

Capturing the Non-optionality of Participial Codas in *There*-BE-Existentials*

Min-Joo Kim

Texas Tech University

min-joo.kim@ttu.edu

1 Introduction

English *there*-BE-existential sentences (*there*-BE-ESs) consist of *there*, *be* (BE), and a pivot, but they may also contain a present or a past participle (p) coda, in addition to/in lieu of a PP or an adjective phrase (AP) coda, as shown in (1-3). This paper looks at *there*-BE-ESs, with a view to illuminating the syntax and the semantics of p-codas.

(1) Bare-*there*-BE-ES:

There is [a rabbit]_{pivot}.

(2) *There*-BE-ESs with PP or AP codas:

a. There was [a live pig]_{pivot} [at the picnic]_{PP coda}.

b. There was [no one]_{pivot} [available]_{AP coda}.

(3) *There*-BE-ESs with p-codas:

a. There were [some men]_{pivot} [shouting]_{present p-coda} ([on the street]_{PP coda}).

b. There was [a live pig]_{pivot} [roasted]_{past p-coda} ([at the picnic]_{PP coda}).

In the literature, there has been a lack of consensus on the status of p-codas: some authors view them as predicates of small clauses, some as depictive verbal adjuncts, and still others treat them as arguments of existential BE (more on this later).¹

In this paper, I offer a way to resolve some of the tension between the existing analyses. Two central claims will be that (i) p-codas have received conflicting analyses because they are syntactically complements but semantically modifiers and (ii) their hybrid status is due to the argument structure of existential BE.

Some of the key assumptions to be taken from the literature are that (i) *there*-BE-ESs are descriptions of some implicit/abstract spatio-temporal location (e.g., Milsark 1974, Sasse 1987, Blutner 1993, Erteschik-Shir 1997, Borschev & Partee 2001, Felser & Rupp 2001, Basilico 2003, Hazout 2004); (ii) *there* is the syntactic subject and the rest of the ES serves as its syntactic predicate (e.g., Jenkins 1975, Williams 1994, Zamparelli 2000, Hazout 2004, Hartmann 2008; cf. Moro 1997); (iii) existential BE is thematic (e.g., Milsark 1974, Keenan 1987,

Comorovski 1995, Borschev & Partee 2001); and (iv) a pivot denotes a generalized quantifier whose denotation contains an implicit predicate argument (Francez 2007).

This paper is organized as follows: section 2 briefly reviews two most popular analyses of p-codas, namely, the small clause analysis and the depictive verbal adjunct analysis. Section 3 presents a new analysis of *there*-BE-ESs with p-codas. Section 4 shows how the proposed analysis captures various properties of the construction. Finally, section 5 summarizes and concludes the paper.

2 Two most popular analyses of p-codas

2.1 The small clause analysis

What I call the small clause (SC) analysis posits that p-codas such as those in (3) stand in a direct predication relation with the pivot, forming a SC with it, as schematized in (4) (e.g., Stowell 1978, Safir 1982, Lasnik 1995, Chomsky 1995, Felser & Rupp 2001, Kallulli 2008, Deal 2009).

(4) [_{VP} BE [_{SC} [_{NP} some men] [_{XP} shouting]]]

As supporting evidence, some proponents of the SC analysis point out that even though p-codas are not required by syntax, they are not truly optional in a semantic sense. By way of illustration, compare the sentences in (5). While (5a) will be true if some book exists at some discourse-salient/implicit location, (5b) will be true if some book does not exist there (Chomsky 1995: 272).

- (5) a. There is a book.
b. There is a book [missing]_{present p-coda}.

Notably, past p-codas exhibit a similar behavior to present p-codas. To illustrate, (6a) asserts the existence of some books at some location but (6b) asserts about their non-existence. Furthermore, whereas (6a) describes a static state, (6b) describes a dynamic event, i.e., an event of some books getting burnt to ashes at some spatio-temporal location (Milsark 1974, McNally 1997).

- (6) a. There were books.
b. There were books [burnt to ashes]_{past p-coda}.

