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PREDICATE INVERSION AND ENGLISH *THERE*-SENTENCES*

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Abstract: This squib argues against the predicate inversion analysis of English existential *there*-sentences. The main problem of this analysis is caused by *wh*-extraction data. *Wh*-extraction is possible of and from the noun phrase in *there*-BE (*there*-sentences with the copula), but not in *there*-V sentences (*there*-sentences with other verbs). This is not predicted by the predicate inversion analysis. It is shown that the predicate inversion analysis is adequate (with some modifications) for *there*-V sentences and locative inversion. Existential *there*-sentences, however, need to be analysed differently. They are derived from a predication configuration in which *there* is the subject of predication and the sentence states about this location that it contains the kind and amount/number of individuals given in the noun phrase. The existential reading arises from the interaction of this predication configuration and existential closure of an empty D-layer of the noun phrase.

Keywords: existential sentences, *there*-BE sentences, *there*-V sentences, predicate inversion, predication

1. Introduction

In this squib, I argue against Moro's (1997) analysis of English *there*-sentences given in (1) on the basis of a larger and new data set from English

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there-sentences. I will show that Moro's analysis cannot be upheld for the *there*-BE sentences (*there*-sentence with copula *be*), but it proves to be adequate for the *there*-V sentences (*there*-sentence with a lexical verb). I will provide an analysis of *there*-V sentences (and locative inversion) based on Moro's proposal. Finally, I will provide an alternative analysis for the *there*-BE sentences given in (1).[1]

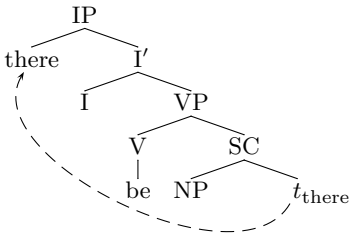
(1) (a) There are dinosaurs. (b) There was a man in the garden.
(c) Some months before each series, there is a frantic period of preparation.
(BNC, text = "CH8" n = "2")

2. The predicate inversion structure (Moro 1997)

2.1. The theory

In his ground-breaking studies on copular clauses and predicative noun phrases, Moro (1991; 1997; 2006) argues that Italian *ci* and English *there* are dummy predicates that originate in a small clause with a noun phrase as their subject. Either the noun phrase or the dummy predicate moves from the base position to the structural subject position (Spec,IP). If the noun phrase moves, the result is a locative predication sentence *(A man is there (in the garden))*. If *there* moves, the result is an existential *there*-sentence *(There is a man (in the garden))*. The derivation for the *there*-sentence is given in (2).

(2)



This analysis is parallel to Moro's analysis of specificational/inverse copula constructions (henceforth ICC). This proposal straightforwardly accounts for the obligatoriness of the copula in non-finite clauses, both for *there*-sentences and ICCs. For inversion, the landing site Spec,IP needs

[1] The examples from the British National Corpus (BNC) are given with text-ID and ID of the sentence in the text.

to be available. The embedded clause has to be as big as IP, making the copula obligatory.

(3) (a) I believe there to be a picture of the wall.
(b) *I believe there a picture of the wall. (Moro 1997, 119)

(4) (a) Mary believes the cause of the riot to be John.
(b) *Mary believes the cause of the riot John. (*idem.*)

In regular predicational copula clauses, the copula is optional, because the verb selects either for a small clause (SC) or an IP. In the latter case, the subject of predication moves to the Spec,IP.

(5) Mary believes John (to be) the cause of the riot.
(a) Mary believes $[_{\text{SC}}$ John $[_{\text{DP}}$ the cause of the riot$]]$
(b) Mary believes $[_{\text{IP}}$ John to be $[_{\text{SC}}\ t_{\text{John}}$ $[_{\text{DP}}$ the cause of the riot$]]]$

2.2. *Wh*-extraction

ICCs (both in English and Italian) disallow extraction of and from the post-copular noun phrase, cf. (6).

