RESEARCH

Existential unaccusativity and new discourse referents

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It is well-known that new information strongly disprefers subject position in English (Horn 1986; Prince 1981; 1992; Beaver et al., 2005), even though English allows indefinite subjects. English is therefore seen as one of the many languages that adheres to the given-new contract (Clark & Haviland, 1977). This paper argues that a subset of intransitive sentences in English readily establishes new discourse referents in subject position—in an apparent breach of the given-new contract. These sentences, exemplified by *A fancy lady waltzed in*, are analyzed as syntactically unaccusative and semantically as having an existential proposition. These sentences are termed *existential unaccusative*: in the proposed VP structure, a verbal root that (typically) denotes manner of motion selects for a headed small clause whose subject is interpreted as a Path to a contextually-determined location. The analysis adapts McCloskey's (2014) analysis of Irish existentials to English, and I argue that sentences with this structure establish discourse referents by the same means as existential *there* BE sentences. The analysis is discussed in the context of claims made by Du Bois (1987) that languages organize information such that new discourse referents are established as objects of transitive sentences and subjects of intransitive sentences. This analysis suggests that Du Bois's generalization holds for a structurally distinct subset of intransitives in English in sharing the discourse function of introducing new discourse referents.

Keywords: unaccusativity; existential sentences; discourse referents; ergativity; Preferred Argument Structure; syntax-semantics interface

1 Introduction

1.1 English as an ergative language?

Du Bois (1987) makes the novel argument that ergative alignment has its basis in discourse function. In an ergative system, subjects of intransitive sentences and direct objects of transitive sentences have the same case morphology—absolutive (ABS); subjects of transitive sentences are marked ergative (ERG). The ergative system is standardly illustrated with the conventional abbreviations from Dixon (1979) to indicate transitive subject (A) and transitive object (O–sometimes given as P instead), as shown in (1); and intransitive subject (S), as shown in (2), where boldface highlights the ergative pattern.

(1)   *Transitive sentences*:   A   **O**
                                    DP-ERG   DP-ABS

(2)   *Intransitive sentences*:   **S**
                                      DP-ABS

Although much research before and after Du Bois (1987) focuses on the syntactic and morphological aspects of ergative systems (see Deal 2015 and references therein), Du

Bois argues that the pattern in (1) and (2) emerges from a universal distribution of DP information status in discourse: new information tends to occur in the S and O roles with DPs marked ABS, and old information tends to occur in the A role. This observation led to Du Bois's proposal, Preferred Argument Structure (PAS). According to PAS, discourse referents are introduced in the S or O role, and they are continued in the A (or S) role.

PAS is proposed as a linguistic universal, but English appears to be a glaring exception to it, conforming only with respect to the O role. In English, new information tends to be introduced in direct object position rather than in subject position, as corpus work in English and work on PAS has consistently found (Prince 1981, 1992; Francis et al., 1999; Everett 2009; Haig & Schnell 2016). For example, the transitive pattern can be illustrated by a discourse like (3), where in (3a) the DP in the A role has the status GIVEN (and is pronominal), and NEW information occurs in the direct object position, in the O role. The referent of the O role in (3a) is then the subject of the subsequent (intransitive) utterance (3b).

(3) a. $[I]_{given}$ saw [a cute puppy]$_{new_i}$ yesterday…
  b. $[It]_{given_i}$ jumped all around.

The discourse pattern in (3) is unremarkable and has been described in various terms in different frameworks; related information structural notions (with some definitional differences) that split sentences like (3a) into complementary parts include: *theme-rheme, subject-predicate, topic-comment,* and *presupposition-focus*.[1]

Birner & Ward (2009) summarize these discourse patterns thus: "It has long been recognized that many languages operate under a 'given/new' principle: that is, all other things being equal, a speaker will prefer to place information that they take to be familiar to their addressee earlier in a sentence, and information that they take to be new to their addressee later in the sentence" (Birner & Ward, 2009: 1168). The given-new principle holds to such a degree that it has been called a syntactic "conspiracy" (Prince 1981; Horn 1986).[2] Clark & Haviland (1977) make a related generalization, though they put it in less menacing terms—the "given-new contract" (Clark & Haviland 1977: 3; see also Halliday 1967a; b).

