Partitivity in Romance and the syntax-morphology connection

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Abstract

This paper claims that the relationship between morphology and syntax is multidirectional. It argues against the generally accepted position in LFG that word formation feeds the syntax and that syntax cannot feed word formation. The proposal is that the rules of inflectional morphology take f-structure information, together with other information, as their input. The main argument for this claim is provided by the comparative analysis of two Romance languages, one with the partitive affix and one without it. The observation that languages without the partitive affix have null indefinite objects, whereas languages with this affix seemingly do not, follows straightforwardly only if we assume that syntax feeds word formation.[†]

This paper has two main goals. One is to describe the distribution of the partitive affix in the Romance language Catalan.[1] The second one is to explain the differences between a Romance language that has the partitive affix (Catalan) and one that lacks it (Spanish). Given standard LFG assumptions, there would be a morphological difference (presence vs. absence of the partitive affix) and a syntactic difference (whether a null indefinite object is possible or not) and these two differences would be explained by independent principles of the theory. The goal is to make these two differences follow from a single assumption of the theory.

The main theoretical claim is that the relationship between morphology, c-structure, and f-structure (as well as the other levels of LFG) is not unidirectional, but multidirectional. The prevalent assumption in LFG is that words are formed independently of the syntactic information of sentence in which they are used and that they carry the necessary syntactic information for their use in a well-formed structure. The proposal that will be argued for here is that the rules of inflectional morphology take as their input f-structure

[†] I thank the audience at LFG2022, Nuo Xu, and two anonymous reviewers, for valuable comments that helped improve the final version of this paper.

[1] Note the use of the term *affix* for the class of affixes in Romance commonly referred to as clitics, such as the partitive affix. This use agrees with the abundant evidence for the affixal status of so-called clitics in Romance: see Andrews (1990) for Spanish, Bonet (1991, 1995) and Alsina (1996) for Catalan, Miller (1992) and Miller and Sag (1997) for French, Crysmann (1997), Luís and Sadler (2003), and Luís and Spencer (2005) for Portuguese, Monachesi (1999) for Italian, among others, and Alsina (in press) for a review of the evidence. As affixes, these elements fall within the domain of morphology: they are handled by the principles of word structure, are word parts, and have no status in the c-structure. This paper makes no claims about all elements in all languages that have been identified as clitics or about *clitic* as a theoretical notion. It may be that some languages have clitics understood as c-structure categories that are phonologically dependent on an adjacent word: this paper has nothing to say about them. Using Zwicky's (1977) distinction between special and simple clitics, it is possible that many of the elements that can be classified as special clitics would lend themselves to an analysis as affixes.

information, together with lexemic information, and output fully inflected word forms, which occupy positions in the c-structure.

In section 1, the two alternative views of the morphology-syntax interface will be compared. Sections 2 and 3 present the relevant facts of two Romance languages, one without the partitive affix and one with it. The distribution of this affix in Catalan is described in section 4. The realization rule for the partitive affix is proposed in section 5. An explanation for the covariation between the two types of languages (with and without the partitive affix) is proposed in section 6 and, in section 7, reasons are given for choosing between the two views of the morphology-syntax interface.

1 Two alternative views of the morphology-syntax interface

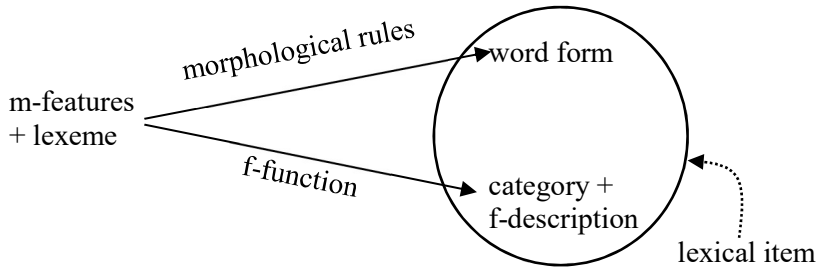
The standard view of the morphology-syntax interface in LFG is that words are formed in a module separate from syntax (the lexicon) and inserted in the syntax as fully inflected forms. This implies that word formation rules cannot have access to the information present in the syntactic structures in which the words appear. Words carry syntactic information for constructing syntactic structures, but syntactic structures cannot impose restrictions on the form of words. This makes the relationship between morphology and syntax asymmetrical: the form of words may constrain the properties of syntactic structures, but syntactic structures may not constrain the form of words. It also suggests a sequential view of the two components: first, words are formed; then, syntactic structures are built using fully formed words. Using this temporal metaphor, we will refer to this view as Morphology-before-Syntax (MBS).

An alternative view is one in which the two components are parallel and interact with each other. Words constrain the properties of syntactic structures and syntactic structures constrain the form of words. This allows the rules of inflectional morphology to access syntactic information. The two components are not in a sequential relation: neither precedes the other, as they are both simultaneous. I will refer to this view as Morphology-Simultaneous-with-Syntax (MSS). This approach is consistent with the spirit of LFG, in which the various levels of representation are co-present and related to each other by mapping constraints, as it is with other frameworks, such as Jackendoff and Audring's (2020) Parallel Architecture.