(6) (a) *$[\text{Which picture}]_i$ do you think $[\text{the cause of the riot}]_j$ was $[_{\text{SC}}\ t_i\ t_j]$?
(b) *$[\text{Which wall}]_i$ do you think $[\text{the cause of the riot}]_j$ was $[_{\text{SC}}$ [a picture of t_i] $t_j]$
(Moro 1997, 45, 49)

In Moro's view, the restriction on the extraction of the subject position in (6a) is due to a violation of the Empty Category Principle (ECP). A trace in the small clause is only licensed if the noun phrase moves via the Spec,IP position, giving rise to agreement with the copula. In ICCs, this position is blocked by the inverted predicate noun phrase already. Thus, the subject of the small clause cannot be extracted (for details see *op.cit.*, 45–6).

Subextraction from the post-copular noun phrase in ICCs is a subjacency violation in the sense of Cinque (1990, 41–2). As the post-copular noun phrase (the subject in the small clause) is not selected by the copula, it is not L-marked, and thus constitutes a barrier. Movement out of this noun phrase crosses a barrier and leads to a violation of subjacency.

With the English *there*-construction extraction of and from the post-verbal noun phrase is possible, cf. (7) and (8).

(7) (a) ??Which actors were there in the room? (Heim 1987, 27)
(b) What is there in the refrigerator? (Aissen 1975, 7)
(c) How many men do you think that there were *t* in the room? (Moro 1997, 126)

(8) Which wall do you think there was a picture of *t*? (Moro 1997, 124)

Moro argues that this empirical difference between ICC and *there*-sentences can be explained by assuming that *there* turns the copula into a lexical element. As a result the copula L-marks the subject-DP in the small clause, the DP is no longer a barrier and subextraction is no longer a subjacency violation.

Finally, Moro argues that the cases in (7b) and (7c) are cases of subextraction (following Heim 1987). Extraction of *what* or *how many* is taken to be NP subextraction leaving behind a null D-head. So these cases are equivalent to (8). Extracting *which-X* phrases is impossible as these phrases are full DPs and this is an ECP violation just as in (6a).

(9) (a) $[_{\mathrm{DP}}$ which X$]_i \ldots t_i$
(b) $[_{\mathrm{NP}}$ what$]_i \ldots [_{\mathrm{DP}}\ \mathrm{D}^0\ t_i]$
(c) $[_{\mathrm{NP}}$ how many X$]_i \ldots [_{\mathrm{DP}}\ \mathrm{D}^0\ t_i]$

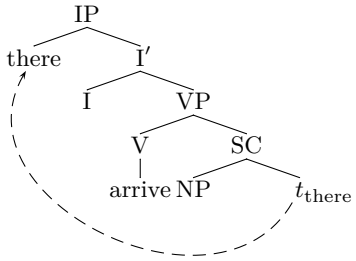
Thus, the difference between ICCs and the *there*-construction boils down to a difference in subextraction: whereas *there*-sentences allow this type of extraction specificational copula sentences do not. In Moro's analysis this difference is due to *there* making the copula an L-marker.

2.3. The problem

Moro's analysis of the *wh*-movement data predicts that the presence of an L-marking verb makes subextraction possible. As unaccusative verbs are lexical and select for a small clause (see Moro 1997, 244; Hoekstra–Mulder 1990), we expect subextraction to be possible with lexical verbs in *there*-sentences (cf. Hartmann 2005).[2] This is in fact the analysis that Moro (1997, 244) proposes for a sentence like *there arrived three men*, cf. (10).

[2] See den Dikken (2006, 123) for the same criticism with respect to locative inversion with lexical verbs.

(10)



As lexical verbs are generally considered L-markers, we expect these verbs to behave like the lexicalized copula: subextraction and extraction with *how many* and *what* should be possible. This prediction is not born out as I will show in the next section.

3. *There*-BE vs. *there*-V

3.1. Introduction

English *there* occurs in subject position both with the verb *be*, cf. (11) and with a number of intransitive, mostly unaccusative verbs, cf. (12).