When it comes to English, the given-new contract is at odds with part of Du Bois's generalizations. Although it is clear that one of the positions for new information in English is the direct object position, PAS predicts that the intransitive subject position is also a preferred position for new information. How can both parts of the generalization from PAS be true in an SVO language like English, where any NEW (canonical) subject would violate the given-new contract? Furthermore, Du Bois's prediction about the S role has been challenged by subsequent work in PAS with regard to the frequency with which new S occur (regardless of intransitive subtype).[3]

This paper argues that a subset of intransitive sentences in English readily introduces new information in subject position—in an apparent breach of the given-new contract. I argue that this is because they share parts of structure and meaning with existential *there* BE sentences, those sentences that are so well-suited for establishing discourse referents.

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[1] The pattern in (3) has been described as a topic chain (Vallduví, 1992) or a continued topic (Erteschik-Shir, 2007), for example. The enterprise of Centering Theory (Grosz et al., 1995) focused on predicting the form of a DP (e.g., definite, pronominalized) in an utterance given its position in the preceding sentence.

[2] Kučerová (2012), for example, has shown that in Czech, Russian, and Serbo-Croatian—languages with relatively free word order—movement occurs so that given information precedes new information.

[3] Everett (2009), for example, discusses the confounding factors of humanness and animacy; see also Haig & Schnell (2016) for corpus work in detailed support of Everett (2009). See Kärkkäinen (1996) for a discussion of genre effects and PAS; see Kumagai (2006) for a thoughtful reanalysis and discussion of the data from the English Pear film narratives.

The term *existential unaccusative* is used for these sentences, illustrated in (4), since I analyze them as syntactically unaccusative.

(4)   *Existential unaccusative sentences*
    a.   A lady waltzed in.
    b.   A cab pulled up.
    c.   A clown came over.
    d.   A little boy darted out.

This analysis takes as given that there is more than one structural way for a verb phrase to be unaccusative (Harves 2002; Kural 2002; Deal 2009; Irwin 2012). The term *unaccusative* has been used in different ways; here I take it to refer to a structural configuration in which a sentence lacks an external argument and has a VP-internal argument that requires structural case (Embick 2004; Irwin 2012). On my analysis, then, existential unaccusatives represent a type of unaccusative structure that shares some syntactic and semantic properties with existential *there* BE sentences. I propose that because of this shared structure and meaning, existential unaccusatives establish new discourse referents by the same means as existential *there* BE sentences. They are able to do so despite the fact that their surface word order does not place given before new information. In this way, Du Bois's (1987) claims about the discourse link between the S and O roles are shown to hold, though only for a subset of intransitive subjects in English. This analysis thus brings together research from a variety of theoretical perspectives to shed light on the insights of argument structure, information structure, and the phenomenon of ergativity.[4]

I would like to emphasize before we proceed that the claims in this paper are not about the relative *frequency* with which English makes use of the S or O role for new information. Indeed, it is well-known that even across genres, new information in English prefers the O role over the S role (Prince, 1981).[5]

1.2 Overview of the analysis

On the analysis proposed in this paper, sentences like those in (4) establish discourse referents by the same means as existential *there* BE sentences—through the function INSTANTIATE, first proposed by McNally (1992; 1997). In other words, I propose that sentences like (5b) are best analyzed as sharing parts of the structure and meaning of sentences like (5a).

(5)   There BE *and existential unaccusative sentences*
    a.   There was a lady at the door. *Existential* there BE *sentence*
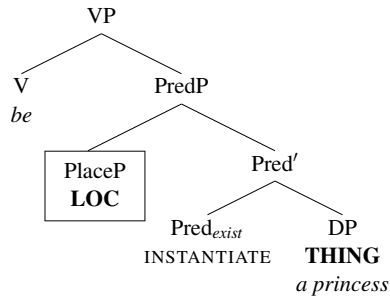   b.   A lady waltzed up (to the door). *Existential unaccusative*

In a nutshell, the analysis is that existential BE and existential unaccusative structures both contain a small clause (SC) that is headed by a dedicated, existential SC head that is labeled Pred$_{exist}$. The denotation of the small clause head is the same in both the *there* BE and the existential unaccusative structure, and McNally's (1992; 1997) existential predicate INSTANTIATE is a part of the denotation of this head. The trees in (6) show the VP that will be motivated for English *there* BE sentences in English (building on McCloskey 2014, as I discuss in detail below) and the VP that is proposed for existential unaccusative sentences.