Both views are compatible with a rule-based realizational approach to inflectional morphology, which will be assumed here (as in Matthews 1972, Anderson 1992; Stump 2001; Spencer 2013; and others). According to this approach, the phonological form of words is derived by applying a set of rules to a lexeme coupled with a morphosyntactic representation (MR) or set of morphosyntactic properties. A question that needs to be addressed when incorporating this approach to LFG is what would be the MR in LFG. The way this question is addressed within the MBS view is to introduce a new level of representation within the morphology or lexicon in the form of the morphosyntactic features of a word (*ms-features*). These features, such as person, number,

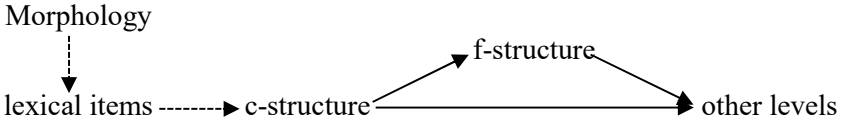
case, etc. have a direct correlate at f-structure. Ms-features are grouped with purely morphological features (e.g. declension classes) as *m-features* (Luís and Sadler 2003; Dalrymple, Lowe, and Mycock 2019; etc.). M-features allow us to derive the phonological form of the word by means of morphological rules and to assign a category and an f-description to the word by means of an f-function. The word form and the corresponding category and f-description make up the lexical item. The figure in (1) schematically represents the morphology in MBS, according to Dalrymple, Lowe, and Mycock (2019).

(1) Morphology in the MBS approach:



Within the MBS approach, lexical items, which are generated by the morphology, are inserted in the c-structure, which in turn maps onto the f-structure and the other levels of LFG, as schematically shown in (2). The different levels are not assumed to be independently generated, but are assumed to be projected from one another.[2]

(2) Morphology in relation to other levels in the MBS approach:



A criticism that can be made to this model is that the ms-features (which are part of the m-features) replicate the information in the f-description: there is massive redundancy between the ms-features and the information in the f-structure (a point also made in Alsina 2020).[3] This is an undesirable situation,

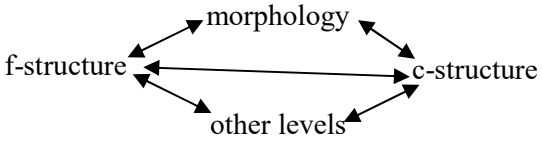
[2] There is some variation among researchers as to which level the various levels are projected from, but there is basic agreement in having c-structure as the level from which other levels are projected, with some levels being intermediate projections in a projection path (see Asudeh 2006).

[3] The ms-features and the f-description are both part of the lexical entry: they are formally distinct levels of information and yet conceptually identical. The m-feature 3 maps onto the annotation (↑PER 3), the m-feature SG maps onto (↑NUM SG), etc., without there being any substantive difference in what the two sets of features convey, which means that one of the two sets of features is redundant. The idea that there is redundancy, or a trivial mapping, between these sets of features is acknowledged by proponents of this conception, such as Sadler and Spencer (2001), who nevertheless

as it goes against the simplicity criterion that guides theory construction and against the LFG leading idea that information should be represented in only one level in the grammar, where it should be accessible to principles that refer to potentially more than one level. We should therefore explore ways to avoid repeating the same information in different places in the grammar.

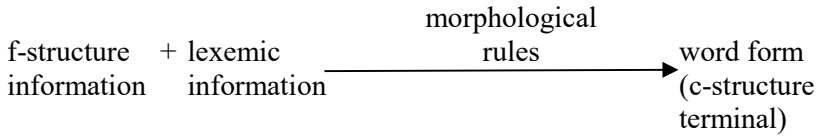
This can be achieved if we accept the idea that the f-structure can be the MR. We do not need to create a new representation: the f-structure fulfills this role without any changes to it. Since the MR has to be accessed by morphological rules, we can no longer assume that the morphology unidirectionally feeds the syntax. The morphology has to access f-structure information in order to produce the appropriate phonological form of words, which occupy positions in the c-structure. At the same time, the c-structure constrains the f-structure. This gives us a model—the MSS approach—in which c-structure, f-structure, and morphology, as well as other levels of representation, are parallel levels in a mutually constraining relationship. Each level of representation is independently generated and maps onto the other levels by means of correspondence principles, allowing the morphology to both constrain and be constrained by the f-structure, or MR, as shown in (3):

(3) Morphology in relation to other levels in the MSS approach:



The morphology in the MSS approach operates as schematically represented in (4). Morphological rules map f-structure information coupled with a specific lexeme onto a concrete word form, which occupies a c-structure X^0 position.[4]

(4) Morphology in the MSS approach:



In the MBS approach, much of the information in the f-structure is carried by the word as an f-description included in its lexical entry. In the MSS, in contrast, there is no such thing as the lexical entry of an inflected word. There are lexical entries of lexemes, which we may call lexemic entries in order to

argue for the need to have both sets on the basis of mismatches that occur in periphrasis. The analysis of such mismatches in the MSS approach awaits further research.

[4] An example is the rule that adds the suffix /z/ to a verb stem in English. The rule states: if the f-structure has the feature [TENSE PRES] and its SUBJ has the features [PER 3, NUM SG], /z/ is added to the stem of the element in V position. This gives forms such as *enjoys*; no rule is needed for *enjoy*, which is identical to the stem of the lexeme.

avoid confusion with the usual understanding of the term "lexical entry" in LFG. In the MSS, much of the f-structure information (which in the MBS is carried by the word) is licensed by rules: rules that optionally introduce features in the f-structure and vary from language to language.