2.2 The depictive verbal adjunct analysis

Arguing against the SC analysis, several authors have claimed that p-codas are best analyzed as depictive verbal adjuncts (DVAs) which are adjoined to the main predicate's projection, as schematized in (7) (e.g., McNally 1997, Hazout 2004, Francez 2007, Hartmann 2008). Under the DVA analysis, p-codas are

treated on a par with secondary predicates and thus they are assumed to bear an indirect predicative relation to the pivot.

(7) [VP [V' [V BE [NP some men]]] ... [XP shouting]]

As far as I know, the most compelling argument for the DVA analysis has been that p-codas behave like untensed verbal adjuncts reported in Cinque 1990 in that while arguments (ARs) may extract from p-codas, adjuncts (ADs) may not, as shown in (8) (see McNally 1997, Hartmann 2008).

- (8) a. To whom has there just been a celebrity introduced? (AR extraction)
b. ?How many cookies have there been children baking? (AR extraction)
c. *How many miles a day are there people running? (AD extraction)
d. *How badly has there been a man shot? (AD extraction)
(taken from McNally (1997:68))

2.3 Weighing the two analyses against each other

While the SC analysis gives us a way to capture the semantic contribution of (some) p-codas such as those in (5-6), it has difficulty accounting for the AR/AD asymmetry exemplified in (8); if p-codas were predicates of SCs, they should readily permit AD extraction.

The DAV analysis, on the other hand, lets us capture the AR/AD asymmetry but it cannot explain why there is a non-trivial semantic difference between bare *there*-BE-ESs and *there*-BE-ESs with p-codas; that is, why some p-codas do not seem entirely optional, as illustrated in (5-6).

A closer look at the extraction facts also casts some doubt on the DVA analysis. According to the pilot study I conducted with 42 native speakers of English via a written questionnaire method, AD extraction is sometimes possible. For example, all my subjects found the following sentences grammatical, even though they involve AD extraction from a p-coda.

- (9) A: In what part of the body were there people [injured ___]?
B: In the eye.

- (10) A: ?How seriously were there people [injured ___ in the recent explosion]?
B: Extremely seriously.

Also notable is the fact that my subjects were not always permissive with AR extraction from a p-coda, as their grammaticality judgments on the following data suggest:

- (11) A: *Which cookies will there be children from John's church [baking ___]?

B: Chocolate chip cookies.

(12) A: *Who was there some boy [chasing __] at the park?

B: Some girl wearing a blue hat.

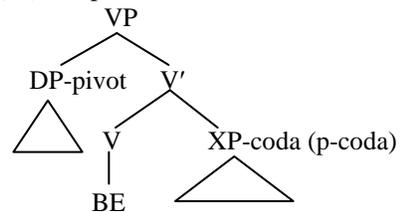
If the grammaticality judgments reported here are truly valid, we can conclude that extraction from p-codas does not exhibit as sharp an AR/AD asymmetry as has been claimed by some advocates of the DVA analysis (e.g., McNally 1997, Hartmann 2008).

3 A New Analysis

3.1 The syntax of *there*-BE-ESs with p-codas

In order to improve on the existing analyses while incorporating their core insights, I propose that *there*-BE-ESs with p-codas have a Larsonian (1988) VP-shell structure in which both the pivot and a p-coda occur as the complements of BE, but the coda occurs as the inner argument, forming an underlying constituent with the existential verb, as depicted in (13).

(13) Proposal on the VP structure of a *there*-BE-ES with a p-coda:



This idea draws on the view shared by some formal semanticists that when a *there*-BE-ES contains a coda, the coda and the pivot occur as co-arguments of BE, and the BE-pivot-coda string has the ternary branching structure sketched in (14) (e.g., Milsark 1974, Keenan 1987, Comorovski 1995, Borschev & Partee 2001).

(14) [_S [there] [_{VP} [_V BE [_{DP-pivot} some men] [_{XP-coda} shouting]]]]

I argue for a slightly more hierarchical structure here, however, because pivots can bind reciprocals or bound variables inside p-codas, as shown in (15), and given Principle A of Binding Theory, in order for such binding relations to hold, p-codas have to be lower than pivots in the syntactic structure, rather than at the same level.

(15) a. There were [some boys and girls]_i [kissing each other_{i/*j}].

b. There were [several students]_i [wanting to meet their_{i/*j} professors].