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[4] See Williams (1987), "English as an ergative language," for an orthogonal argument that English has the properties of an ergative case marking system in nominalizations.
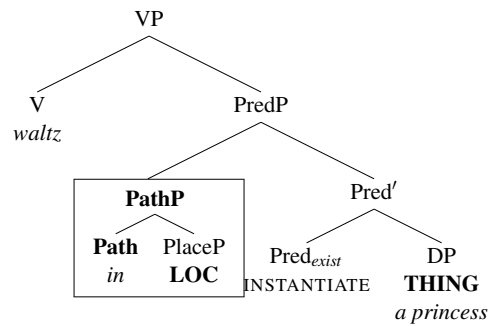
[5] But for corpus work showing that within intransitives, only the sentences that I analyze here as existential unaccusatives establish new discourse referents, see Irwin (2012) and Irwin (2016a; b).

(6)　　*English* there BE *and existential unaccusative structures*

　　a.　There BE *structure*　　　　　　　b.　*Existential unaccusative structure*

VP		Existential unaccusative structure VP

V
be
PredP

PlaceP **LOC**　　　Pred′

Pred$_{exist}$　　DP
INSTANTIATE　**THING**
　　　　　a princess

V
waltz
PredP

PathP
Path PlaceP
in **LOC**　　　Pred′

Pred$_{exist}$　　DP
INSTANTIATE　**THING**
　　　　　a princess

An important difference between the two structures in (6) is the specifier of the small clause: in the existential BE structure, the specifier of Pred$_{exist}$ is a contextually-determined spatio-temporal location (Francez, 2007), which I implement as a PlaceP. In the existential unaccusative structure, the specifier of Pred$_{exist}$ is interpreted as a Path that leads to the contextually-determined LOC. This is shown in (6), with some annotation added to facilitate comparison between the structures. The terms THING and LOC are borrowed from an influential line of research by Partee & Borschev (henceforth P&B), which I will reference throughout this paper.[6]

　On the approach to argument structure that my analysis assumes, the identity of the verb *waltz* is separated from the syntactic structure in which it occurs (Marantz, 2013).[7] On this view, the verb labeled *waltz* in (6)b is analyzed as the combination of a functional verbalizing head *v* that is modified by the root $\sqrt{\text{WALTZ}}$. This approach captures the flexibility seen with the manner of motion verbs that typically occur in existential unaccusatives, since these verbs have historically been the focus of problematic "unaccusativity mismatches" since they can occur in both unaccusative and unergative sentences (Levin 1986; Levin & Rappaport Hovav 1995). What follows will for the part not show the decomposition of the *v* node as e.g., [$\sqrt{\text{WALTZ}}$ *v*], and for this reason the trees illustrating the analysis will have the uppercase label (VP) shown in (6).

1.2.1 Empirical payoffs

Readers familiar with the insights of Hoekstra & Mulder (1990) will recognize the similarity of that analysis to the one proposed here. With examples like (7), Hoekstra & Mulder (1990) showed that a verbal root like *springen* 'jump' can occur in an unergative or an unaccusative structure, as diagnosed by auxiliary alternation.

(7)　　*Dutch* (Hoekstra & Mulder, 1990: 8)
　　　　dat　Jan　in　de　sloot　gesprongen　is/heeft
　　　　that　Jan　in　the　ditch　jumped　　　is/has
　　　　that Jan in the ditch jumped is/has

The current proposal shows that a similar situation holds for English, though English has lost the auxiliary alternation that other Germanic languages like Dutch still have. Another payoff of the analysis is an explanation for discourse coherence judgments for sentences with indefinite subjects, which I briefly discuss next.

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[6] P&B's work includes Borschev & Partee (1998) and continues through Partee et al. (2011).
[7] The view of "syntacticized event structure" (Marantz, 2013) has been associated with Hale & Keyser (1993) and finds current exposition in much recent work, which I build on, including Ramchand (2008), Schäfer (2008), Wood (2012), Alexiadou et al. (2014), Myler (2014), and Kastner (2016), among others.

The discourse function of existential unaccusative sentences can be illustrated with discourse snippets inspired by those of Karttunen (1976), though he used them to illustrate the conditions that thwart the establishment of discourse referents. Consider the discourses in (8) and (9), which show that a non-negated sentence can establish a discourse referent for an indefinite DP (*a unicorn*) in direct object position (8) and for the pivot of an existential sentence (9).[8] The successful establishment of a discourse referent is illustrated with the pronominal in the second sentence of each discourse.

(8)   *Discourse referent: Transitive direct object*
        The princess kissed a unicorn at the Renaissance fair. It was sparkling white.

(9)   *Discourse referent: Pivot of an existential BE sentence*
        There was a unicorn at the Renaissance fair. It was sparkling white.