We now turn to the comparative analysis of two Romance languages, with and without the partitive affix, in order to obtain evidence to choose between the two approaches to the morphology-syntax interface just outlined.

2 A Romance language without the partitive affix: Spanish

Spanish, along with Portuguese, is an example of a Romance language that lacks the partitive affix. There are two properties in Spanish that seem to be related. One is the absence of a partitive affix or any morphology that has a similar distribution to the partitive affix found in other languages and illustrated in section 3. Examples such as (5) show that Spanish can have indefinite object NPs without a head N and no morphology is needed to signal this situation. The underlined NPs in (5) have no head N and their semantic restrictor is interpreted as anaphorically dependent on another NP of the same grammatical gender present in the discourse, such as *cerezas* 'cherries'.

(5) a. *Silvia te da cerezas porque tiene muchas*.
Sylvia 2SG give.3SG cherries because has.3SG many
'Sylvia is giving you cherries because she has many.'

b. *No quiero ninguna que tenga agujeros*.
not want.1SG any that has.SBJV.3SG holes
'I don't want any one that has holes.'

The second relevant property is that, although Spanish in general does not allow null objects, it does allow null objects when they are indefinite.[5] A verb like *tener* 'have' requires an overt expression of its object if the object is definite: if there is no object NP, there must at least be a pronominal affix (often referred to as clitic) such as *lo*, as shown in (6a). But there may be no expression corresponding to an indefinite object, as in (6b).

(6) a. *Silvia no leyó tu libro porque no*
Sylvia not read.PST.3SG your book because not
**(lo) tiene*.
3SG.M.ACC has.3SG
'Sylvia did not read your book because she does not have it.'

b. *No te dio cerezas porque no tiene*.
not 2SG give.PST.3SG cherries because not has.3SG
'She did not give you cherries because she does not have any.'

[5] An indefinite expression is interpreted as non-specific when it lacks a determiner or quantifier, as is the case of the null object of *tiene* in (6b).

3 A Romance language with the partitive affix: Catalan

Several Romance languages, such as French, Italian, and Catalan, have a partitive affix, glossed here as EN.[6] Catalan will be used to illustrate this phenomenon, bearing in mind that there may be some differences in the use of this affix among the languages that have it. The partitive affix is typically required when the object NP is expressed as an indefinite determiner or quantifier, possibly followed by postnominal modifiers in the NP, as in (7):

(7) a. *La Sílvia et dona cireres perquè *(en) té moltes.*
the Sylvia 2SG give.3SG cherries because EN has.3SG many
'Sylvia is giving you cherries because she has many.'

b. *No *(en) vull cap (que tingui forats).*
not EN want.1SG any that has.SBJV.3SG holes
'I don't want any (with holes in it).'

In addition to having a partitive affix, Catalan does not allow null objects whether definite or not. If the object is definite and is not expressed as an NP, a definite pronominal affix is required, as in Spanish, as in (8a). If the object is indefinite and is not expressed as an NP, it is expressed by means of the partitive affix, as in (8b).

(8) a. *La Sílvia no ha llegit el teu llibre perquè no *(el) té.*
the Sylvia not has.3SG read the your book because not 3SG.M.ACC has.3SG
'Sylvia has not read your book because she does not have it.'

b. *No t' ha donat cireres perquè no *(en) té.*
not 2SG has.3SG given cherries because not EN has.3SG
'She did not give you cherries because she does not have any.'

4 The distribution of the partitive affix in Catalan

Descriptive grammars of Catalan state that the partitive affix is required when there is an indefinite object that lacks a head noun (IEC 2016: 697). Postverbal thematic subjects of unaccusatives are claimed to behave in the same way,

[6] The partitive affix is homophonous with what we may call the genitive affix, realized also as /n/ in Catalan, with an epenthetic vowel appearing before or after this consonant depending on the phonological context. The genitive use of this element corresponds to a verbal complement or to a complement of a verbal complement that is introduced by the preposition *de* 'of' in its phrasal expression. Since a unified analysis of the two uses of this affix does not seem possible, the genitive use of the /n/ affix will be ignored in this paper. An example of the genitive affix is given in (i):

(i) *De l' afix genitiu, te' n donaré aquest exemple.*
of the affix genitive, 2SG GEN give.FUT.3SG this example
'Of the genitive affix, I will give you this example.'

which suggests that they are objects, as assumed in Alsina and Yang (2018), following Perlmutter (1983), Rosen (1984), and Burzio (1986) for Italian, (also Alsina 1996 for Catalan), among others.[7] In a transformational approach, one might be tempted to analyze this affix as the head noun that "moves" out of an indefinite NP and attaches to the verb. Such an analysis is untenable, as there are many instances in which a headless indefinite NP occurs without the presence of the partitive affix. In the first place, there is no partitive affix when the indefinite headless NP is a preverbal subject or a prepositional object:

(9) a. *(De cireres,) moltes (*n') han sortit dolentes.*
of cherries many EN have.3PL come.out bad
'(As for cherries,) many have come out bad.'

b. *Aquesta salsa s' ha de fer amb moltes més.*
this sauce REFL has.3SG of make.INF with many more
'This sauce should be made with many more.'

