

EPP variation: Locative Inversion in English and Spanish

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Abstract: This paper analyses the structural properties of locative inversion, a construction where the UG intentional feature [DI] (*discourse intention*) is valued by a locative phrase, thus obtaining an event-reportingthetic statement which describes an eventuality framed in some spatio-temporal coordinates. I argue that the differences between Spanish and English in the construction can be explicitly accounted for in terms of the different locus of [DI] in each language: in Spanish, [DI], an edge feature in C, is inherited by T and this makes locative inversion one of the unmarked possibilities for EPP-satisfaction; in English, on the contrary, [DI] remains in C, and this makes locative inversion a context-dependent operation heavily restricted by pragmatic factors. I also discuss some implications of the analysis, particularly the conflict between computational economy and interface economy in certain derivations and the empirical predictions which follow from this fact.

Keywords: Locative inversion; discourse intention;thetic statement; parametric variation; EPP

1. Introduction

One of the programmatic assumptions of the Minimalist Program, as defended in Chomsky (1995) and subsequent work, is that languages incorporate a computational mechanism that generates a number of expressions which are transferred for interpretation to two interfaces: the sensory-motor system and the conceptual-intentional system. This way, the linguistic mechanism generates usable structures, i.e. expressions which are pronounceable, make a contribution to the LF (i.e. they are interpretable) and are discourse-legible (i.e. they are intentionally adequate). One of the goals of the linguistic theory is then to explain how the formal system connects with the systems of use and which possibilities of variation across languages are opened in the relevant interfaces.

Along these lines, this paper explores a possible source of linguistic variation which involves, not a formal feature, but an interface feature which is informational in nature: the core intentional feature [DI] (*discourse intention*). I first define core intentional features in general and the feature [DI] in particular, and I describe the process of valuation of this feature; for this, I summarize my proposals in Ojea (2017). In section 3 I use the process of locative inversion (LI) in English and Spanish to explore the structural consequences which follow from a parametric difference in the locus of the feature [DI]. In doing so, I address the tension between computational economy and interface economy in LI, and the mechanisms that the two languages employ to compensate for it. Section 4 offers some conclusions.

2. Core intentional features.

In Ojea (2017) I proposed that all sentences have an intentional structure which necessarily includes at least two so-called core intentional features: [DI] (*discourse intention*), which marks the point of departure of the proposition and [IF] (*intentional focus*), which marks its intentional focus in the sense of what Kiss (1998) termed *informational focus* (i.e. the nonpresupposed information marked by one or more pitch accents; cf. Kiss 1998: 246).

Core intentional features (CIFs), though informational in nature, should be distinguished from standard pragmatic features such as *topic* or *focus*, even though both types interact in a crucial way (see below). While pragmatic features are optional and strictly context dependent, CIFs are part of our grammatical competence and, as such, they belong to the inventory of UG and are subject to parametric variation. The implication is that CIFs have the same status in the derivation than formal features: both of them co-operate to obtain a fully convergent object and both of them determine linguistic variation. As for their placement, the assumption is that CIFs sit in the relevant phases, which means, if one adopts the static approach to phases in Chomsky (2008), that there will be (at least) one CIF in CP and one in v*P. Here I will focus on the CIF in CP, the feature [DI], which marks the *intentional base* of a proposition (i.e. its point of departure) and serves to organize the intentional structure so that it fits one of the two points of view from which a state of affairs can necessarily be regarded:¹

¹ The idea that statements must necessarily be categorical orthetic started with the philosophers Brentano and Marty in the 19th century and gained syntactic relevance after the work of Kuroda (1972). This categorical/thetic distinction is cross-linguistically reflected in the grammatical component, either structurally (syntactically or morphologically) or phonologically (see Sasse 1987, Ladusaw 2000 and Breul 2004 for references and discussion).

a) as a categorical statement, an intentionally bipartite structure where an entity is named (the logical subject) and something is predicated about it (the logical predicate).

b) as an event-reportingthetic statement, a single intentionally-unstructured complex which merely expresses a state of affairs located in some spatio-temporal coordinates.