3.2 The full-blown structure of *there*-BE-ESs with p-codas

To articulate the full-blown structure of *there*-BE-ESs with p-codas, I make the following assumptions.

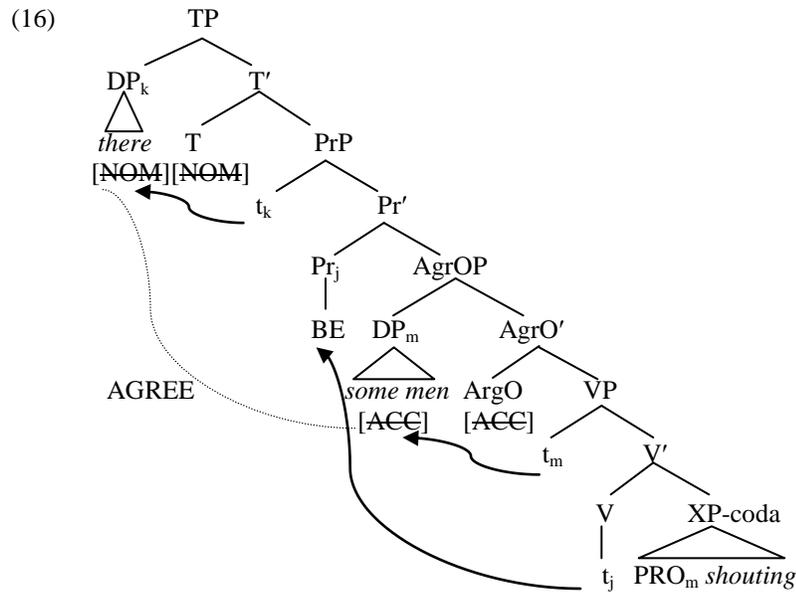
Firstly, I assume that existential BE is the main sentential predicate and thus it occurs heading a Predicate Phrase (PrP) in the sense of Bowers (1993), though it originates from a lower V position as shown in (13) (compare Hazout 2004, Hartmann 2008).

Second, *there* is the syntactic subject of an ES and as such, it is inserted at [Spec, PrP] but it later moves to [Spec, TP] and in so doing, it not only fulfills EPP but also receives Nominative Case (NOM) (Hartmann 2008).

Third, the pivot originates at [Spec, VP] but for case reasons, it moves to [Spec, AgrOP] (see Caponigro & Schütze 2003 for arguments for this movement). By moving to this higher position, the pivot also enters into an AGREE relation with *there*, a requirement a *there*-BE-ES has to meet, according to Deal 2009.

Lastly, a p-coda contains a PRO which is obligatorily controlled by the pivot. A PRO is posited here to satisfy the Theta Criterion.

Taken together, this set of assumptions yields (16) as the structure for (3a) (for simplicity, I ignore the optional PP-coda *on the street* here).



3.3 The semantics of *there*-BE-ESs with p-codas

In capturing the semantics of *there*-BE-ESs with p-codas, I build on Francez' (2007) formal analysis of the construction.

3.3.1 Francez' (2007) analysis of *there*-BE-ESs with codas

Francez (2007) claims that p-codas are contextual modifiers, by which he means that they contribute a subset of the topic time within which the ES's predicative meaning holds (this idea draws on McNally 1997). To formally implement this idea, Francez makes the following claims on each component of the *there*-BE-ES construction.

First, *there* and BE are both semantically vacuous, and the pivot functions as the main semantic predicate of a *there*-BE-ES.

Second, a pivot DP denotes a generalized quantifier (GQ) whose denotation contains an implicit predicate argument (compare, a.o., Barwise & Cooper 1981, Keenan 1987). To illustrate, the pivot of (3a) has the following lexical entry:

$$(17) \text{ [[some men]}]_{\text{pivot}} = \lambda P_{\langle \text{et} \rangle} [\text{some}(\lambda z[\text{men}(z)], P)]$$

Third, codas denote sets of GQs and they further provide the value for the implicit predicate argument inside the pivot's denotation, as suggested by the following lexical entry for the p-coda *shouting* in (3a).

$$(18) \text{ [[shouting]}]_{\text{p-coda}} = \lambda P_{\langle \text{et} \rangle} [\text{a}(\lambda i[i \subseteq I_t], \lambda j[P(\lambda x[\text{shouting}(x)(j)])])]$$

(Here, I_t stands for the topic time; j is the hold time of shouting relative to individual x .)