This shows that the partitive affix is not required for all headless indefinite NPs. A necessary requirement for the partitive affix is that it correspond to an object GF. Yet, even with headless indefinite NPs that are objects, the partitive affix may be absent: this occurs when the semantic restrictor of the object is supplied by an expression that is not a discourse topic. There are four constructions in which a headless indefinite object NP occurs without the partitive affix:

a) The NP in question is the second (or subsequent) conjunct in a coordinate structure and its semantic restrictor is anaphorically dependent on a preceding conjunct.
b) The NP has a PP complement that supplies the semantic restrictor of the object.
c) The NP is immediately preceded by an adjunct which provides the object's semantic restrictor.
d) The determiner of the NP is a pronoun that provides the restrictor of the object.

The first case is illustrated by (10a), where the headless NP *una de blanca* 'a white one' is a conjunct in a coordinate structure and is interpreted as having the same semantic restrictor as the preceding conjoined NP.[8] In (10b), which

[7] The relevant notion of object is that of non-dative object (which includes both nominative and accusative objects in the analysis of Alsina and Yang 2018), as dative objects never trigger the partitive affix. Alsina and Yang (2018) claim that the phenomenon affects postverbal thematic subjects of intransitive verbs in general, not just those of unaccusative verbs.

[8] Some of the following examples given as ungrammatical with the partitive affix may be grammatical with the genitive use of the affix, irrelevant here, given an appropriate antecedent. The grammaticality of such examples is independent of the presence of a headless NP, which is one of the necessary conditions for the partitive affix. An example such as *En tinc una bandera negra* may be acceptable if we can identify an

exemplifies the second case, the headless NP consists of a determiner and a PP and it is this complement that provides the restrictor for the whole NP. In (10c), an example of the third case, the adjunct *com a idioma principal* 'as the main language' supplies the restrictor for the immediately following headless NP. A pronoun such as *ningú* 'no one' or *algú* 'someone', as in (10d), is a determiner, as argued in Alsina (2011), and it is the determiner that provides the restrictor for the NP that contains it and lacks a head noun.

(10) a. *(*En) tinc una bandera negra i una de blanca.*
EN have.1SG a flag black and one of white
'I have a black flag and a white one.'

b. *Només (*en) conec alguns dels seus amics.*
only EN know.1SG some of.the 3SG.POSS friends
'I only know some of his/her friends.'

c. *Aquesta web (*en) té com a idioma principal un de diferent.*
this web EN has.3SG as language main one of different
'This web has a different one as its main language.'

d. *No (*en) conec ningú.*
not EN know.1SG anyone
'I don't know anyone.'

In all of these cases, the semantic restrictor of the headless NP object is provided by a rhematic constituent, namely, a word or phrase in the VP, with the understanding that syntactic constituents in the VP are rhematic, or new information, in Catalan (Vallduví 2012). If the restrictor of the indefinite object is not provided by a rhematic (postverbal) constituent, the partitive affix is required. This is exemplified in (11), where the headless NP object is anaphoric with a discourse antecedent, with which it shares its restrictor:

(11) a. *(De bandera), *(en) tinc una de blanca.*
of flag EN have.1SG one of white
'(As for a flag), I have a white one.'

b. *(Dels seus amics), només *(en) conec alguns.*
of.the 3SG.POSS friends only EN know.1SG some
'(Of his/her friends), I only know some of them.'

c. *(Com a idioma principal), aquesta web *(en) té un*
as language main this web EN has.3SG one

appropriate antecedent for the genitive affix, such as *de seda* 'of silk', so that it would mean 'I have a silk black flag'.

de diferent.
of different
'This web has a different one as its main language.'

d. *No *(en) conec cap.*
not EN know.1SG any
'I don't know anyone.'

The difference between (10d) and (11d) is that, although both *ningú* 'no one, anyone' and *cap* 'no/none, any' are determiners and constitute NPs on their own, the former contributes a semantic restrictor ('a human') to the GF it is part of, whereas the latter does not contribute a semantic restrictor, so that the GF it belongs to is interpreted as anaphoric with some discourse antecedent with which it can share its semantic restrictor.

5 The rule of the partitive affix

The facts presented in section 4 reveal the following descriptive generalization:

(12) **Generalization about the partitive affix**: The partitive affix is attached to a verb whose direct object is indefinite and anaphoric with a discourse topic.

The anaphoric relation in this case is one in which the two elements in the relation share their semantic restrictor. It follows that the object mentioned in (12) is headless (i.e., lacking a head noun), because, if there was a head noun, the object would not be anaphoric with a discourse topic.

The analysis to be developed rests on two assumptions. First, elements traditionally called clitics in Romance, including the partitive affix, are affixes attached to the verb of their clause: see footnote 1 for relevant references. This means that a sequence such as *en té* in (11c) is a word, a structure with morphological integrity, represented as an X^0 in the c-structure. Second, word forms are constructed in a module specifically dedicated to this purpose, the morphology, whose principles are different from those that regulate the c-structure of phrases, in agreement with the lexical integrity principle (Bresnan and Mchombo 1995: 182), and the relation of this module to the syntax and the other levels of LFG is that of the MSS, as reflected in (3).