(11) (a) As an added bonus, there is a tax differential which makes lead free petrol some 10p per gallon cheaper in the UK. (BNC, text = "AN2" n = "4")

(b) Finally, there is a completely new section on tropical AIDS. (BNC, text = "HJN" n = "27")

(12) (a) After her coat was thrown down on to the couch, [...] *there appeared before the child a fat woman, a very fat woman*, in what seemed to be a clean blue-striped blouse and a long grey skirt with a fringe. (BNC, text = "CK9" n = "148")

(b) And on they travelled through the forest until they came to a place where the roads crossed and *there sat an old woman resting on a stone.* (BNC, text = "F72" n = "190")

Many analyses of English *there* implicitly or explicitly assume that it does not matter whether the verb is *be* or another verb. However, I will show below that the two structures behave differently with respect to *wh*-movement (for more differences, see Hartmann 2008). Thus, the distinction is crucial and I label the two types differently: those structures in which the tensed/main verb is *be* I call *there*-BE structures; those in which the tensed/main verb is a lexical (mostly unaccusative) verb, I call *there*-V structures.

3.2. Wh-extraction in *there*-V vs. *there*-BE

Aissen (1975) observed that *there*-V structures differ from *there*-BE structures in that the former are islands for extractions, just like locative inversion structures (LI) are. I carried out a Magnitude Estimation experiment and tested the differences/similarities between locative inversion, *there*-V and *there*-BE structures with respect to *wh*-movement of the noun phrase (for details see Hartmann 2008). The experiment confirmed Aissen's findings. *there*-V structures differ from *there*-BE with respect to *wh*-movement.

3.2.1. *Wh*-movement of the full noun phrase

There-BE structures allow *wh*-extraction of *how many X* or *what*-phrases, only extraction with *which X* is severely less acceptable, cf. (13) and (14) (due to the definiteness effect, cf. Heim 1987).[3]

(13) (a) $^{++}$What did you say there was?
(b) $^{-}$Which witness did you suppose there was?
(c) $^{+++}$How many advertisements did you say there were?

(14) (a) $^{++}$What did you reckon there was in the dark blue hat?
(b) $^{+/-}$Which lift did you suppose there was down the dark well?
(c) $^{++}$How many rabbits did you reckon there were in the dark blue hat?

In contrast to that, all types of *wh*-movement are (almost) equally degraded in *there*-V structures, cf. (15) and (16).

(15) (a) $^{---}$What did there come?
(b) $^{---}$Which miner did there come?
(c) $^{---}$How many burglars did there come?

(16) (a) $^{---}$What did there arrive at the last hearing?
(b) $^{---}$Which advertisement did there appear on the noticeboard?
(c) $^{--}$How many coaches did there arrive in front of the main station?

[3] The judgements collected in a Magnitude Estimation experiment are numerical, so that native speakers can express gradient judgements on a fine-grained scale. I transformed these numerical values into a scale ranging from +++ to − − −. The scale reflects the statistically significant differences of the structures. Note that the judgements are provided for sentence types, not individual sentences.

Thus, the Magnitude Estimation experiment shows that *there*-V structures are clearly different from *there*-BE structures.

3.2.2. Subextraction from NP

It is possible to subextract from noun phrases in the *there*-BE structure, but not in the *there*-V structure (see Guéron 1980 for the observation).

(17) Subextraction from NP

(a) *Who did there appear a picture of t in the *Daily Telegraph*?

(b) Who is there a picture of t on the table?

As we have seen above, this difference is not expected in Moro (1997). I propose in the next section that Moro's analysis can be indeed adopted for the *there*-V structures, as these have similar properties as other inversion structures.

4. An analysis for *there*-V sentences

4.1. The syntactic structure

As we have seen above *there*-V structures and ICCs behave the same with respect to *wh*-movement: both structures fail to allow extraction of or from the post-verbal noun phrase. Additionally, the same restriction on extraction appears in locative inversion.[4]

(18) (a) ---Which rabbit did there appear?

(b) ---Which burglar did down the hot chimney come?

Second, *wh*-movement from the post-verbal noun phrase is impossible in both structures.

