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Aspects of locative doubling and resultative predication¹

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0. Introduction

In this paper we argue (following Freeze 1992 and Lyons 1967, among others) that the sentences in (1a) and (1b) are both locative assertions.

- (1) a. *There are many problems.*
b. *There are many problems in the world.*

Specifically, we claim that the morpheme *there* in such sentences is like a clitic double of the locative PP (*in the world* in (1b)). Our paper is organized as follows: in section 1 we outline our proposal concerning the derivation of such sentences, and provide arguments for the claim that *there* is a clitic-like morpheme. In section 2 we show that the locative PP in (1b) is not an adjunct, but rather, the main predicate of the sentence. In section 3 we provide a tentative proposal for the status of sentences such as (1a) ("pure" existentials), in which no overt locative PP is present. In section 4, we discuss the fact that *there* is compatible with a semantically coherent subset of location-denoting unaccusatives, and show how this fact serves as evidence in favor of our proposal.

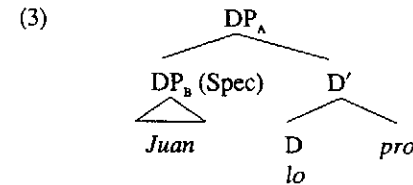
1. Locative doubling

1.1. The basic proposal

Following the work of Freeze (1992) (and references cited therein), we claim that both cases in (1) are essentially "locative" assertions, and that the existential interpretation of such sentences is derived from this more basic locative meaning. We propose that the morpheme *there* (and the clitic *ci* in similar constructions in Italian) is part of a "double" locative structure (2b), akin to clitic doubling structures in sentences such as that in (2a) (found in some varieties of Spanish).

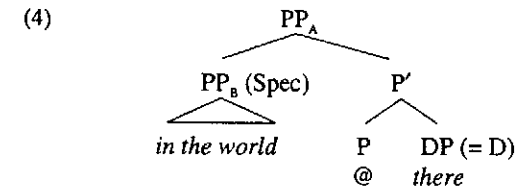
- (2) a. *Lo vi a Juan.*
him I-saw P Juan "I saw Juan."
b. *There are many problems in the world.*

Uriagereka 1995 (see also Cecchetto & Chierchia 1997 and Torrego to appear) argues that the direct object of the verb *ver* 'see' in (2a) is a DP (labeled here as DP_A) which contains both the clitic *lo* and the DP *Juan* (labeled here as DP_B):



As can be seen in (3), Uriagereka proposes that *Juan* is base-generated in the specifier position of DP_A, which is headed by the clitic *lo*.

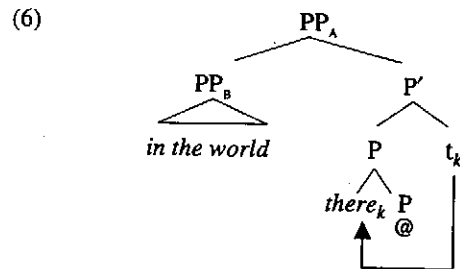
We would like to suggest here that the relation between the morpheme *there* and the locative PP *in the world* in (2b) can be expressed in the same way. In particular, we propose, on analogy with (3), that *there* and the PP are base-generated in a larger PP that contains both of these items:



Let us assume, following Moro (1997), that the larger PP (labeled here as PP_A) is the predicate of a small clause (SC) complement of the unaccusative verb *be* (the postverbal subject *many problems* is the subject of the SC):

- (5) — *be* [_{SC} [_{DP} *many problems*] [_{PP_A}]]

In (4), the PP_B *in the world* (like the DP_B *Juan* in (3)) is analyzed as doubled by *there*, and occupies the specifier position of PP_A. On analogy with Uriagereka's analysis of the clitic *lo* in (3), we propose that PP_A is headed by an abstract (phonologically null) preposition, which we will label "@". We take this preposition to have the same semantic content as the English preposition *at*; in other words, @' = λxλy [y is located at x]. On analogy with *pro* in (3), we propose that @ takes *there* as a complement. We assume that *there* can be analyzed either as an XP or as a head. We thus claim, following Chomsky (1995), that *there* is both minimal and maximal (see section 1.1 below). As can be seen in (6), we propose that *there* incorporates into the abstract preposition @, where it checks its locative feature:



Finally, along the lines of Moro (1997) and Tortora (1997), we propose that *there* raises to Spec, IP, as can be seen in (7) (see footnote 3 for an explanation for why raising must occur):

(7) *There_k be* [_{SC} [_{DF} *many problems*] [_{PP_A} *t_k*]]

1.2. *There* as a “clitic”

Given the ample evidence which shows that *there* is an XP, it may seem curious to claim it is a clitic. Here we show that *there* must be analyzed as a clitic-like XP, or a “weak” pronoun, in the sense of Cardinaletti & Starke (to appear).

Cardinaletti & Starke (C&S) claim that pronouns divide into three distinct grammatical classes: “strong”, “weak”, and clitics. In order to avoid confusion with similar terminology elsewhere, here we will use the terms “heavy” and “light” for the pronouns they call “strong” and “weak”, respectively. Heavy and light pronouns differ syntactically and semantically, even though they are both taken to be XPs. Let us discuss the properties which distinguish light pronouns from heavy pronouns. First, while light pronouns can refer to non-human entities, heavy pronouns cannot. This is illustrated with the two morphologically distinct third person plural feminine nominative pronouns in Italian, *loro* ‘they’ and *esse* ‘they’.²

(8) a. *Esse sono troppo alte.* (= the girls; the roses)
they-fem are very tall

b. *Loro sono troppo alte.* (= the girls; *the roses)
they-fem are very tall

The sentences in (8) show that *esse* can refer to [-human] entities, while *loro* is restricted to [+human] entities. Second, as C&S explain, it seems that light pronouns must move overtly to a Case-related position; consider (9):

(9) *Hanno mangiato loro / *esse.*
have eaten they-fem (cf.: *Esse hanno mangiato.*)

(9) shows that *esse*, unlike *loro*, cannot remain in its base position (Spec, VP).

There are several other syntactic differences exhibited by these two pronouns. (10a) shows that *loro* can be coordinated with another NP, whereas *esse* cannot; furthermore, *loro* can be modified, whereas *esse* cannot (10b); another syntactic difference between these two pronouns is that *loro* can occur in peripheral positions, such as in a cleft, right dislocation, and in isolation, while *esse* is allowed none of these options (10c-e) (examples all taken from C&S):

- (10) a. *Loro / *Esse e quelle accanto sono troppo alte.*
they-fem and those besides are too tall
- b. *Anche loro / *esse sono troppo alte.*
also they-fem are too tall
- c. *Sono loro / *esse che sono belle.*
are they-fem that are beautiful
- d. *Arriveranno presto, loro / *esse.*
will.arrive.3pl soon, they-fem
- e. *Quali sono belle? Loro. / *Esse*
which are beautiful? They-fem.

In contrast to Italian, French has the single morphological form *elles* ‘they (fem)’. Like Italian *esse*, French *elles* can refer to both human and non-human entities; this suggests that *elles* is a light pronoun, like *esse*. Yet unexpectedly, unlike *esse*, *elles* can be coordinated, thus exhibiting the syntactic behavior exhibited by the heavy pronoun *loro*. However, C&S note the revealing fact that when *elles* is coordinated with another NP, it can only refer to a [+human] entity:

- (11) a. *Elles sont trop grands.* (= the girls; the roses)
they-fem are too big
- b. *Elles et celles d’à côté sont trop grands.* (= the girls; *the roses)
they-fem and those besides are too big.

C&S propose that the behavior of *elles* can be understood in the context of Italian *esse* and *loro* if French, just like Italian, is analyzed as having two third person plural feminine nominative pronouns, one light and one heavy. The two pronouns in French, however, are homophonous; let us refer to them as *elles* (= light) and *ELLES* (= heavy).