In this view, morphological exponents, such as affixes, are the realization of morphosyntactic properties that are represented in the syntax. The rules of word formation use as their input the information in the c- and f-structures. An inflectional word form, such as *en té*, is accounted for through a set of morphological realization rules that map syntactic information onto morphophonological information. The class of affixes known as clitics do not attach directly to a verb stem, but form a morphological constituent known as CCL (clitic cluster). The morphological realization rules assign the phonological representation of each of these affixes in the CCL. The order of affixes in the CCL is fixed and is often assumed to follow a template (see Bonet 1995). And

the CCL attaches to a verb either before it or after it: it precedes a finite non-imperative verb form and follows any other verb form.

Following is the morphological realization rule for the partitive affix, in which f-structure information, coupled with information structure (i-structure) information, maps onto morphophonological information:

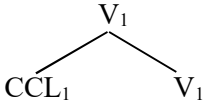
(13) **Partitive affix realization rule**:

$$f\begin{bmatrix} \text{OBJ} \begin{bmatrix} \text{PRED} & \text{`pro'} \\ \text{DEF} & - \end{bmatrix}_2 \end{bmatrix}_1 \quad \Rightarrow \quad [_{\text{CCL}} \ldots [\text{n}]_2 \ldots]_1$$

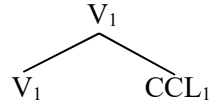
$$i\begin{bmatrix} \text{NEW} & \{\ldots [\text{RESTR} \ \alpha]_2 \ldots\} \\ \text{OLD} & \{\ldots [\text{RESTR} \ \alpha] \ldots\} \end{bmatrix}$$

According to this rule, an indefinite pronominal object whose semantic restrictor is identical to that of a discourse old expression requires the partitive affix /n/ in the CCL of the clause. The CCL and the verb of its clause form a word in one of the two configurations in (14). The CCL is prefixal, as in (14a), if the clause has the f-structure features [FIN +, IMPER –]; otherwise, it is suffixal, as in (14b).

(14) a.



b.



The object that rule (13) refers to is to be understood as a non-dative object, either accusative or nominative (see Alsina and Yang (2018)). Rule (13) refers to both f-structure and i-structure information (see Zaenen in press for a proposal about i-structure). Subscripts in (13) (and subsequent structures) indicate correspondence between different levels of structure: the indefinite pronominal object, at f-structure, is coindexed with a restrictor in the set of new discourse entities, at i-structure, and with the phonological representation /n/ in the morphological structure.

If the syntactic and i-structure information on the left of the arrow in (13) is met, the information on the right of the arrow must also be satisfied. Conversely, a morphological exponent cannot be used unless licensed by a morphological rule. This accounts for the fact that the partitive affix is required in examples such as (7) and (8b) and disallowed in (9) and (10). Examples (7a) and (8b) are repeated here as (15a,b):[9]

(15) a. *La Sílvia et dona cireres perquè *(en) té moltes.*
the Sylvia 2SG give.3SG cherries because EN has.3SG many
'Sylvia is giving you cherries because she has many.'

[9] Nothing prevents a speaker from repeating the noun that provides the restrictor in the appropriate NP position. So, instead of (15a), one could have *La Sílvia et dona cireres perquè té moltes cireres*, where rule (13) does not apply as the object is not pronominal.

b. *No t' ha donat cireres perquè no *(en) té.*
not 2SG has.3SG given cherries because not EN has.3SG
'She did not give you cherries because she does not have any.'

The object of *té* 'have' in (15) is an indefinite pronoun and its restrictor has the same value as that of another expression already present in the discourse, in this case, *cireres* 'cherries' in the main clause. By rule (13), the partitive affix /n/ is required; its absence would violate the rule. The main difference between (15a) and (15b) is whether the object of *té* is expressed as an NP or not: (15a) has the object NP *moltes* 'many', but there is no NP corresponding to the object in (15b). Thus, while we can assume that the relevant f-structure features needed for the application of rule (13) are provided by the lexical item *moltes* and its position in the c-structure in (15a), there is no element in the c-structure in (15b) that can provide the necessary features for rule (13). We therefore assume that f-structure features are either lexically assigned (provided by one or more lexical items and the rules triggered by them) or assigned by rule. In (15a), the information that the f-structure has an OBJ with the features [PRED 'pro', DEF –] comes from the word *moltes* and its position in the c-structure; these features are lexically assigned.[10] In (15b), these same features are assigned by rule.

Whether certain features can be assigned by rule or not is a locus of cross-linguistic variation. In languages like Catalan or Spanish, the object of a verb can acquire its [PRED 'pro'] feature, as well as its definiteness, gender, and number features, among others, by rule. In this way, a clause that has no NP that can fill the object function, such as the embedded clause in (15b), satisfies the object requirement by having the necessary features supplied by rule. The partitive affix rule (13) maps these features onto the phonological representation of the affix. In contrast, a language like English does not allow the features of an object to be supplied by rule, which accounts for the fact that the translation of (15b) requires the presence of an NP in object position, in this case, the NP *any*, as shown by the ungrammaticality of (16):

(16) * She did not give you cherries because she does not have.

The absence of the affix in (9a) or (10b), repeated here as (17a) and (17b) respectively, follows from the fact that rule (13) cannot apply here.