Since [DI] marks the point of departure of the proposition, we expect a categorical statement to obtain when [DI] is valued by a category which embodies an entity (i.e. a referential DP) and athetic statement to follow when [DI] is valued by some locative category which frames the event in place or time.² Any attempt to formalize the role of core intentional features in the derivation must then determine what forces one category over the other to be the intentional base and how exactly this process of valuation is effected.

2.1 Valuation of [DI]

The proposal in Ojea (2017) is that valuation of [DI] is always done on prominence conditions, but these conditions are different when the sentence is context-free than when it is context-sensitive.

In the former case, that is, in sentences which inaugurate the discourse or constitute a discourse in themselves (*d-sentences*), valuation of [DI] will be regulated by the computational mechanism, only attending to the particular output of external merge: the most prominent constituent structurally after E-merge will be targeted to value [DI] i.e. will be the intentional base of the sentence. Valuation of [DI] in *d-sentences* is then a matter of computational efficiency, an optimal way to link the structure obtained after E-merge with the intentional module.

On the contrary, in those sentences which are integrated in a particular communicative situation, valuation of [DI] will be regulated by the pragmatic component: the most prominent constituent pragmatically will be targeted to value [DI]. As is standardly assumed, when a sentence is in context, constituents are endorsed with pragmatic features that signal them as some type of [topic] or [focus], activated by previous discourse conditions. With respect to topics, here I adopt the classification in Frascarelli and Hinterhölzl (2007) and Bianchi and Frascarelli (2010), where a distinction is made among A(boutness-shift) topics, C(contrastive) topics and G(iven) topics. As defined there, A-topics and C-topics pertain to the dimension of CG management (Krifka, 2007), that is, they mark the sequence of conversational moves that condition the development of the common ground (i.e. the part of the information state shared by the speaker and the hearer at a given point); on the contrary, G-topics relate to the dimension of CG content, that is, the truth-conditional information accumulated up to a given point in the conversation. Thus understood, G-topics do not affect the conversational dynamics and show the highest degree of connection with the common ground; actually, Bianchi and Frascarelli (2010) contend that they are always contextually entailed and co-refer with a salient antecedent. If a constituent is labelled as a [G-topic] this constituent will therefore be the most prominent pragmatically, prominence understood here as explicit connection with the common ground.

2.2 Parametric variation.

As argued above, [DI] is an UG feature which guides all derivations (i.e. all sentences must have a discourse intention), and, as expected, is subject to parametric variation. It must be treated as an edge feature which sits in a phasal functional category and makes it a probe. In Chomsky's standard models, TP is not a phase but can inherit (some) edge features from C. In this respect, Jiménez-Fernández and Miyagawa (2014) proposed that languages can be classified as agreement prominent or discourse prominent on the basis of which type of features —formal features or discourse features— are inherited by T from C. The term *discourse feature* in Jiménez-Fernández and Miyagawa's (2014) system means *pragmatic feature*, that is, *topic* and *focus*. Their theory therefore predicts that any constituent annotated as some type of topic or focus may eventually sit in [Spec, TP] in discourse-prominent languages.³

I adopt their proposal here but restricting the discourse features that may constitute a source of parametric variation to core intentional features, the only obligatory ones. Therefore, parametrically, T can inherit only formal features, only core intentional features or both.

Spanish is, in this respect, a language in which TP inherits both, the formal features in C and the core intentional feature [DI]. Adopting standard vocabulary, I will call EPP features those edge features which force internal merge in TP. As standardly assumed in the relevant literature (cf. Contreras 1991; Olarrea 1996; Ayoun 2005; Villa-García 2018, among others), the formal features inherited by T in Spanish are not EPP-features: they attract the verb but only establish an Agree relation (with no further attraction) with the DP subject, that is, the DP bearing Case, person and number features in its local c-c domain.⁴ Therefore the DP subject can remain


² The need for the DP to be referential in categorical statements follows from the presuppositional status of the intentional base in this type of judgements (see Ojea 2017 for details).

³ In the theory of core intentional features defended here, on the contrary, only referential DPs or locative constituents, when they constitute an adequate intentional base (i.e. when they are the most prominent in the relevant sense), can occupy this position; as for topics different from G-topics and foci, they must be merged in some functional projection in the CP space (see. Rizzi 1997, and related work, for the articulation of the left periphery of the sentence).