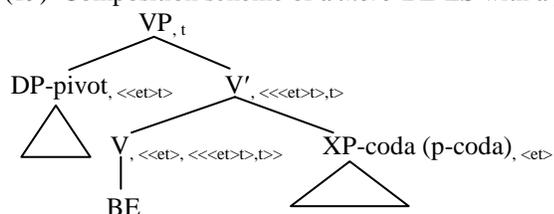
3.3.2 Marrying the syntax and the semantics of *there*-BE-ESs with p-codas

When we try to marry Francez' (2007) semantic analysis and the proposed syntactic analysis of *there*-BE-ESs, we run into some difficulty because while we analyze p-codas as inner complements of BE, Francez analyzes them as DVAs, which are located higher than both the pivot and BE, as depicted in (7). But we can make his semantics compatible with our syntax if we slightly revise our view on existential BE: while Francez assumes it to be semantically vacuous, we may entertain the possibility that it has some semantic import. More specifically, what I have in mind is that the existential verb contributes the existential quantifier and the topic time inside the coda's denotation given in (18), and it is also responsible for a pivot's denotation such as (17) to contain an implicit predicate argument.

Under this revised view, then, a *there*-BE-ES with a p-coda will have the composition scheme given in (19). This composition scheme is meant to show that pivots and p-codas end up having the semantics they do under Francez's (2007) analysis, precisely because they are semantic arguments of BE. That is,

what is responsible for their rather ‘unusual’ semantics is the syntactic predicate’s argument structure.

(19) Composition scheme of a *there*-BE-ES with a p-coda:



According to the above composition scheme and other syntactic/semantic assumptions made thus far, then, the semantics of sentence (3a) is derived in the following manner (again ignoring the optional PP-coda):

- (20)a. $[[\textit{some men}]] = \lambda Q_{\langle et \rangle}[\textit{some}(\lambda y[\textit{men}(y)], Q)]$
 b. $[[\textit{BE shouting}]] = \lambda P_{\langle \langle et \rangle \rangle}[\mathbf{a}(\lambda i[i \subseteq I_t], \lambda j[P(\lambda x[\textit{shouting}(x)(j)])])]]$
 c. $[[\textit{there were some men shouting}]] = \textit{ignoring Tense \& there}$
 $= [[\textit{BE shouting}]]([[\textit{some men}]]) = \textit{via Functional Application (FA)}$
 $= \mathbf{a}(\lambda i[i \subseteq I_t], \lambda j[\textit{some}(\lambda y[\textit{men}(y)], \lambda x[\textit{shouting}(x)(j)])])$
 (Here, I_t stands for the topic time; j is the hold time of shouting relative to individual x .)

3.4 Summary

The new analysis posits that existential BE selects for a p-coda as its inner complement and the pivot as its next complement, and because of the argument structure of BE, the pivot ends up denoting a GQ whose denotation contains an implicit predicate argument and the p-coda ends up denoting a set of GQs which restricts the pivot’s denotation. In the next section, we assess merits of this analysis, in comparison with the existing analysis.

4 Assessing the proposed analysis

4.1 Comparing with the DVA and the SC analyses

The proposed analysis improves on both the DVA and the SC analyses of *there*-BE-ESs and in so doing helps resolve the tension between them, albeit indirectly.

First, by treating p-codas as syntactic complements of a lexical verb, namely, existential BE, it correctly predicts that AD extraction from p-codas will be possible, in contrast to the DVA analysis.

Second, unlike the SC analysis, the present analysis does not assume that a p-coda (or any coda) is the main predicate of a *there*-BE-ES and hence does not

incorrectly predict that every *there*-BE-ES will have a copular sentence counterpart (or vice versa), contrary to fact, as illustrated below (see, a.o., Jenkins 1975, Williams 1984).