In the context of the above discussion, we can hypothesize that English possesses a light *there* and a heavy *THERE*. In support of this hypothesis, note that the syntactic restrictions exhibited by the light pronoun *esse* in Italian are exactly the same restrictions exhibited by light *there* in English: light *there* cannot be coordinated (12a), modified (12b), clefted (12c), or used in isolation (12d) (cf. Allan 1971, who uses some of these tests also to show that this morpheme is

different from heavy “deictic” *there*). This contrasts with the behavior of heavy *THERE*, seen in (13):³

- (12) a. **Here / It and there are four women (in the room).*
 b. **Right / Even there are four women (in the room).*
 c. **It is there that are four women (in the room).*
 d. *Where are there four women (in the room)? *There.*
- (13) a. *Here and THERE are four women.*
 b. *Right / Even THERE are four women.*
 c. *It is THERE / that four women arrived.*
 d. *Where did four women arrive? THERE.*

The contrast between *there / THERE* is similar to the contrast seen with *him / HIM* in example (14), where *him*—but not *HIM*—can be a double of *John*:

- (14) a. *John, (I think) I like him.*
 b. **John, (I think) I like HIM.*

Given that light XPs behave like clitics, in that their syntactic distribution is limited, we can say that they are clitic-like. If we take *there* to be a light pronoun, then we have justification for treating it as a clitic-like element.

2. The status of the coda

Throughout the literature on *there* constructions, it is common to see a distinction between what is considered to be the postverbal subject DP and any material that follows. This latter part, which may or may not be (or include) a locative PP, is commonly referred to as a “coda”. Thus in a sentence like (15) below, the whole string *indebted to John in this room* could be identified as the coda of this construction.

- (15) *There are many people indebted to John in this room.*

It has been argued quite extensively that the postverbal DP and the coda do not form a constituent—or at least a certain kind of constituent. Since we claim that a postverbal subject with a following locative PP do form a (small clause) constituent, we need to examine these arguments in detail.

2.1. The coda according to Moro

The idea that *there* originates in postverbal position—rather than in canonical subject position (Spec, IP)—is not new. Moro (1997), for instance, proposes that *there* is the predicate in an SC structure as shown in the example in (16a) below (see also example (5) above). Moro also assumes a small clause structure for standard copular constructions like (16b); in this case, the predicate of the SC is

the PP *in the cellar*. However, when the PP is the coda element of a *there* construction, Moro analyzes it as an adjunct, as shown in (16c).

- (16) a. *There is a rat.*
 be [_{SC} [_{DP} *a rat*] [_{PRED} *there*]]
- b. *A rat is in the cellar.*
 be [_{SC} [_{DP} *a rat*] [_{PRED} *in the cellar*]]
- c. *There is a rat in the cellar.*
 be [_{SC} [_{DP} *a rat*] [_{PRED} *there*]] [_{PP} *in the cellar*]

The structure in (16c) is in part motivated by the fact that *there* and the PP cannot share the PRED position of the SC; thus, since *there* is by hypothesis the main predicate of this construction, the PP must be located somewhere else. Unfortunately, the proposed structures do not straightforwardly reflect the fact that (16b) and (16c) have identical truth conditions. For even if we recognize that (16c) is subject to the Definiteness Restriction while (16b) is not, both are true in exactly the same situations, viz., when there is something which is a rat and which is in the (contextually salient) cellar. Keenan (1987), for instance, analyses *there* + coda constructions as in (17).

- (17) [_{VP(there)} *be* DP XP] is true in M iff [XP]_M ∈ [DP]_M

The “XP” element in (17) is intended to represent all coda material, including any locative PP. Thus Keenan’s analysis suggests that the coda is essentially the predicate of these constructions. The need for a special rule of interpretation such as (17)—which presumably applies to Moro’s analysis as well—is at least in part a consequence of the assumption that the coda cannot be a sister of the DP.