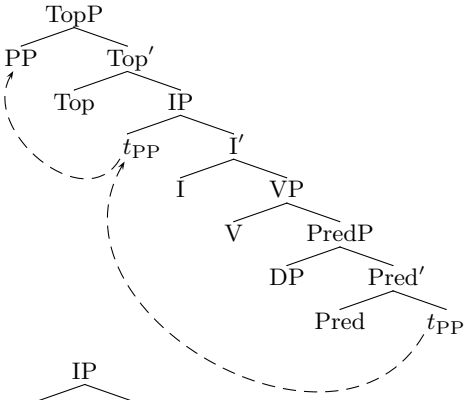
(19) (a) *Who did there appear a picture of *t* in the *Daily Telegraph*?

(b) *Who do you think on this wall hung a picture of?

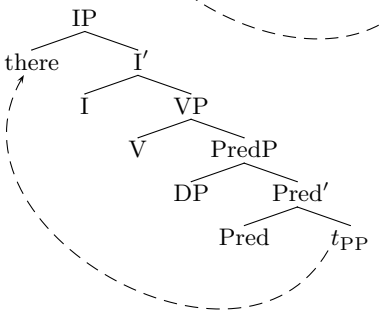
[4] For further similarities between LI and *there*-V sentences, see Aissen (1975); Postal (2004); Hartmann (2005; 2008). Note that the current proposal does not reduce locative inversion to *there*-V but both structures are taken to be predicate inversion structures. Most of the differences of the two structures can be derived from differences with respect to the PP in subject/topic position vs. *there* in subject position.

In the following I will propose that Moro's analysis is applicable to locative inversion sentences and *there*-V sentences in English. Both involve inversion of the predicate across the subject of predication, just as Moro proposed for ICCs. The tree structure of locative inversion is given in (20), the one for *there*-V structures in (21). This analysis is not new for locative inversion sentences and was proposed in different guises by Hoekstra–Mulder (1990); Bresnan (1994); Collins (1997); Culicover–Levine (2001), den Dikken (2006); Broekhuis (2008). The structure for *there*-V sentences is Moro's structure applied to a subset of the English *there*-sentences.

(20)



(21)



The status of the prepositional phrase is different in the two constructions. In locative inversion (at least with unaccusative verbs) it is the predicate and it can be topicalized to a further position. In *there*-V sentences, I take *there* to be the predicate, while the PP is an adjunct. As an adjunct, it can adjoin to different syntactic positions just as adverbials can. Support for analysing the PP as an adjunct comes from its optionality—*there*-V structures are available without an additional prepositional phrase.[5]

[5] An anonymous reviewer suggested to test scope facts and variable binding to support the adjunct analysis. However, two issues make testing rather problem-

(22) (a) There then appeared Stroud miller, John Biddle, taking control of the mills somewhere between 1810 and 1820. (BNC text = "ANC" n = "340")

(b) There followed an uproar. (BNC text = "EF0" n = "1290")

(c) But there remains a strong respect for the religious leadership of the protestant–loyalist bloc. (BNC text = "A07" n = "508")

Additionally, the preposition cannot be stranded, which is further support for the adjunct status of the PP.

(23) (a) During which meeting did there arise a number of unresolved issues?

(b) *?Which meeting did there arise a number of unresolved issues during? (Rochemont–Culicover 1990, 132)

The different status and position of the PP can explain the differences between *there*-V and locative inversion structures.

(i) *there*-V sentences can be the complement of *expect*-type verbs (cf. Aissen 1975), but LI sentences cannot (cf. Stowell 1981, 271) as seen in (24) vs. (25). As the PP in LI is topicalized, these structures are larger than IP and therefore cannot be embedded in non-finite contexts.[6]

(24) By next year, I expect there to hang on this wall a picture of Leonard Pabbs. (Aissen 1975, 10)

(25) (a) *I expect in the room to be sitting my older brother.