[10] The feature [PRED 'pro'] is an optional specification in the lexical entry of the lexeme *molt* 'much, many', whose feminine plural form is *moltes*. The optionality of this feature allows the quantifier to co-occur with a head noun in the NP, as in *moltes cireres* 'many cherries, or without a head noun, as in (15a). The difference between this quantifier and others such as *poc* 'few', *massa* 'too many', *més* 'more', and the cardinal numerals *dos/dues* 'two', *tres* 'three', *quatre* 'four', etc. is not syntactic, but strictly semantic: they make a different contribution to the semantics.

(17) a. *(De cireres,) moltes (*n') han sortit dolentes.*
of cherries many EN have.3PL come.out bad
'(As for cherries,) many have come out bad.'

b. *Només (*en) conec alguns dels seus amics.*
only EN know.1SG some of.the 3SG.POSS friends
'I only know some of his/her friends.'

The f-structure of (17a) does not include an object. Even though the NP *moltes* 'many' is an indefinite pronominal expression, it is in topic position and is anaphorically linked to the (null pronominal) subject of *sortit* 'come out'. In (17b), the headless indefinite NP *alguns dels seus amics* 'some of his/her friends' is in object position, but its restrictor is not provided by a discourse-old entity, or topic, but by the discourse-new entity expressed by the PP contained in that NP. Given that rule (13) cannot apply in such cases licensing the partitive affix, the partitive affix is not allowed.

6 Explaining the cross-linguistic variation

We have seen two differences among Romance languages that are relevant here. First, there is a morphological difference: some languages have the partitive affix (e.g. Catalan) and some lack it (e.g. Spanish). The Catalan example (15a) can be compared to the equivalent Spanish example (5a), repeated here as (18).

(18) *Silvia te da cerezas porque tiene muchas.*
Sylvia 2SG give.3SG cherries because has.3SG many
'Sylvia is giving you cherries because she has many.'

Whereas (15a) obligatorily includes the partitive affix *en* attached to the verb *té* 'have', as required by rule (13), there is nothing corresponding to this affix in the Spanish example. In both cases, the sentence with the verb *té/tiene* 'have' has a headless indefinite object NP whose restrictor is anaphorically dependent on a discourse antecedent (plausibly, *cireres/cerezas* 'cherries').

And, second, there is what looks like a syntactic difference: Spanish allows null objects if indefinite; Catalan never allows null objects, if we take the partitive affix to be the expression of the object. This is illustrated by Spanish (6b) and Catalan (8b), repeated as (19a) and (19b) respectively.

(19) a. *No te dio cerezas porque no tiene.*
not 2SG give.PST.3SG cherries because not has.3SG
'She did not give you cherries because she does not have any.'

b. *No t' ha donat cireres perquè no *(en) té.*
not 2SG has.3SG given cherries because not EN has.3SG
'She did not give you cherries because she does not have any.'

The two differences are intuitively related and the analysis should capture this relationship. However, the MBS approach has no way to explain the claim

that, a language that uses affixal morphology as a means to express pronominal objects should allow null indefinite objects only if it lacks the partitive affix.[11] The MSS approach, on the other hand, captures this dependency automatically. As we shall see, in the MSS approach to be developed, there is a null object in both (19a) and (19b), in contrast with the standard LFG and MBS idea that there is a null object in (19a), but not in (19b).

In MBS, in a language with the partitive affix, the f-structure and i-structure information associated with the affix, as given in rule (13), has to be part of the lexical entry of the word that includes the affix, with [PRED 'pro'] as an optional feature. This would allow the partitive affix to co-occur with an object NP, as in (15a), as well as to function as the sole exponent of an object, as in (19b).[12] In contrast, in a language without the partitive affix, not only is there no partitive affix, but we also have to supply verbs with the means to have a null indefinite object. The possibility of having null objects does not follow in any way from the absence of the partitive affix in MBS. We would need to say that all verbs optionally carry the specifications (↑OBJ PRED 'pro') and (↑OBJ DEF −).

Thus, there are two independent differences in the MBS approach between the two types of languages, which are the binary valued parameters of variation stated in (20). Crossing the values of these parameters gives rise to four types of languages, which are shown in (21). Only two of these types are attested among the Romance languages.[13]

(20) Parameters of variation in the MBS approach

a. Partitive affix. Does the language have an affix associated with the features in (13)? Values: yes/no.

[11] This claim is to be understood as restricted to languages that use verbal affixes as exponents of pronominal objects, as the partitive affix is one of these affixes. A language that lacks verbal affixes for objects, like English, naturally lacks a partitive affix; so, the claim is irrelevant for these languages. The Romance languages all have verbal affixes to express objects, but only a subset of these languages have the partitive affix. As pointed out by an anonymous reviewer, one should check for the validity of this claim beyond the Romance languages. Bantu languages could provide a testing ground for this claim, as, in general, they have verbal affixes as a means to express objects. I leave it to further research to explore the relevant facts of Bantu languages.

[12] In order to capture the fact that the partitive affix is obligatory when it occurs with an indefinite headless NP, as in (15a), we would need to resort to morphological blocking, but see section 7 for an objection to this idea. Notice that, if the partitive affix were treated as a true clitic (an independent word), this account of its obligatoriness would not be available; in addition, we would go against the evidence for the affixal status of so-called clitics in Romance summarized in footnote 1.

[13] The scope is restricted to the Romance languages for two reasons. These languages are sufficiently similar to each other so that we might expect the relevant parameters of variation to be as few as possible. And they all use verbal affixes (aka clitics) to express pronominal objects, such as the partitive affix, where it is found.

b. Null indefinite object. Does the language allow verbs to carry the features (↑OBJ PRED 'pro') and (↑OBJ DEF −)? Values: yes/no.