According to our proposal, the PP *in the cellar* in (16b) and (16c) is always the predicate of the small clause. The difference between the two constructions is that in the latter the element *there* appears as a “clitic” double of the PP, while in the former this element is absent; semantically, however, the doubled PP and the non-doubled PP are equivalent. Our analysis of (16b), then, is the same as Moro’s, but our treatment of (16c) is different; for this latter sentence we assume the structure in (18) below.

- (18) *There is a rat in the cellar.*
 be [_{SC} [_{DP} *a rat*] [_{PRED} [_{PP} *in the cellar* [_P *there*]]]]

Since [[_{PP} *in the cellar*]] = [[_{PP} *in the cellar* [_P *there*]]], the truth conditions of (16b) and (18) are straightforwardly predicted to be identical, as desired.

The small clause in (18), however, is an instance of the kind of structure that has been challenged in the literature. Moro himself presents an argument against

the idea that the coda might be the predicate of the small clause in a *there* construction. This argument is based on facts about extraction out of certain kinds of coda elements. Consider the following pair of sentences:

- (19) a. *To whom_k does it seem that many people are indebted t_k?*
 b. **To whom_k does it seem that there are many people indebted t_k?*

The embedded clause in (19a) is a copular construction with the AP *indebted to whom* assumed to be the predicate of a small clause—see (20a) below; this example is meant to show that extraction out of such a predicate is generally allowed. Now, Moro argues, if this AP were also the predicate of a small clause in (19b), we should expect this sentence to be grammatical as well, contrary to fact. Moro thus proposes that the AP in (19b) is an adjunct, as in structure (20b).

- (20) a. *To whom_k ... many people_i are* [_{SC} *t_i [AP indebted t_k]*]
 b. *To whom_k ... there_j are* [_{SC} *many people t_j*] [_{AP} *indebted t_k*]?

The degraded status of (19b) is then explained as a case of extraction out of an adjunct—an operation which is known to result in ungrammaticality.

The illformedness of (19b), however, can be given an alternative account. Suppose that the AP *indebted to whom* is part of the postverbal subject. In this case, (19b) would have the structure in (21):

- (21) *To whom_k ... there_j are* [_{SC} [_{DP} *many people indebted t_k*] *t_j*]?

Under this assumption, (19b) can be analyzed as a case of extraction out of DP, also an operation which tends to produce ungrammaticality. Evidence in favor of this latter analysis is provided by the fact that extraction from DP is known to be sensitive to the kind of determiner that heads the DP; for instance, a similar sentence involving a determinerless version of this DP might be expected to allow extraction more easily than in (19b). This expectation is indeed fulfilled:

- (22) *(?)To whom_k does it seem that there are people indebted t_k?*

Under the assumption that the AP is an adjunct, it remains mysterious why the kind of determiner in the postverbal subject would matter for the extraction facts.

In the next subsection, we will further motivate our analysis of the AP in (19b) and of other (putative) coda material.

2.2. Issues of constituency

In this subsection we review the remaining arguments that may be seen as posing a challenge to the kind of constituency we propose for *there* constructions.

Such arguments are essentially of two kinds: (a) the coda is not part of the subject DP; and (b) the coda is referentially distinct from the DP.

To our knowledge, argument (b) has only been made in reference to codas that are locative PPs; this is unproblematic for our analysis, since we consider the locative to be a predicate of the subject DP. Argument (a), however, poses an indirect challenge to our proposal, since under our analysis any part of the coda which is not part of a locative PP should be analyzed as being part of the DP. This is because we claim that this PP is a direct predicate of the DP, which in turn implies that the two constituents are sisters. Consequently, any (putative) coda material that precedes the PP must be inside the DP. For instance, consider again sentence (15), repeated here as (23).

- (23) *There are many people indebted to John in this room.*

According to our analysis, a non-locative coda is not the predicate of a small clause, because *there* constructions by definition involve locative predication. In the case of (23), then, the string *indebted to John in this room* is not a coda constituent; rather, we claim that the AP *indebted to John* is part of the postverbal subject, while the PP *in this room* is the SC predicate.

