; May, 1985), this means 'all the nodes that P c-commands'; therefore, what we say is that if a subject can appear in P, it can also appear in P', P'', and P'''. However, the converse of this generalisation is not true, which is why the notion of *scope* is relevant -it being a *total*, *antisymmetric* relation-. Definite NP subjects can appear Chomsky-adjoined to VP; this position c-commands the position of complement of V. Therefore, V-complement is in the scope of VP-adjoined. By our generalisation, if a subject may appear in the latter, it may also appear in the former. This is borne out by (59) above, where we see that a definite NP may surface linearly before a VP adjunct in an unaccusative construal (in which case it must be in the complement of V) or after that VP adjunct (in which case, we claimed, it is Chomsky-adjoined to VP, c-commanding the VP adjunct). Bare NP subjects, we argued, are structurally in the complement position of V, but they cannot surface after VP adjuncts or be extraposed (cf. (47) - (57 b')).

In sum, we have showed that not all post-verbal subjects occupy the same structural positions, and furthermore that there are asymmetries between rightwards positions in terms of the classes of NPs that they can host.

6. Conclusions

In this paper we investigated the properties of positions internal to chains of auxiliary verbs, which Ross (1991) dubbed *niches* and their capacity to host NP subjects. In doing this, we analysed previous approaches to the structure of auxiliary chains and their articulation with the lexical VP, and critically revised the consequences that they have for the problem of the structural position of leftwards, intermediate, and rightwards subjects. We now close the paper by presenting the most important points of our argument:

- Not all positions that a PSG analysis would predict are indeed niches; crucially, perfective *haber* is not a syntactic head introduced by a rule of concatenation but rather configures a modified expression with a lexical head (lexical verb or lexical auxiliary).
- NPs are not all the same for purposes of niching (i.e., **intermediate positions**) or **rightwards positions**. The distribution of definite NPs is far less restricted than that of bare NPs: whereas definite NPs may appear in **leftwards**, **intermediate**, and **rightwards** positions (the latter, both as complement of V and Chomsky-adjoined to VP), bare NPs are practically limited to complement of V **rightwards positions**.
- Leftwards and intermediate positions configure a natural class in terms of the kinds of subjects that they allow for; furthermore, they do not require Chomsky-adjunction
- Further refinement was necessary in what pertains to rightwards positions, since bare NPs and definite NPs do not occupy the same structural positions; this is consistent with the second point and reinforces a dynamic view of phrase structure building in which lexical properties can restrict the formal operations that apply to a syntactic object.

Diego Gabriel Krivochen
University of Reading
School of Psychology and Clinical Language Sciences
Earley Gate
Reading RG6 6AL
diegokrivochen@hotmail.com

Luis García Fernández
Universidad Complutense, Madrid
Dpto. de Lengua Española y Teoría de la Literatura
Facultad de Filología. Edificio D. Despacho 0.319
Avda. Complutense s/n
28040 Madrid
luis.garcia@filol.ucm.es

References

Abney, S. P. (1987). *The English noun phrase in its sentential aspect*. PhD dissertation, MIT.

Anderson, G. (2006). *Auxiliary verb constructions*. Oxford: OUP. https://doi.org/10.1093/acprof:oso/9780199280315.001.0001

Bach, E. (1983). Generalized Categorial Grammars and the English Auxiliary. In Frank Heny & Barry Richards (eds.), *Linguistic categories: auxiliaries and related puzzles*, Vol 2. Dordrecht: Reidel, pp. 101–120. https://doi.org/10.1007/978-94-009-6992-6_3

Barbosa, P. (2001). On Inversion in Wh-questions in Romance. In Aafke C. J. Hulk y Jean-Yves Pollock (eds.) *Subject inversion in Romance and the theory of universal grammar*. Oxford: Oxford University Press, pp. 20-59.

Belletti, A. (1988). The Case of Unaccusatives. *Linguistic Inquiry* 19(1), pp. 1-35.

Bok-Bennema, R. (1992). Agr-S in Spanish. In D. Gilberts and S. Looyenga, (eds.) *Language and Cognition* 2, Groningen: RUG.

Bravo, A., L. García Fernández, & D. Krivochen (2015). On Auxiliary Chains: Auxiliaries at the Syntax-Semantics Interface. *Borealis*, 4(2), pp. 71-101. http://dx.doi.org/10.7557/1.4.2.3612

Brucart, J. M. (1999). La estructura del sintagma nominal: las oraciones de relativo. In I. Bosque & V. Demonte (eds.) *Gramática descriptiva de la lengua española, vol. 1: Sintaxis básica de las clases de palabras*. Madrid: Espasa Calpe, pp. 395-522.