⁴ The term subject with no further specification is used here to refer to the DP which displays morphological agreement with the inflected verb.

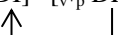
postverbally and value its ϕ -features and Nominative Case in its underlying position in the verbal projection (cf. Eguzkitza and Kayser 1999 for a discussion of the structural Case of postverbal subjects in Spanish). On the contrary, the core intentional feature [DI] inherited from C is an EPP feature in Spanish (i.e. the EPP is informational in nature in this language) and T must therefore probe an adequate goal to value it: as argued, the goal for [DI] must be either a DP expressing an entity (a categorical statement following) or a locative category framing the event in place or time (a thetic statement being obtained in this case):⁵

(1) $[_{CP} [_{TP} [DI] \quad DP / XP[loc]$



In the case of d-sentences, it is structural prominence that determines which category (nominal or locative) will be targeted as the intentional base. This means that the order of the constituents in d-sentences in Spanish will heavily depend on the type of predicate which heads the sentence. If one assumes that the VP projection is organized in terms of thematic prominence, the external argument (projected in the specifier of v*P) is structurally the most prominent constituent in the verbal phrase, given that it is the first potential intentional base in the closest c-c domain of T. As a result, with verbs which have an argument structure such as that in (2) (i.e. transitive (3) and unergative (4) verbs), the DP external argument will be targeted to [Spec, TP] to value [DI], and the sentence will unmarkedly have a SV order and a categorical reading:

(2) $[_{CP} [_{TP} [DI] \quad [_{v^*P} DP \quad [_{VP} V \quad PP[loc]...]]]]$



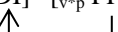
(3) (a) Irene ha publicado su libro en Anagrama.
 Irene have-PRS.3SG publish-PTCP.PRF her book in Anagrama
 (b) #En Anagrama ha publicado Irene su libro.
 In Anagrama have-PRS.3SG publish-PTCP.PRF Irene her book
 “Irene has published her book in Anagrama.”

(4) (a) El mendigo ha dormido en el parque.
 The beggar have-PRS.3SG sleep-PTCP.PRF in the park
 (b) #En el parque ha dormido el mendigo.
 In the park have-PRS.3SG sleep-PTCP.PRF the beggar
 “The beggar has slept in the park.”

Note that (3a) and (4a) are d-sentences and, therefore, they display the canonical order of constituents; (3b) or (4b), on the contrary, are clearly context-dependent, and can only be used in a communicative situation where the locative is understood as a contrastive focus (projected, then, in one of the categories of the CP domain).

A subset of verbal predicates in Spanish, such as *faltar*, *sobrar*, *ocurrir*, *haber*..., have a locative external argument (cf. Fernández Soriano 1990); this locative will then necessarily be the intentional base in d-sentences, which, as a result, will unmarkedly have a VS order and a thetic reading:

(5) $[_{CP} [_{TP} [DI] \quad [_{v^*P} PP \quad [_{VP} V \quad DP...]]]]$



(6) (a) En esta lista falta mi libro.
 In this list lack-PRS.3SG my book
 (b) #Mi libro falta en esta lista.
 My book lack-PRS.3SG in this list
 “My book is missing on that list.”


As before, a sequence such as (6b) can only be the result of focalization of the DP under specific contextual conditions (i.e. cannot be an all-new sentence).

Finally, if the verb lacks an external argument (i.e. in unaccusative structures), all the constituents in the verbal phrase are in the same minimal domain, which means that the DP and the locative PP are structurally

⁵ This latter option also includes the verb when it enters the numeration in the perfective (*escribió* ‘wrote’/*ha escrito* ‘has written’) or the progressive aspect (*está escribiendo* ‘is writing’), given that the aspectual morphology in these cases can be said to add a [loc] feature to the lexical structure of the verb (cf. see Ojea 2017 for details).

equidistant for the external attractor T and can therefore serve as the intentional base to be targeted into TP (cf. Chomsky 1995, Collins 1997 and Rizzi and Shlonsky 2006, among others):⁶

(6) [_{CP} [_{TP} [_{DI}] [_{VP} V DP PP...]]]