(21)

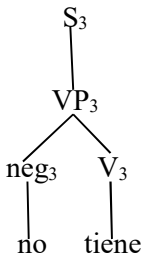
Combinations of parameter values within MBS		Examples among the Romance languages
(20a): yes	(20b): yes	unattested
(20a): yes	(20b): no	Catalan
(20a): no	(20b): yes	Spanish
(20a): no	(20b): no	unattested

The facts in each of the two languages illustrated here can be accounted for in MBS, but the fact that only two of the four possible combinations of properties is found among the Romance languages cannot be accounted for. There is no way to exclude the unattested types of language without additional stipulations: a language with the partitive affix that allows null indefinite objects (a language like Catalan except that the partitive affix is optional in sentences like (19b)) and a language without the partitive affix that does not allow null indefinite objects (a language like Spanish except that sentences like (19a) would be ungrammatical). This is because, in MBS, we can associate syntactic properties with a specific morphological exponent, but we cannot associate syntactic properties with the absence of a specific morphological exponent.

The MSS approach, on the other hand, predicts exactly two situations with respect to the phenomena under consideration: either the language has the morphological realization rule for the partitive affix (13) or it does not. If it does, the language has the partitive affix, whether there is an object NP in the clause or not. If it does not, the language lacks the partitive affix, whether there is an object NP in the clause or not. A single parameter of variation yields two possible languages: a language with the partitive affix and a language without it, exemplified here by Catalan and Spanish, respectively.

In MSS, there is not a morphological difference and a syntactic difference between the two languages: there is just a morphological difference. If we assume that the f-structure features of an indefinite pronominal object can be supplied by rule, the two languages have the same f- and c-structures, ignoring the word forms that occupy the terminal nodes in the c-structure. The only difference is whether the language has a morphological rule that assigns an exponent to these features or not. Consider the examples in (19), where there is no NP corresponding to the indefinite object in the embedded clause. The c- and f-structures of the embedded clause *no tiene* (Spanish) and *no en té* (Catalan) 'she does not have any' are as shown in (22):

(22)
$$\begin{bmatrix} \text{NEG} & + \\ \text{PRED} & \text{‘have} < \text{ARG1}_1 \ \ \text{ARG2}_2 > \text{’} \\ \text{SUBJ} & \begin{bmatrix} \text{PRED} & \text{‘pro’} \\ \text{DEF} & + \\ \text{PERS} & 3 \\ \text{NUMB} & \text{SG} \end{bmatrix}_1 \\ \text{OBJ} & \begin{bmatrix} \text{PRED} & \text{‘pro’} \\ \text{DEF} & - \end{bmatrix}_2 \end{bmatrix}_3$$



no tiene (Spanish)
no en té (Catalan)

Notice that the c- and f-structures assumed here are essentially the same as those that would be assumed in MBS, such as Dalrymple, Lowe, and Mycock (2019). In this respect, the present proposal differs from other proposals, such as Melchin, Asudeh, and Siddiqi (2020), in which the c-structure is more complex.

7 Choosing between the two approaches to the morphology-syntax interface

The main argument presented in this paper in favor of the MSS approach to the morphology-syntax interface over the MBS approach standardly assumed in LFG is that only the former can account for the co-variation observed cross-linguistically concerning the presence or absence of the partitive affix in the Romance languages. These languages vary with respect to whether they have the partitive affix or not; they also vary with respect to whether they allow null indefinite objects without a morphological exponent of the object. These two properties do not vary independently of each other.

The MBS approach can account for the relevant facts in each of the languages by assuming two unrelated and independent properties of the grammar: some languages have the partitive affix and some do not; some languages allow verbs to carry the necessary features to have null indefinite objects and some do not. The combination of the two settings of these parameters of variation gives rise to four types of languages two of which are not attested. Thus, the MBS approach cannot account for the co-variation noted, as, without further stipulation, it predicts that the two unattested types of languages are as much to be expected as the two attested types.

The MSS approach, on the other hand, not only accounts for the relevant facts in the various languages, but predicts that, of the four types of languages defined by crossing the parameters of variation of the MBS approach, only two are possible, the two that are attested. The reason is that, in the MSS approach, there is only one parameter that can vary in the Romance languages. In these languages, pronominal objects can be expressed by means of verbal affixes. For this reason, the f-structure features necessary for affixal objects (affixes as morphological exponents of objects) are licensed by rule. This includes features such as person, gender, number, definiteness, case, and [PRED ‘pro’]

of objects. Morphological rules map specific feature combinations onto affixes (see Alsina 2020 for a proposal). For example, in a language like Catalan, if an object has the features [PRED 'pro', PERS 1, NUMB SG], a morphological rule requires this feature structure to map onto the phonological representation /m/ in the CCL. Likewise, if an object has the features [PRED 'pro', DEF −] and its semantic restrictor is identified with that of a discourse-old participant, a morphological rule—rule (13)—requires it to map onto the phonological representation /n/ in the CCL.