(b) *I believe down the hill to have rolled a ball. (Stowell 1981, 271)

(ii) *there*-V structures allow (to some degree) yes-no question-formation with *do*-support.[7] As *there* can remain in Spec,IP, an auxiliary can be

atic. (i) *there*-V structures seem to be subject to the Definiteness Effect at least to some extent (though I am not aware of an empirical study towards this effect—and this goes beyond the scope of this paper). Thus, testing with strong quantifiers in the noun phrase position such as *There ran every cow into its barn* is problematic: the occurrence of the strong quantifier makes those sentences degraded to begin with. (ii) As I take the noun phrase to be the subject of the small clause, and *there* the predicate, there is a potential intermediate adjunction site for the PP—either directly to the proform *there* or at Pr′. Thus, scope and variable binding facts are not necessarily informative with respect to the adjunct–argument distinction.

[6] Note, however, that light inversion in the sense of Culicover–Levine (2001) is predicted to be possible.

[7] Note that there is quite some noise in the data (see among others Ross 1975), with some speakers considering yes-no questions in *there*-V structures as ungram-

inserted higher for question formation. This is not possible with locative inversion cases.

(26) (a) ??Did there occur a drop in subchlostinic pressure?
(b) ?*Did there sit on the shelf more than two volumes of Proust?
(Ross 1975, 575)

(27) (a) Did there arise during the meeting any unresolved issue?
(b) *Did there walk into the room a man with long blond hair?
(Rochemont–Culicover 1990, 132)

(iii) Questioning of the PP in *there*-V sentences requires *do*-support, while this is impossible with locative inversion structures.

(28) (a) On which wall hung a portrait of the artist?
(b) *On which wall did hang a portrait of the artist?
(c) *On which wall there hung a portrait of the artist?
(d) On which wall did there hang a portrait of the artist? (Bresnan 1994, 100)

The PP in *there*-V structures is an adjunct and question formation follows the rules of adjunct questions, requiring *do*-support. Questioning the locative phrase with LI results in questioning the subject, so no *do*-support is required (see Bresnan 1994).

4.2. Locative inversion and *there*-V with unergative verbs

The analysis above applies to locative inversion with unaccusative verbs. As the noun phrase is base-generated as a complement of these verbs (see Perlmutter 1978), it is unproblematic to derive this word order by leaving the noun phrase in its base position. However, it has been repeatedly observed that LI also occurs with unergative verbs (see Levin–Rappaport Hovav 1995; Culicover–Levine 2001; Salzmann 2009; Holler–Hartmann to appear):

(29) In the hall ticked the long-case clock that had been a wedding present from her parents [P. Lively, *Perfect Happiness*, 173] (cited from Levin–Rappaport Hovav 1995, 225)

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matical, while others detect a difference with respect to verb class. The important point here is that speakers agree on the ungrammaticality of locative inversion for these structures.

The analysis given above is not readily applicable to these cases as the base order in the VP with unergative verbs is noun phrase > verb. Based on Rochemont–Culicover (1990), Salzmann (2009) proposes that in LI, the verb moves across the subject to a head above vP, which he takes to be an aspectual projection. He provides evidence for such a movement from the position of adverbs in LI: the verb can precede VP adverbials in LI, cf. (30).

(30) Behind Luther's Word stood always the concept of an historical revelation which had been recorded in the Scriptures. (books.google.de/books?isbn=1579788335 cited from Salzmann 2009)

However, it is not entirely clear whether (30) shows a general pattern, and whether this pattern is restricted to locative inversion. In the British National Corpus, I found several relevant examples of this word order without LI:

(31) (a) The nuns wore always the same habit. (BNC text = "G06" no = "2108")
(b) Wilcox remained always the showman. (BNC text = "A7L" no = "319")
(c) And in normal life too they stand always within call. (BNC text = "B0U" no = "1663")
(d) Herschel worked always by himself. (BNC text = "B7H" no = "1824")

Obviously, the occurrence of these few cases in the corpus does not necessarily mean that this is a generally acceptable pattern. The same holds for the example provided by Salzmann (2009). A rating study should clarify this issue.