In order to defend our proposal, we will examine two representative structures for (23) which would be compatible with claim (a): one where the coda material is assumed to form an adjunct constituent to the DP, as in (24a); the other where the AP and the PP do not form a constituent, and are essentially independent adjuncts, as in (24b).

- (24) a. [_{VP} [_{DP} *many people*] [_{XP} [_{AP} *indebted to John*] [_{PP} *in this room*]]]
 b. [_{VP} [_{ZP} [_{DP} *many people*] [_{AP} *indebted to John*]] [_{PP} *in this room*]]

We will argue that (the d-structure of) (23) does not have either of these two types of structures.

The most compelling evidence in support of argument (a) is a simple constituency test: if the coda were part of the DP, then the DP+coda ought to be able to occur in standard argument positions, contrary to fact. For instance, in Keenan's example (25), the DP+coda cannot occur in subject position (25b); and similarly with a variant of (23), as shown in (26).

- (25) a. *There are two students who object to that enrolled in the course.*
 b. *?*Two students who object to that enrolled in the course just came in.*
- (26) a. *There are/arrived two people indebted to John in this room.*
 b. *??Two people indebted to John in this room just arrived/said hello.*

This test, however, does not take into account the possibility that the coda itself may not be a constituent. If it were, as suggested by the structure in (24a), we

would expect it to behave as such—not in a DP position, but perhaps in a predicative position, given the interpretation this element seems to have. As it turns out, the coda does not seem to behave like such a constituent:⁴

- (27) *Two students are who object to that enrolled in the course.
 (28) a. ?Two people are indebted to John in this room.
 b. *Two people arrived indebted to John in this room.

Interestingly, if we separate off the locative element in the examples above, the remaining material is perfectly capable of occurring in subject position:

- (29) Two students who object to that are enrolled in the course.
 (30) Two people indebted to John are/arrived in this room.

Crucially, these examples would be predicted ungrammatical if we assumed the structure (24a).

We now turn to the alternative structure (24b). The evidence from (29) and (30) already suggests that the “ZP” constituent of (24b) might be a DP, as we proposed earlier; but this is not the only evidence in support of our claim. Consider the following variant of (23).

- (31) *There are exactly two people indebted to John in this room.*

Intuitively, this sentence can be true in a situation where the room in question contains more than two people, provided that exactly two of them—no more, no less—are indebted to John. If (24b) were the correct structure for this sentence, we would have to add an extra rule of interpretation to the semantics to handle “complex” codas. Keenan’s rule (17) cannot treat the coda in this structure as its “XP” component because there is no such constituent. Perhaps the PP can be identified as the “XP” of rule (17), but then some other rule must handle the interpretation of the AP. This latter rule must be formulated in such a way that the AP functions as a restrictive modifier of the DP; we don’t want (31) to be true only in situations where the room contains exactly two people, who happen to be indebted to John.

On the other hand, the correct interpretation for (31) is straightforwardly obtained by analyzing the string *exactly two people indebted to John* as a DP, where *indebted to John* is a (restrictive) modifier of the noun *people*.

Our analysis, then, predicts that there is no “coda” in *there* constructions other than the locative PP; any other material is analyzed as part of the postverbal subject. This prediction is borne out by the data we have considered. We are not aware of cases that are incompatible with this analysis.

3. “Pure” existentials

In the preceding subsections we have presented and motivated our analysis of *there* constructions with an overt locative element. We have claimed that this element is essentially the main predicate in such constructions, and that furthermore the element *there* is a morphological reflex—a double—of this locative predication. This leads us to extend our analysis to all constructions involving the light *there*, including what are called “pure” existential constructions. Thus a sentence like (1a) is also analyzed as a locative structure (cf. Lyons 1967, Freeze 1992):