One of Karttunen's important points was that negation is one of the factors that prevents the establishment of a discourse referent (10):

(10)   *No discourse referent established: Negation*
        The princess did not kiss a unicorn at the Renaissance fair. #It was sparkling white.

I would like to turn now to judgments on the establishment of discourse referents that are somewhat more subtle. Consider, for example, discourses like those in (11) and (12)—where these sentences are pronounced without any special focus-inducing prosody:

(11)   *Discourse coherence: Transitive subject*
        a.   A frog kissed the princess.
        b.   … ??It was green and covered with warts.
        c.   … It was a frightening sight.

(12)   *Discourse coherence: Unergative subject*
        a.   A unicorn whinnied.
        b.   … ??It was sparkling white.
        c.   … It was a marvelous sound.

The continuations that refer to the discourse referent established by the subject of a transitive or an unergative sentence sound degraded, in my judgment. Pronouncing these sentences with prosodic focus on the subjects can help make the subsequent anaphoric reference to the indefinite sound less odd, but such a prosody requires a more elaborate context in order to sound natural. Without further context, the most salient discourse referent established in (11a) and (12a) is the event that each describes—the kissing event in (11c), or the sound event in (12c).

The degraded nature of the discourse continuations in (11b) and (12b) is curious, and it is not immediately clear which part of the grammar is responsible for it. It is clear that (11a) and (12a) establish a discourse referent for their subjects—indefinite subjects are grammatical in English—so these sentences are of a different order than the Karttunen-type examples. But without further context, the discourse continuations for the transitive and unergative subjects in (11b) and (12b) sound odd.

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[8] These sentences use the non-denoting DP *a unicorn* to emphasize the fact that what is established is a *discourse* referent rather than a real-world referent; see Karttunen (1976: 366) and Heim (1983).

In contrast to the transitive and unergative sentences, the intransitive sentences that I analyze as existential unaccusative sound perfectly natural as discourse-referent introducers (13):

(13)   *Discourse coherence: Existential unaccusative subject*
      a.   A unicorn wandered over. It was sparkling white.
      b.   A unicorn walked in. It was sparkling white.

The most natural pronunciation for the sentences in (13) is one in which sentence stress falls on the (indefinite) subject; this is the so-called "unaccusative" prosody that has been the subject of much discussion.[9] Although this stress pattern is relevant to the discourse-referent establishing properties of these sentences, it is worth noting that other unaccusative sentences—with the same prosody—do not establish discourse referents for their subjects as felicitously as those in (13). For example, intransitive change-of-state sentences like those in (14) are standardly analyzed as unaccusative in structure—and are pronounced with the accompanying prosody—but they do not establish discourse referents for their DPs as felicitously as those in (13) or as sentences with verbs like *appear* that more straightforwardly denote coming-on-the-scene.[10]

(14)   *Discourse coherence: Intransitive change-of-state sentences*
      a.   A unicorn froze. ??It was sparkling white.
      b.   A unicorn fell. ??It was sparkling white.

On the analysis that I develop in this paper, these discourse felicity judgments reflect the fact that sentences like (13) establish their discourse referents by a mechanism that is different from whatever establishes the discourse referent for unergative and transitive indefinite subjects. On this analysis, an existential unaccusative sentence establishes a discourse referent for its sole argument in the same way that an existential *there* BE sentence does. I note here that the relevant notion of *discourse referent* for this analysis is what McNally (1992; 1997) calls a "persistent" discourse referent. This type of discourse referent establishment is closely related to the notion of topic establishment.[11]

The rest of this paper supports the analysis of the shared structure and meaning between *there* BE sentences and existential unaccusative sentences. On the syntactic side, I show that existential unaccusative sentences with indefinite subjects pattern with existential *there* BE sentences in contexts such as negation and tag questions. On the semantic side, I bring together observations that in both *there* BE and existential unaccusatives sentences, the meaning of the VP can be paraphrased as "coming on the scene," regardless of the verb meaning on its own.

1.3 The structure of the paper

Because my analysis builds on the intuition that existential unaccusative sentences share parts of structure and meaning with *there* BE sentences, I first detail my assumptions about the structure and relevant discourse functions of existential sentences. This is the goal of

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[9] See, for example, Kahnemuyipour (2004; 2009), Zubizarreta & Vergnaud (2006), Kratzer & Selkirk (2007), and Irwin (2011; 2012). Schmerling (1976) is credited with first discussing in detail the fact that certain intransitives constitute an exception to the Nuclear Stress Rule of Chomsky & Halle (1968)—though these exceptions were the subject of discussion almost as soon as the NSR was proposed (see Bresnan 1971, for example).