From a theoretical point of view, the question arises why verb movement occurs only in LI and how it can be triggered. Salzmann proposes that verb movement of the verb is driven by the interaction of feature-checking of aspectual properties of the verb and repair-driven movement (in the sense of Heck–Müller 2007) of the verb to allow the subject to be right-aligned and thus, occupy the default focus position in the sentence. This is implemented with different rankings in optimality theoretical terms. Even though I agree with Salzmann that the noun phrase needs to be assigned the main accent in the structure, syntactic verb movement is not necessary to reach this goal. Let us assume in line with the analysis provided above that the syntactic derivation requires the following: (i) the Spec,TP position needs to be licensed by a frame-setting (temporal or locative adverbial). This can be either a moved PP, *there*

or a base-generated adverbial phrase. (ii) The single noun phrase of the structure remains in the VP as it is marked for presentational focus (F-marked).[8] With unergative verbs, the focus-marked noun phrase needs to be right-aligned to receive the main accent in the structure. I take the final step to be a phonological process that can be modelled along the lines of Goebbel (2007; in press). This means that the syntactic spell-out has the word order noun phrase > verb. In the phonological component this word order is changed to verb > noun phrase in order to right align the major accent on the noun phrase.[9]

4.3. The restriction on *wh*-movement

In Moro's analysis, the restriction on *wh*-movement from and of the post-copular DP is a result of the configuration established by the inverted structure (see den Dikken 2007 for a minimalist analysis and Błaszczak 2010 for a critique). However, it is not entirely clear whether the syntactic configuration of inversion indeed is the decisive factor for the restriction on movement. As Błaszczak (2010) points out, inverted structures in Polish, do not give rise to a restriction on wh-movement of the embedded subject.

(32) ?Które dzieci chciałabyś, żeby w domu były?
which children.nom.pl.nv would-like that+subj at home be.prt.pl.nv
'Which children would you like to be at home?' (Błaszczak 2010)

This is true not only for copula clauses, but also holds for structures with unaccusative verbs (K. Migdalski, p.c.).

[8] I leave the definition of this notion open. However, it is important to note that presentational focus cannot be new information focus. The latter is the default option and cannot give rise to syntactic operations. Whether it can be subsumed under a definition of contrastive focus as defined in Rooth (1992) is left to future research. Note that the focus in *there*-BE sentences is new information focus and therefore does not give rise to a restriction on extraction. The definiteness effect is of a different nature, see Hartmann (2008, 126–41) for details.

[9] There is a major difference between the LI and *there*-V cases analysed here and the structures that Goebbel (2007; in press) discusses: the phenomena that he discusses show optional movement. In the LI/*there*-V cases with unergative verbs, this movement is obligatory.

(33) ?Które dzieci chciałabyś żeby w domu się pojawiły?
which children wanted(part) so-that in home refl appeared

This suggests that it is not the syntactic configuration itself that restricts the movement of and from the post-verbal DP. Alternatively, it has been proposed for LI, that the restriction on movement is a topic island effect (cf. Salzmann 2009 and references therein). On the assumption that the PP in LI occupies a topic position, the structure is a topic island just as (34b) and extraction is predicted to be generally illicit.

(34) (a) *When did he say that into the room walked Jack *t*? LI
(Rizzi–Shlonsky 2006, 344)

(b) *What did to Lee Robin give? (Culicover 1993, 99) top

This explantion, however, does not work for the *there*-V structures as *there* is not a topic in the structure. The same is true for light inversion as proposed by Culicover–Levine (2001), where the PP remains in Spec,TP. The third option that has been proposed for the restriction on *wh*-movement is that it is due to a clash with the focus properties of the structure, cf. Bresnan (1994); Hartmann (2008); Broekhuis (2008); Salzmann (2009).

This proposal can be made more precise with the following hypotheses from Winkler (2009) on focus constructions in general.

(35) **Freezing Hypothesis:** Focus constructions can violate word order rules as long as they fulfill the specific information structural conditions. These conditions are conditions of interpretation and can repair the syntactic violation. The construction is frozen for further extraction.

(36) **Mismatch Hypothesis:** Freezing Effects result from the extraction out of frozen structures if the extraction operation violates
(i) structural conditions and
(ii) information structural conditions.