- (32) *be* [_{sc} *many problems* PP]
 P DP = D
 @ *there*

In the structure above, the null preposition @ is, as before, interpreted as the main two-place predicate @’, and *there* is just like a pronoun whose antecedent is not overt. As with any pronoun, since the antecedent is not given in the sentence, it must be recovered from the context; hence the “location” in question will be the (maximal) salient location in the context of utterance of this sentence. In some contexts, such as an “out of the blue” utterance of (1a), the maximal salient location will be large enough (e.g. “planet Earth”) to yield a PP meaning which is essentially a predication of existence. In fact, the predicate *exists* could itself be thought of as an inherent locative with particular lexical requirements—e.g., *Santa Claus does not exist (in the actual world)*, *A cube does not exist in two-dimensional space*, but **Bob does not exist in Paris*.

4. Locative resultatives

It is a well known fact that *there* can only occur with certain unaccusatives:

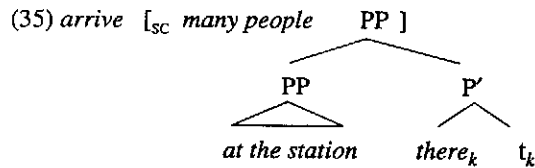
- (33) a. *There arrived many people at the station.*
 b. **There left many people from the station.*

Tortora (1997) argues that only unaccusatives which entail a reached location-goal can occur with *there*. Here we would like to provide an explanation for this restriction based on our locative-doubling hypothesis.

Tortora (1998) claims that the locative PPs in (34a) and (34b) are in some sense resultative XPs, much like the AP *open* in (34c):

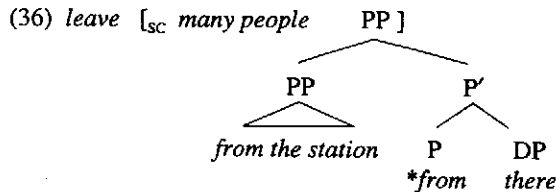
- (34) a. *Many people arrived at the station.*
 b. *Many people left from the station.*
 c. *John broke the vase open.*

Suppose then that we adopt a resultative analysis of (34a,b). Levin & Rappaport-Hovav (1994) have argued that resultative XPs are part of the argument structure of the verb (see also Hale & Keyser 1993 and Larson 1988). In the spirit of this general effort, we tentatively propose that a V can select an SC constituent, which is interpreted as the state that results from the event denoted by the V. Thus, *arrive* can select an SC such as [*many people at the station*], or even an SC with a “doubled” PP, as in (35).



This structure seems unproblematic. *There* raises to Spec, IP, yielding (33a) – or, if the PP is not doubled, the DP *many people* raises to Spec, IP, yielding (34a).

Let's turn now to the case of *leave*. Here it may be argued that *leave* is not, strictly speaking, resultative; but even assuming that it were, the kind of structure we would obtain, if we assume this V selects an SC, would not lend itself to doubling with *there*. In fact, as we can see in (36), even if we assume a “double” structure for the PP *from the station*, the head P of the structure is not of the appropriate kind.



Thus, a string like (33b) cannot be generated.

Notes

¹ We would like to thank Sam Epstein, Dan Seely, and the gracious audience at BLS 25.

² *Loro* is also used as the third person masculine pronoun, and is used as an accusative and dative, as well as a nominative.

³ Note, too, that as with Italian *esse*, these syntactic restrictions exhibited by light *there* correlate with a semantic distinction: light *there* does not have the same ability to refer to a contextual location as heavy *THERE*. Furthermore, the syntactic behavior exhibited by *esse* allows us to understand *there*'s obligatory occupation of Spec, IP: the obligatory overt movement of light *there* to subject position is not an isolated fact about *there*, but rather a general cross-linguistic fact about light pronouns that they cannot remain in their base positions (Tortora 1997).

⁴ (28a) seems fairly ok, as long as it is uttered with some emphasis on the AP *indebted to John*. This would be equivalent to the sentence *In this room, two people are indebted to John*. Hence it seems to us that sentence (28a), even if grammatical, does not provide much evidence that the AP and the PP form a constituent.

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