For the morphological rule, it is irrelevant whether those features are lexically assigned or assigned by rule. If the features are lexically assigned, there is a lexical item, at least, in the c-structure that carries these features and so we have an object NP such as *moltes* 'many'. If the features are assigned by rule, there may be no lexical item in the c-structure corresponding to these features and so no object NP. In both cases, rule (13) applies requiring the CCL (and therefore the verb to which the CCL attaches) to include the partitive affix. In a language with the partitive affix, it may give the impression that there is no such thing as a null indefinite object, if we take the partitive affix to be the expression of the object. But, in MSS, the partitive affix, like other pronominal affixes, is not an incorporated object, but merely the exponent of certain features of the object.[14] If there is no constituent corresponding to the object, even if this object triggers the application of rule (13) so that the partitive affix is present, we have a null object.

The only difference between a language with the partitive affix and one without it is that the latter lacks the morphological rule –such as rule (13)– that assigns the phonological representation of the partitive affix. Whether the structure has an object NP such as *muchas* 'many' or has no object NP, there is no partitive affix. This may give the impression that the language allows null indefinite objects, which is a true impression according to the MSS approach. But this is also true for languages with the partitive affix.

The idea that languages without the partitive affix, such as Spanish, allow null indefinite objects, whereas languages with the partitive affix, such as Catalan, do not is just an artifact of the MBS approach. MBS assumes that a word containing the partitive affix carries the information associated with the affix (in the form of annotations or equations for constructing the f-structure, the i-structure, etc.), which is basically the information present in (13). If we say that the word carrying the object annotations is the c-structure realization of the object, then the word containing the partitive affix is the expression of

[14] Notice that this treatment of pronominal affixes is different from that assumed in Bresnan and Mchombo (1987) and most subsequent work in LFG, including Bresnan, Asudeh, Toivonen, and Wechsler (2016), according to which the pronominal affix is the object, rather than just a spell-out of the features of the object. See Alsina (2010: 14) for a proposal to account for systems in which pronominal affixes and independent pronouns cannot co-occur, such as Chichewa or Italian.

the object, which implies that there is no null object if the verb includes the partitive affix in MBS.

Likewise, in MBS, in a language that does not have the partitive affix, verbs should not carry the information associated with the partitive affix. But, if nothing further is said, verbs should not allow null indefinite objects. To allow for this, MBS needs to assume that verbs can carry the necessary annotations for licensing a null indefinite object. But these annotations have to be restricted to languages without the partitive affix. If they were extended to languages with the partitive affix, then we would incorrectly predict that such languages should have null indefinite objects without a co-occurring partitive affix. As we see, the MBS artifact that some languages have null indefinite objects and some do not is an unnecessary complication, as it needs to be constrained by additional stipulations.

The simplicity criterion provides additional arguments for MSS over MBS: (a) MSS avoids repetition of information; (b) it dispenses with the Morphological Blocking Principle (Andrews 1990); and (c) it allows us to dispense with constraining equations.

(a) As pointed out in in section 1 (see also Alsina 2020), MBS has to repeat the f-structure features needed for inflectional morphology as m-features, creating massive redundancy in the grammar. If we were to adapt the analysis of the partitive affix in this paper to MBS, this repetition would not only affect the f-structure features used in rule (13), namely, OBJ, PRED, and DEF, which would have to have a counterpart as m-features, but also the i-structure information concerning old and new information. I-structure information is beyond the word; so, it is inaccessible as such to word formation within MBS, which means it would have to be repeated as m-features in order for an affix to refer to it. This repetition of information from structures beyond the word as word-internal information not only goes against Occam's razor, but against the spirit of LFG, which claims to factor linguistic information into different levels all of which are simultaneously accessible. The present proposal, within MSS, makes this claim true.

(b) One of the problems of MBS is the obligatoriness of certain affixes. Affixes that are attached to words that can function without those affixes, as is the case of the affixes commonly referred to as clitics in the Romance languages, are obligatory in certain syntactic contexts. An affix like this generally adds information to the word, but the word without the affix could be used in the same syntactic context without violating any general principle. So, what is it that makes the affix obligatory in the contexts in which it can be used? The widely accepted solution to this problem is the Morphological Blocking Principle, or MBP, of Andrews (1990), which requires the more informative word form to be used if it can be used. The present analysis of the partitive affix within MSS does not need to resort to an additional principle, such as the MBP, in order to account for the fact that the affix is obligatory whenever it can be used: this is a consequence

of the claim that a morphological rule, unless stipulated to be optional, applies whenever it can requiring the affix to appear (see also Alsina 2020). Notice that dispensing with the MBP is a welcome result not only because of the simplicity criterion, but also because it has been shown to create problems with the analysis of periphrases by Sadler and Spencer (2001). The MBP predicts periphrases to be impossible if it is understood to imply that "when morphology and syntax are in competition it's morphology which has precedence."

(c) Standard LFG makes a distinction between defining and constraining equations. Structures are built by putting together the information in defining equations, whereas constraining equations impose requirements on the structure. Constraining equations are often used to signal that a given inflected form requires the presence of a particular feature introduced by some other form. In MSS the inflectional morphology of a word does not impose requirements on the structure in which the word is used, but rather it is the spell-out of specific features present in the f-structure. Thus, constraining equations, which are a formal complication of the framework, have no place in the MSS approach.

Once all of this is taken into consideration, it is clear that the MSS approach is to be preferred over the MBS approach. No argument seems to favor the MBS claim that morphology operates without the input of the syntactic structures in which words are used.

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