In inverted structures like LI and *there*-V sentences, an element moves across a potential subject to the Spec,TP position, violating general constraints on locality. As stated in the freezing hypothesis, this is only possible because the potential subject is marked for focus (in some sense)[10]—with the subject remaining low, it remains in the default focus position, satisfying information structural needs. As a result, the whole

[10] Note that the notion of focus used here is not new information focus.

construction is frozen. Extraction of and from the subject is prohibited because this would clash with the information structural need for the subject to remain in the default focus position. However, there seems to be a further difference between *there*-V structures and LI: while extraction of and from any other constituent in LI is impossible with locative inversion, cf. (34a), at least some adjuncts can be extracted from some *there*-V sentences. A possible hypothesis is that the temporal adverbial might be base-generated higher than the final position of *there* so that it is not strictly speaking extracted from the frozen parts of the structure. If the PP in LI indeed topicalizes, a larger part of the structure is frozen—including all adverbial positions. However, this seems not to be confirmed by the following data.

(37) (a) During which meeting did there arise a number of unresolved issues?
(Rochemont–Culicover 1990, 132)

(b) How often did there arise an unresolved issue?

(c) ??Into which room did there walk a ghost?

While *during which meeting* arguably has a high adjunction site, this is less obvious for a phrase like *how often*. Rather, the verb class in these structures seems to be relevant (see Hartmann 2008, 162ff for some discussion on the verb classes in *there*-V). This question needs broader empirical testing and I leave this issue to future research.

5. An analysis for *there*-BE sentences

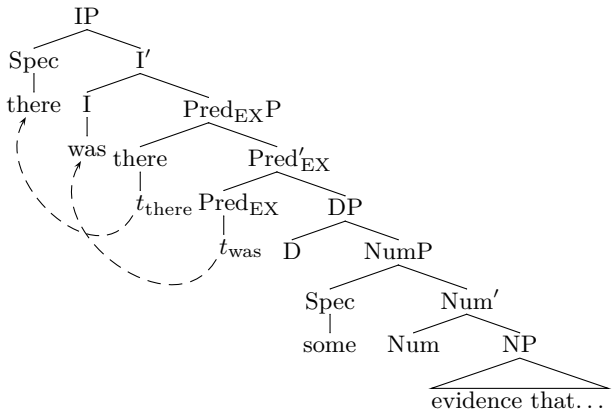
5.1. The proposal

The starting point for my proposal is the predicate nominal analysis of *there*-sentences first proposed by Jenkins (1975) and defended in Williams (1984; 1994; 2006); Higginbotham (1987); McNally (1997); Zamparelli (2000); Hazout (2004). The major claim of the predicate nominal analysis is that *there* is the subject of predication and the post-copular noun phrase is a predicate nominal. Here, I take *there* to be base-generated in the specifier of a predicative head (Pred_{EX}) that establishes a syntactic configuration of predication (see Bowers 1993 and follow-up work)—a Relator in the sense of den Dikken (2006). In contrast to the predicate nominal analyses, I suggest that the noun phrase is a full DP with an empty D-layer (see Hartmann 2008, 56ff for several arguments against

assuming that the noun phrase is a predicate nominal). The predication relationship in *there*-BE sentences is similar to a thetic statement presenting an entity as part of a given situation. The syntactic structure for a sentence like (38) is given in (39).

(38) There was some medical evidence that her life could have been saved had she arrived at hospital earlier. (BNC, text = "FCT" n = "14", adapted.)

(39)



The crucial aspects of this analysis are the type of predication and the relevance of the complex DP structure. I propose that Pred$_{EX}$P establishes a predication configuration in which *there* is the logical subject. Similar to the analysis of thetic sentences by Maleczki (2004), an existential sentence states about a location (or situation in the sense of Kratzer 2007) that it contains an individual of the type (and quantity) expressed by the DP (see also Erteschik-Shir 1997 for a treatment of thetic sentences in which the location is the topic). *There* is a proform that picks up the situation/location from the context (interacting with grammatical tense). Its default value is the situation of here and now. Thus, a sentence like *There are dinosaurs* is interpreted as true of the actual world if the actual world is such that it contains individuals that are dinosaurs. This overall situation can be further specified by a frame adverbial (in the sense of Maienborn 2001). *In Africa, there are dinosaurs* gives rise to a reading in which it holds for the location Africa that it contains individuals of the type dinosaur.