[10] The other subtype of unaccusative structure is associated with change-of-state predicates like *break* and *freeze*; see Irwin (2012) for a discussion of these two unaccusative structures.

[11] See von Heusinger (2011) for a helpful discussion of the intimately-related-notion of indefiniteness and specificity across frameworks, including Givón's (1983) important notions of referential persistence and topic continuity (von Heusinger, 2011: 1027).

Section 2, which provides some background on the analyses of existential sentences that my analysis builds on. This section also shows how McCloskey (2014) encodes the core properties of existentials in his analysis of existential sentences in Irish. I then propose an adaptation of McCloskey's analysis for *there* BE sentences in English. This adaptation forms the basis for my analysis of existential unaccusative sentences, which is the focus of the rest of the paper.

Section 3 presents my analysis of the existential unaccusative structure; this section shows how the building blocks of existential sentences are put together in existential unaccusatives. This section discusses the semantic building blocks in McCloskey's analysis of Irish existentials and how the current analysis adapts them for English existential and existential unaccusatives. This section also discusses the syntactic fact that the same verbal root in English may occur in an unergative VP structure or an existential unaccusative VP structure, reminiscent of the observations made about Dutch by Hoekstra & Mulder (1990). In English, some sentences are structurally ambiguous between an unergative and an existential unaccusative structure.

Section 4 focuses on the structure and semantic composition in the PATH part of the existential unaccusative structure. This section explicates the formal details of the semantic composition of Path and Place in the specifier of the existential small clause, $\text{Pred}_{exist}\text{P}$. Section 4.3 presents arguments that the silent, contextually-determined LOC in existential unaccusatives can be informally paraphrased as "here". This section draws on observations about *there*-insertion with manner of motion verbs that go back to Kimball (1973) and Stowell (1981), which I dub the *Stowell-Guéron Generalization*.

Section 5 brings together lines of research that have not been previously connected to discuss the intuition that the verb in existential and presentational sentences makes less of a semantic contribution than it does in other types of sentences; this is the observation that the verb in existential sentences is semantically "bleached" (Borschev & Partee, 1998: 90). This section shows that these same observations about verb meaning have been made about the verbs in sentences discussed by Guéron (1980). I also discuss how the analysis and the neo-Davidsonian framework in which it is couched might begin to provide insight into what gives rise to these observations: although the subject of an existential unaccusative sentence like *A lady waltzed in* is interpreted as the agent of the (waltzing) event, the agentivity of the subject is not part of the assertion of an existential unaccusative sentence on my analysis—the subject does not receive the AGENT theta role. Section 6 concludes.

2 Existential sentences

2.1 Core properties of existential sentences

Most contemporary proposals on the structure and meaning of existential sentences implement a common set of insights about the properties of these sentences. Example (15) introduces the standard terminology for talking about parts of existential sentences: the post-copular DP[12] in an existential sentence is referred to as the PIVOT (or "associate"), and the prepositional phrase following the pivot is called the CODA.

(15)   There was [a lady]$_{\text{PIVOT}}$ [at the door]$_{\text{CODA}}$

The first insight that nearly all analyses of existentials implements involves the role of location and, by extension, context. In some earlier work on existentials, this locational element was assumed to be identical to the coda; this idea was implemented in

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[12] Following Partee & Borschev (2004) and other work that the current analysis builds on, I will use "DP" as a cover term to include DP, NP, and QP.

its most straightforward form in Freeze (1992), which analyzed existential sentences as a predication between the pivot and the coda. But work after Freeze (1992) argued that the coda was not a required part of an existential proposition (McNally, 1992).[13] But few analyses of existentials have eliminated the notion of location, broadly construed. In an influential series of papers, P&B put an expanded notion of location at the center of their analysis: "existence is always relative to a 'LOCation', which may be implicit" (Partee & Borschev, 2004: 214). Location, for P&B, may be a physical location, a metaphorical spatio-temporal location, a location in a "perceiver's perceptual field," or "the virtual location of 'in x's possession'" (Partee et al., 2011: 142). Further work by P&B discuss the role of "perspective structure" with respect to LOC (Borschev & Partee 2002; Partee & Borschev 2004), as I note further along. Francez (2007) builds on these lines of research and proposes that the LOCation that plays a role in existential propositions is always contextually-determined and is always implicit—though it may be further specified by means of a coda. My analysis follows McNally (1992; 1997) and Francez (2007) in analyzing the main predication of an existential sentence to exclude the coda. In other words, the coda is syntactically an adjunct and semantically a modifier. This is the type of analysis that McCloskey (2014) implements and which I adopt here.