- (21) a. There is a solution to this problem. (*there*-BE-ES)
b. A solution is to this problem. (copular sentence)
(adapted from Jenkins 1975)

Our analysis still establishes some type of subject-predicate relation between a pivot and a p-coda, however, since it posits that one denotes a GQ and the other ends up denoting a suitable functor for it, that is, a set of GQs.

Third, the present analysis provides a way to explain why some p-codas are not entirely optional, as exemplified in (5-6). Simply put, their non-optionality stems from their complement status. Why is it that some *there*-BE-ESs may be bare, then, as illustrated in (1)? In answer to this question, I submit that p-codas may sometimes be omitted (or not spelled out) because the information they convey is not crucial to the discourse at hand. Their partial optionality should not surprise us too much, though, since even objects of transitive verbs can be omitted sometimes, as illustrated in (22).

- (22) A: Would you like something to eat?
B: I just ate ___.

The ability to explain the (non)-optionality of p-codas is clearly an improvement on both the DVA and the SC analyses, since such analyses would incorrectly predict p-codas to be either invariably optional or invariably obligatory.

4.2 Capturing other recalcitrant properties of *there*-BE-ESs

The proposed analysis accounts for several other recalcitrant properties of *there*-BE-ESs with p-codas. In the interest of space, I discuss three such cases here.

4.2.1 Non-omissibility of existential BE

One of the characteristic properties of *there*-BE-ESs is that unlike copular BE, existential BE cannot be omitted in certain subject-to-object raising contexts, i.e., when a *there*-BE-ES occurs embedded under *consider/believe*, as exemplified in (23) (see, a.o., Moro 1997, Hartmann 2008).

- (23) a. I consider there *(to be) dinosaurs. (*there*-BE-ES)
b. I consider John (to be) a fool. (copular construction)

In the literature, this property has been ascribed to the thematic property of existential BE (e.g., Hartmann 2008) or to the hypothesis that *there*-BE-ESs

instantiate a predicate raising construction in which the underlying predicate of a sentence, i.e., *there*, surfaces as the syntactic subject (Moro 1997).

Under the present analysis, the non-omissibility of existential BE follows from its semantic import as well as its thematic nature (compare Hartmann 2008): unlike its copular counterpart, existential BE is not semantically vacuous and thus is required to be present in the sentence.

4.2.2 Semantic differences between ESs with present vs. past p-codas

Authors like Milsark (1974) and McNally (1997) have made an interesting observation that while *there*-BE-ESs with present p-codas have a stative semantics, those with past p-codas have a more eventive semantics. To exemplify, whereas sentence (24a) describes a homogeneous event, (24b) describes an event that involves a change of stage.

- (24) a. There was a pig running around.
b. There was a live pig roasted (at the picnic).
(adapted from McNally 1997: ex. (314))

To my knowledge, McNally 1997 is the only attempt that has been made to account for such semantic differences. Under her analysis, however, the semantics of *there*-BE-ESs is captured at the expense of assuming somewhat different syntax for the two types of p-codas. In a nutshell, she posits that while present p-codas invariably occur as what we call DVAs here, past p-codas occur as reduced relative clauses (RC) which are located inside the pivot's nominal projection, as schematically represented in (25) and (26), respectively. She further assumes that present p-codas and past ones have somewhat different semantics (see her work for details).

- (25) Partial structure for a *there*-BE-ES with a present p-coda:
[_{VP} [_{V'} [_V BE [_{NP} a pig]] ... [_{XP} running around]]

- (26) Partial structure for a *there*-BE-ES with a past p-coda:
[_{NP} a [_{live pig}] [_{RC} roasted]]

Under the present analysis, a more uniform analysis is possible for present and past p-codas. To illustrate, (27), which contains a past p-coda, can be assigned an identical syntactic structure to (3a); that is, its full-blown structure will look like (16) except that *injured* occurs in lieu of *shouting* and *several* occurs instead of *some*.

- (27) There were [_{several men}]_{DP-pivot} [_{injured}]_{XP-coda}.

Under this analysis, we can nonetheless capture the more “eventive” semantics of (27) in comparison to (3a), if we assume that the lexical entries of past p-codas have passive as well as change of state meaning built into them. That is, p-codas carry semantics of *get*-passive, as exemplified in (28) and (29).