The second important ingredient to the analysis is the internal structure of the DP, especially the empty D-layer. It introduces a variable into the discourse that has to be bound by existential closure for the existential

meaning to arise. This proposal provides a formal syntactic implementation for Higginbotham's (1987) claim that the core of the existential meaning lies in the noun phrase in the structure. Existential closure gives rise to an existential reading of the noun phrase (in line with Heim 1982) as suggested by Borer (2005a, 137). In this way, the semantic structure of $\exists x(\text{man}(x)\ldots)$ arises, which I take to be the core of the interpretation of *there*-BE sentences.

Support for this approach comes from the list reading with *there*-sentences: when the D-layer is filled the sentence is not ungrammatical, but it means something different: the DP specifies an element of a list specified in the context.[11]

(40) A: Did we call everyone?
B: No, There's still John and Bill.

(41) Is there anything worth seeing around here? Well, there is the Necco factory. (Milsark 1974, 208)

5.2. Advantages

This structure has several advantages over previous proposals, especially the predicate inversion and predicate nominal analysis. First of all, it allows us to explain the necessary presence of *be* when embedded under *consider*-type verbs, see (3) above. Existential closure is necessary to derive the existential meaning, and the domain of existential closure is at least VP (cf. Diesing 1992) or even TP (cf. Borer 2005b). Thus, the presence of Pred_{EX}P is not enough for an existential reading to arise. *There*-BE sentences need to project at least a VP/TP, and therefore, Pred_{EX}P cannot be embedded under *consider*-type verbs.

Second, we can explain why bare singulars can be predicate nominals but are impossible in *there*-sentences (see Kallulli 2008): Bare singulars cannot project up to a DP, but the noun phrase in *there*-sentences need to be a DP. Thus, the two are incompatible.

(42) (a) She is professor of philosophy at Yale.
(b) *There is professor of philosophy at Yale. (Kallulli 2008)

[11] Additional support for the empty D-layer can be found in Serbian, see Hartmann–Milićević (2008; 2009) and Hartmann (2008, 106) for details.

Third, human predicate nominals cannot be modified by a non-restrictive relative clause with *who* as in (43). However this is possible in *there*-sentences, cf. (44).

(43) (a) *I consider Rina the duty nurse, who is very efficient.
(Heycock–Kroch 1999, 374)

(b) ?John is a man, who I was telling you about. (Doron 1988, 289)

(44) (a) And there was one girl, who fancied herself in love with a naval cadet, who could actually produce real tears during the singing of...
(BNC, text = "EFP" n = "68")

(b) There was another visitor, who was as discreet—and just as vital to the Shah as Dr Flandrin. (BNC, text = "G3R" n = "1190")

Existential sentences state about a situation that an individual (of a certain amount, number) of the type specified by the NP is part of this situation. Hence there is a human individual in the discourse that can be further specified by a non-restrictive relative clause. This is not the case for predicate nominals.[12]

6. Conclusion

In this squib, I argued against Moro's (1997) analysis of *there*-sentences in English, because it does not adequately account for the distinction of *there*-V vs. *there*-BE sentences. Moro's basic analysis can be used for the *there*-V sentences. This analysis accounts both for the similarities and differences between *there*-V and locative inversion structures. Additionally, I proposed an alternative to account for the restriction on *wh*-movement in these two structures on the basis of the Freezing Hypothesis and Freezing Effect Hypothesis taken from Winkler (2009). Finally, I presented an analysis of *there*-BE sentences based on the predicate nominal analysis of *there*-sentences, but with a crucial difference—the noun phrase in *there*-BE sentences is not a predicate nominal, but a full DP with an empty D-layer.

[12] For further advantages and details see Hartmann (2008).

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