In Spanish, d-sentences with unaccusative verbs can therefore have a more flexible word order, with both orderings, SV as in (7a) and VS as in (7b), being equally unmarked:

- (7) (a) Los rosales no florecen en mi jardín.
 The rosebushes not flourish-PRS.3PL in mi garden
 (b) En mi jardín no florecen los rosales.
 In my garden not flourish-PRS.3PL the rosebushes
 “Rosebushes do not flourish in my garden.”

Examples (2), (3), (5) and (7) show that, in Spanish, structural prominence after the numeration determines the particular intentional base (DP or PP[loc]) to be targeted and thus both, the word order and the intentional structure of those sentences which are not inserted in a particular communicative situation.

English, on the contrary, is an agreement prominent language where T only inherits formal features from C, i.e. the EPP is formal in nature and always forces a DP bearing person and number features into [Spec, TP], no matter its structural prominence. Word order in d-sentences in English is, as a result, fixed, which means that derivations whose numerations are equivalent to those in (2), (3), (5) and (7) above will necessarily result in a SV order:

- (8) Irene has published her book in Anagrama.
 (9) The beggar has slept in the park.
 (10) My book is missing on this list.
 (11) Rosebushes do not flourish in my garden.

As for [DI], it remains in C in English and is therefore accessed at the interfaces. In particular, it is unmarkedly valued in the phonological component, with pitch reflecting the double (categorical) or single (thetic) intentional structure of the sentence: in categorical statements (12a), both, the subject and the predicate in VP, receive high pitch; in thetic statements (12b), only the subject does (cf. Sasse 1987):

- (12) a. [PEter] has [SMILED]
 b. [PEter] has died

Significantly, the phonological properties in (12) correlate with the type of verb which heads the sentence, similarly to the way in which word order in Spanish does: with transitive and unergative verbs—that is, with verbs which have an external argument—the sentence has a double pitch and the reading is unmarkedly categorical, whereas with unaccusatives—light verbs with no external argument—the sentence has a single pitch and the reading is unmarkedly thetic.

3. Locative Inversion

Under this approach, Locative Inversion (LI) can be analyzed as a syntactic operation, motivated for convergence with the intentional interface, where a locative phrase is targeted to value [DI] and obtain a thetic statement. I will provide a principled account of its structural properties along these lines, showing how the relevant contrasts between English and Spanish basically follow from the fact that LI is an (unmarked) option of EPP-satisfaction in Spanish but not in English.⁷

Most accounts of LI agree on the discourse value of this construction, which involves the anticipation of a locative setting more familiar in discourse terms than the DP subject which is (re) introduced in the scene. There

⁶ Unaccusative verbs have customarily been defined as semantically light verbs which have no external argument (cf. Perlmutter 1978; Burzio 1986; Levin and Rappaport 1995; De Miguel 1999; Irwin 2012, among others). The class is not uniform, though, and here I restrict to those unaccusatives which denote existence and inherently directed motion, since they pattern together with respect to locative inversion.

⁷ As will be made clear below, the construction does not involve a process of inversion as such, but a process which forces the subject to remain in its underlying position within the verbal phrase (from where it can be eventually extraposed to a sentence-final position; cf. Culicover and Levine 2001); I will nonetheless use the traditional term *locative inversion* for convenience.

have been, though, competing hypotheses about the landing site of the locative (TP or CP) and about the structural position of the subject (whether it remains in its underlying position or not).⁸

The predictions my theory makes in this respect are straightforward:

a) the landing site of the locative will vary parametrically depending on whether the language is agreement prominent, and therefore [DI] remains in CP, or discourse prominent, and thus [DI] is inherited by TP and constitutes an EPP feature. With respect to the two languages at stake here, English belongs to the former group and Spanish to the latter, and therefore the locative will end up in CP in English but in TP in Spanish.

b) the position of the subject will also depend on this parametric option: if the language is agreement prominent and the EPP formal in nature, the [Spec, TP] position needs be occupied by a DP category which values the formal features of T (i.e. the DP subject must necessarily be connected to this position); on the contrary, if the language is discourse prominent and the EPP informational in nature, the [Spec, TP] position can be unmarkedly occupied by a DP or PP_{loc} (i.e. the DP subject will only be connected to this position if it is the most prominent of the two). Again, English belongs to the former group and Spanish to the latter.