(28) $[[BE\ injured]] = \lambda P_{\langle\langle et \rangle\rangle} [\mathbf{a}(\lambda i[i \subseteq I_t], \lambda j[P(\lambda x[\text{get.injured}(x)(j)])])]$

(29) a. $[[several\ men]] = \lambda Q_{\langle et \rangle} [\mathbf{several}(\lambda y[\text{men}(y)], Q)]$
 b. $[[BE\ injured]] = \lambda P_{\langle\langle et \rangle\rangle} [\mathbf{a}(\lambda i[i \subseteq I_t], \lambda j[P(\lambda x[\text{get.injured}(x)(j)])])]$
 c. $[[there\ were\ several\ men\ injured]] = \text{ignoring Tense \& there}$
 $= [[BE\ injured]]([[several\ men]]) = \text{via FA}$
 $= \mathbf{a}(\lambda i[i \subseteq I_t], \lambda j[\mathbf{several}(\lambda y[\text{men}(y)], \lambda x[\text{get.injured}(x)(j)])])$
 (Here, I_t stands for the topic time; j is the hold time of shouting relative to individual x .)

4.2.3 Predicate restriction on (adjectival) codas

Another well-known property of *there*-BE-ESs (which is due to Milsark 1977) is that only stage-level predicates may occur in coda position, as shown below.

(30) a. There are firemen available. (stage-level)
 b. *There are firemen intelligent. (individual-level)

In the literature, this restriction has been attributed to three different factors: (i) the semantics of the pivot, more specifically, the requirement that it has to be a weak Quantifier Phrase (e.g., Milsark 1977, Ladusaw 1994); (ii) the presence of the Kratzerian event argument in the structure signaled by *there* (e.g., Felser & Rupp 2001, Basilico 2003, Kallulli 2008); and (iii) the secondary predicate status of codas (e.g., McNally 1997, Hartmann 2008).

Under the present analysis, the predicate restriction stems from the compositional scheme of *there*-BE-ESs: by combining with BE, codas end up serving as contextual modifiers in the sense of Francez (2007). Hence, only those that can contribute a property which holds during some subset of the topic time can occur in coda position. That is, codas have to be what we call S-level predicates.

Notably, this line of account is not incompatible with the existing analyses in that it speaks to the peculiarity of the pivot’s semantics and the argument structure of the main sentential predicate.

5 Conclusion

This paper has investigated the syntax and the semantics of p-codas of *there*-BE-ESs. I have claimed that (i) p-codas exhibit seemingly conflicting behavior because they are syntactically complements but semantically modifiers and (ii)

their hybrid status is due to the argument structure of existential BE. It has also been suggested that due to BE's argument structure and the syntactic configuration resulting from it, a *there*-BE-ES ends up denoting a higher-order predicate whose meaning holds true of some implicit/abstract spatio-temporal location. If proven valid, the claims made here implicate that everything in *there*-BE-ESs (including *there*, BE, and any type of coda) is there for a reason; they are not semantically vacuous nor are merely syntactic adjuncts.

Notes

* I wish to thank the audience at WECOL 2011 at Simon Fraser University, in particular Hotze Rullmann, Dennis Ryan Storoshenko, and Gregory Ward, for their helpful comments, although for space reasons, I could not incorporate all of them here. Needless to say, all remaining errors are my own responsibility.

¹ It should be noted that some p-codas may be construed as attributive noun modifiers, as illustrated by the following sentence.

(i) At Jill's party, there were people studying Gothic at MIT.
(adapted from Milsark 1974: 184)

Although such cases are robust, we will not be concerned with them here because there is little controversy over their syntax. More concretely, it is widely held that they are reduced relative clauses located inside the pivot nominal's maximal projection, as schematized in (ii) (see, e.g., Milsark 1974, Hartmann 2008).

(ii) At Jill's party, there were [_{NP} [people] [_{XP} studying Gothic at MIT]].

In comparison, when a p-coda contributes to describing the situation of some spatio-temporal location, as is the case in (3), it is far less clear where exactly they might/should be located, because there are several syntactic possibilities for them, as shown in subsequent sections.

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Min-Joo Kim
Texas Tech University
min-joo.kim@ttu.edu