Camacho, J. (2006). Do Subjects Have a Place in Spanish? In Chiyo Nishida and Jean-Pierre Y. Montreuil (eds.) *New Perspectives on Romance Linguistics: Vol. I: Morphology, Syntax, Semantics, and Pragmatics*. Amsterdam: John Benjamins, pp. 51-66. https://doi.org/10.1075/cilt.275.06cam

Chomsky, N. (1957). *Syntactic Structures*. The Hague: Mouton.

Cinque, G. (1999). *Adverbs and Functional Heads: A Cross-Linguistic Perspective*. Oxford: OUP.

Escandell-Vidal, Mª V. (2019). El futuro simple del español. Sistema natural frente a usos cultivados. *Verba Hispanica* XXVI(1), pp. 15-33. http://dx.doi.org/10.4312/vh.26.1.15-33

Fillmore, C. (1968). The case for case. In Emmon Bach and Robert Harms (eds.) *Universals in Linguistic Theory*. New York: Holt, Rinehart, and Winston. 1-89.

Frank, R. (1992). *Syntactic Locality and Tree Adjoining Grammar: Grammatical, Acquisition and Processing Perspectives*. Doctoral dissertation, University of Pennsylvania.

Frank, R. (2002). *Phrase Structure Composition and Syntactic Dependencies*. Cambridge, Mass.: MIT Press. https://doi.org/10.7551/mitpress/5366.001.0001

García Fernández, L. & D. Krivochen (2019). Dependencias no locales y cadenas de verbos auxiliares. To appear in *Verba*, 46.

García Fernández, L., D. Krivochen & A. Bravo (2017). Aspectos de la semántica y sintaxis de las cadenas de verbos auxiliares en español. *Moenia* 23, pp. 1-28.

Gazdar, G. (1981). Unbounded Dependencies and Coordinate Structure. *Linguistic Inquiry*, 12(2). 155-184. https://doi.org/10.1007/978-94-009-3401-6_8

Gazdar, G., G. K. Pullum and I. A. Sag (1982). Auxiliaries and Related Phenomena in a Restrictive Theory of Grammar. *Language* 58(3), pp. 591-638.

Gómez Torrego, L. (1999). Los verbos auxiliares. Las perífrasis verbales de infinitivo, in I. Bosque & V. Demonte (dirs.), *Gramática descriptiva de la lengua española*, 3 vols. Madrid: Espasa, vol. 2, pp. 3323-3389.

Grimshaw, J. (2000). Locality and Extended Projection. In Peter Coopmans, Martin Everaert, & Jane Grimshaw (eds.) *Lexical Specification and Insertion*. John Benjamins, pp. 115-133.

Guéron, J. & T. Hoekstra (1988). T-Chains and the Constituent Structure of Auxiliaries, in A. Cardinaletti, G. Cinque & G. Giusti (eds.), *Constituent Structure. Papers from the 1987 GLOW Conference*. Venice, Annali di Ca'Foscari, pp. 35-99.

Hale, K. and S. J. Keyser (2002). *Prolegomenon to a Theory of Argument Structure*. Cambridge, Mass.: MIT Press. https://doi.org/10.7551/mitpress/5634.001.0001

Jaeggli O. and K. Safir (eds.) (1989). *The Null Subject Parameter,* Dordrecht: Kluwer Academic Press. https://doi.org/10.1007/978-94-009-2540-3

Joshi, A. K. (1985). Tree adjoining grammars: How much context-sensitivity is required to provide reasonable structural descriptions? In David Dowty, Lauri Karttunen, and Arnold Zwicky (eds.) *Natural Language Parsing*. Cambridge, Mass.: CUP, pp. 206-250. https://doi.org/10.1017/CBO9780511597855.007

Joshi, A. K. and Y. Schabes (1991). Tree-Adjoining Grammars and Lexicalized Grammars. *Technical Reports (CIS)*. Paper 445. http://repository.upenn.edu/cis_reports/445

Kayne, R. (1994) *The Antisymmetry of Syntax*. Cambridge, Mass.: MIT Press.

Krivochen, D. (2015). On Phrase Structure building and labelling algorithms: towards a non-uniform theory of syntactic structures. *The Linguistic Review* 32(3), pp. 515-572. https://doi.org/10.1515/tlr-2014-0030

Krivochen, D. (2018). *Aspects of emergent cyclicity in language and computation*. PhD dissertation, University of Reading. https://www.academia.edu/19959486/_2017_Aspects_of_Emergent_Cyclicity_in_Language_and_Computation_I_cant_believe_there_are_still_typos_version._Also_other_corrections_and_added_references_

Lasnik, H. & J. Uriagereka. (forthcoming). *Structure*. Cambridge, Mass.: MIT Press.