The main contrasts between Spanish and English in the construction are therefore expected to follow from the different properties of the core intentional feature [DI] in each language. In particular, the fact that [DI] is an EPP feature in Spanish makes locative inversion less restricted here than in English: LI in Spanish is not context-dependent, it is compatible with all type of verbs and it is not a root phenomenon (i.e. it is compatible with all types of clauses); English LI, on the contrary, will be more constrained in these three aspects.

3.1 LI is possible in d-sentences in Spanish but not in English

In Spanish the EPP, put bluntly, forces all sentences to have an intentional base in the narrow syntax and, therefore, LI is but one of the options available in the grammar to satisfy this principle and obtain a thetic reading. A locative phrase is actually the unmarked option to value the [DI] EPP feature in Spanish when it is the most prominent constituent structurally, that is, the external argument of the verb as in (5a) above, or equally prominent than the DP subject as in (7); these sentences, repeated here for convenience, can therefore be d-sentences and, as such, proper answers to the question *What's happened?*, standardly taken as an indicative that they are all-new:

- (13) En esta lista falta mi libro.
In this list lack-PRS.3SG my book
“My book is missing on that list.”

- (14) En mi jardín no florecen los rosales.
In my garden not flourish-PRS.3PL the rosebushes
“Rosebushes do not flourish in my garden.”

As expected, this is not an option in English, where the [DI] feature remains in C and is only accessed at the interfaces, that is, after the sentence has been pragmatically annotated in relation with the particular communicative situation in which it is inserted. The sentences equivalent to (13) and (14) will then never be possible as all-new utterances, as the English paraphrases show.

Since LI is a mechanism which forces a particular intentional reading of the clause, we expect it to be more productive in context-annotated sentences than in context-free ones. In this respect, one should bear in mind that, when in context, certain constituents are labelled as (some type of) topic and/or focus, and that these pragmatic features have a crucial role in the corresponding derivations, to the extent that valuation of the CIF [DI] is effected on pragmatic prominence in this case. As argued above, G-topics are pragmatically more prominent than the rest and, therefore, if a DP or a locative phrase is annotated as [G-topic] it will be targeted to value [DI] even if the necessary derivation is costly in computational terms. In other words, when the sentence is in context derivations must be evaluated on the basis not only of computational economy but also of interface economy (on the notion of interface economy, see Reinhart 2006). As I will show next it is precisely the tension between the two that brings about another important difference between the two languages.

3.2 LI is possible with all verbs in Spanish but just with certain verbs in English.

In Spanish, [DI] is an EPP feature and, therefore, as shown in (15), if a locative G-topic is targeted to be the probe with verbs which have an external argument (i.e. transitive or unergatives verbs) there can be an intervention problem:

- (15) [CP [TP [DI] [_{v*P} DP [_{VP} PP_{loc}[G-topic]...]]]]
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⁸ For different analyses of locative inversion, see Coopman (1989), Bresnan (1994), Birner (1996), Levin and Rappaport (1997), Culicover and Levine (2001), and Rizzi and Shlonsky (2006), among others.

Given that computational economy and interface economy clash here, we expect the construction to be allowed only if it constitutes an indispensable means to make the sentence fit in context, something that happens when the locative is d-linked through deixis to a contextual antecedent which the speaker wants to retake as the file card under which to organize the rest of the information (cf. Reinhart 1981). LI will then be possible in Spanish with any verb (including unergatives and transitive verbs, such as *conocer* ‘meet’ in (16)), provided the prepositional G-topic contains some explicit deictic mechanism, such as the demonstrative *esa* in (16a) or the adverb *precisamente* in (16b); a sequence as (16c), on the contrary, will only be possible if the locative is understood as a contrastive focus in CP (i.e. it is not a case of LI):

- (16) a. En esa biblioteca conoció María a su marido.
In that library meet-PST.3SG Mary at her husband
“In that library, Mary met her husband.”
- b. Precisamente en la biblioteca conoció María a su marido.
Precisely in the library meet-PST.3SG Mary at her husband
“Precisely in the library, Mary met her husband.”
- c. #En la biblioteca conoció María a su marido,
In the library meet-PST.3SG María at her husband
“In the library, Mary met her husband.”