Leonetti, M. (to appear). Two types of postverbal subjects. *Italian Journal of Linguistics*.

Lobo, M. & A. M. Martins (2017). Subjects. In Andreas Dufter & Elisabeth Stark (eds.) *Manual of Romance Morphosyntax and Syntax*. Berlin: De Gruyter, pp. 27-88. https://doi.org/10.1515/9783110377088-002

López, L. (2009). *A derivational syntax for information structure*. Oxford: OUP. https://doi.org/10.1093/acprof:oso/9780199557400.001.0001

Mains, P., K. McGowan & D. Medeiros (2015). Gradient Acceptability by Length in Heavy NP Shift. Presented at *Linguistic Society of America*. http://www-personal.umich.edu/~medeiros/images/LSA%20hnps.pdf

McCawley, J. D. (1975). The Category Status of English Modals. *Foundations of Language* 12, pp. 597-601.

Moreno Cabrera, J. C. (2013). *Cuestiones clave de la Lingüística*. Madrid: Síntesis.

Olarrea, A. (1998). On the position of subjects in Spanish. *ASjU,* XXXII-I, pp. 47-108.

Postal, P. M. (1998). *Three investigations on extraction*. Cambridge, Mass.: MIT Press.

Quirk, R., S. Greenbaum, G. Leech & J. Svartvik (1985). *A Comprehensive Grammar of the English Language*. London: Longman.

Rizzi, L. (1982). *Issues in Italian syntax*. Dordrecht: Foris. https://doi.org/10.1515/9783110883718

Ross, H. (1991). Verbiness and the size of niches in the English auxiliary. In C. Georgopoulos and R. Ishihara. (eds.) *Interdisciplinary approaches to language: Essays in honor of S.-Y. Kuroda*. Dordrecht: Kluwer Academic Publishers, pp. 459-499. https://doi.org/10.1007/978-94-011-3818-5_24

Ross, H. (2012). A preliminary –but fattened- list of transformations. Ms. http://www-personal.umich.edu/~jlawler/haj/Preliminarybufattenedlistoftransformations.pdf

Ross, J. R. (1967). *Constraints on Variables in Syntax*. PhD dissertation, MIT.

Sag, I. (2010). English filler-gap constructions. *Language* 86(3), pp. 486-545. https://doi.org/10.1353/lan.2010.0002

Sag, I., Chaves, R., Abeillé, A., Estigarribia, B., Flickinger, D., Kay, P., Michaelis, L. Müller, S., Pullum, G., van Eynde, F. & Wasow, T. (2018). Lessons from the

English auxiliary system. *Journal of Linguistics*, pp. 1-69. https://doi.org/10.1017/S002222671800052X

Schmerling, S. F. (1983). A new theory of English auxiliaries. In Frank Heny & Barry Richards (eds.), *Linguistic categories: auxiliaries and related puzzles*. Vol 2. Dordrecht: Reidel, pp. 1–53. https://doi.org/10.1007/978-94-009-6992-6_1

Schmerling, S. F. (2018). *Sound and Grammar: a Neo-Sapirian theory of language*. Leiden: Brill. https://doi.org/10.1163/9789004378261

Sportiche, D. (1988). A Theory of Floating Quantifiers and Its Corollaries for Constituent Structure. *Linguistic Inquiry*, 19(3), pp. 425-449.

Torrego, E. (1984). On Inversion in Spanish and Some of Its Effects. *Linguistic Inquiry* 15(1), pp. 103-129.

Uribe-Etxeberría, M. (1992). On the structural positions of the subject in Spanish, their nature and their consequences for quantification. In Jon Ortiz de Urbina (ed.) *Syntactic theory and Basque syntax*. Gipuzkoako Foru Aldundia, pp. 447-491.

Zubizarreta, M. L. (1992). Word Order in Spanish and the Nature of Nominative Case. Ms. Los Angeles: U. of Southern California.

Zubizarreta, M. L. (2001). The Constraint on Preverbal Subjects in Romance Interrogatives: A Minimality Effect. In Aafke C. J. Hulk y Jean-Yves Pollock (eds.) *Subject inversion in Romance and the theory of universal grammar*. Oxford: Oxford University Press, pp. 183-204.