In the case of English, targeting a locative G-topic into CP to value [DI] will be, in principle, computationally unproblematic if the derivation ensures that the (formal) EPP principle is satisfied. For reasons of space I cannot get into the specifics of the analysis here but suffice it to say that the need to satisfy the EPP in English forces a computationally-costly (c) covert expletive *there* in [Spec, TP], so that the formal features of T are valued whilst the DP subject stays in a VP-internal position, a requirement for it to be read as discourse new:⁹

- (17) [CP [DI] [TP EXPL [VP DP PP]loc[G-topic]...]]
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Therefore, LI will only be possible in English with verbs which are compatible with expletive *there*, that is, with copulative verbs, certain unaccusatives and unergatives which have been pragmatically emptied of semantic content along the lines in Guéron (1980) (see Irwin 2012 for details).¹⁰

3.3 LI is a root phenomenon in English but not in Spanish.

Finally there is a third difference between English and Spanish which determines the productivity of the construction and follows straightforwardly from the locus of [DI] in each language. In English, [DI] is in CP and thus LI is a root phenomenon disallowed in clauses which do not have an independent illocutionary force (i.e. infelicitous in the same structures which disallow embedded topicalization; cf. Stowell 1981):

- (18) *That on that chair was sitting your brother is undeniable.
(19) *If on that chair is sitting your brother, why don't you sit in the sofa?
(20) *I regret that on that chair had sat your brother.

On the contrary, in Spanish [DI] is an EPP-feature present in every sentence. Therefore the construction can be found in all kind of contexts, including non-assertive ones:

- (21) Que en esa silla estaba estado tu hermano es innegable.
That in that chair be-PST.3SG sit-PTCP.PFV your brother be-PRS.3SG undeniable
“That your brother was sitting on that chair is undeniable.”
- (22) Si en esa silla está sentado tu hermano,
If in that chair be-PRS.3SG sit-PTCP.PFV your brother
¿por qué no te sientas en el sofá?
Why not you sit-PRS.2SG in the sofa
“If your brother is sitting on that chair, why don't you sit in the sofa?”

⁹ Expletive *there* is a locative category which has traditionally been understood as a place holder in [Spec, TP] to satisfy the EPP in certain constructions; see Chomsky (2008) for the assumption that this expletive can be null in LI. Recent analyses of *there*-structures argue that the expletive is initially placed in the verbal phrase, where it is sensitive not only to the argument structure of the predicate but also to its lexical structure; this would, for example, serve to capture the (in)compatibility of certain classes of unaccusatives with *there* (cf. Deal 2009; Irwin 2012 and references therein).

¹⁰ Levin and Rappaport (1997) exemplify different cases of LI inversion with unergative verbs, all of which are semantically light in the particular contexts in which the sentence is inserted.

- (23) Lamento que en esa silla se hubiera sentado tu hermano.
 Regret-PRS.1SG that in that silla himself have-SBJV.PST.3SG sit-PTCP.PFV your brother
 “I regret that your brother had sat on that chair”

Again, the parametric difference between English and Spanish with respect to the feature [DI] serves to explain the different possibilities of distribution of LI in both languages.

4. CONCLUSIONS

I have approached locative inversion as a mechanism cross-linguistically available to obtain athetic statement where the subject is presented just as a participant in a situation framed by a locative constituent (i.e. not as the logical subject). This intentional reading requires a locative phrase to be targeted to value the core intentional feature [DI], understood here as a UG feature subject to parametric variation. I have shown that most of the differences between locative inversion in English and Spanish actually follow from a parametric difference between the two languages with respect to the placement of [DI]: it is an EPP feature inherited by T in Spanish, but not in English (where it remains in CP), and this determines the structural properties of the construction and its distributional restrictions. The proposal defended here in terms of the core intentional feature [DI] thus makes it clear the role of information structure as an integral part of the grammar, with no need to resort to a discourse-based articulation of the sentence (i.e. the focus structure in Erteschik-Shir 1997 or Breul 2004), something which eventually serves to maintain the programmatic distinction between grammatical and pragmatic competence even when dealing with the intentional articulation of the sentence.

Funding Acknowledgement

The research underlying this article has been partly funded by the Research Project FFI2013-41509-P of the Spanish Government (MINECO).

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