The second core property of existential predications involves the establishment of a discourse referent from the pivot. Much of the research on existential sentences in English has focused on the nature of the pivot (notably Milsark 1974) and in particular the definiteness effects associated with pivots. In the philosophical literature, the discourse referent-introducing properties of existential sentences have a long history (see Szekely 2015 for an overview). In contemporary linguistic research, McNally (1992; 1997) was perhaps the first to give special attention to this property of existential sentences. In order to capture the discourse referent-introducing property of existential sentences, McNally proposes that their meaning involves a special predicate, INSTANTIATE, which—informally paraphrased—asserts the existence of an entity that is described by the property that is the pivot.

McNally observed that as long as an existential sentence is not modal and not negated, the sentence can establish a "persistent" discourse referent (McNally, 1997: 4)—a referent that can be subsequently referred to with an anaphor or definite description:

(16)   *Existential assertions and discourse referents* (McNally, 1997: 6)
        "The assertion of an existential sentence has the effect of introducing an additional discourse referent instantiating the argument of the existential predicate."

McNally proposes that the meaning of an existential sentence involves the predicate INSTANTIATE, which has the effect of establishing a persistent discourse referent.[14] Many recent semantic analyses either build on McNally's insights (e.g., Francez 2007; McCloskey 2014) or implement her core observations in a different framework.[15,16]

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[13] See Myler (2014; 2016) for a summary of the syntactic problems with analyses like that of Freeze (1992) that are built on a predication relationship between pivot and coda.

[14] This type of discourse referent is very closely related to the notion of topic, as a reviewer points out. Space prevents exploration of that relationship here.

[15] See, for example, Szekely (2015) for a recent implementation that builds on Strawson's (1959) theory of feature-placing.

[16] Note that semantically, the analysis of Francez (2007) is closer to that of Keenan (1987); Francez (2007) departs significantly from McNally in analyzing pivots as quantifiers rather than as of property type.

McCloskey's (2014) analysis of Irish existentials can be seen as the culmination of several converging lines of research on existentials, and it for this reason that I extend his analysis to English. We now turn to an adaptation of McCloskey's analysis, focusing first on how he implements the two core properties of existential propositions discussed above: location/context-dependence and the establishment of discourse referents.

2.2 Building existential BE sentences

Since my analysis of existential unaccusative sentences is based on an analysis of existential *there* BE sentences, we must begin with an analysis of *there* BE sentences in English. The analysis proposed here builds on McCloskey (2014), and I will continue to use the terminology from P&B to explicate the analysis.

P&B propose that the core meaning of an existential proposition is the placement (to use a term from Szekely 2015) of a THING (an individual) at a LOC (location), where this "location" may be physical or metaphorical, and it may be implicit. On P&B's analysis, the meaning of (5a) can be broken down as shown in (17):

(17)   There was a lady   at the door.
              V$_{BE}$ **THING LOC**

An important aspect of my analysis is the idea that the locational element in an existential sentence is contextually determined (Francez, 2007; 2010). On this new approach to LOC, the locational element in an existential sentence is never equivalent to the coda. The coda of the existential sentence simply serves to provide further contextual information (often in the form of a locative PP). LOC is independent of the coda and may be thought of as an implicit pronoun (see Francez 2007; 2010 for discussion and an explicit semantic analysis).[17] The schematic in (18) shows this type of analysis, which I adopt, and re-using P&B's terms:

(18)   There was a lady   [*e*]   at the door.
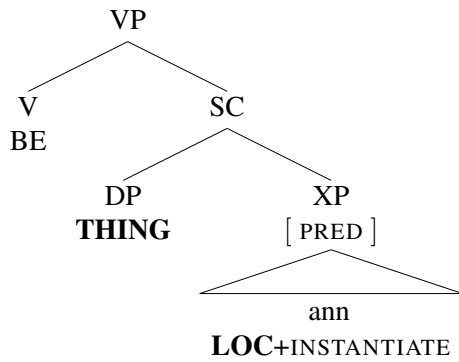   V   **THING LOC** (modifier)

McCloskey's analysis of Irish existential sentences builds on these insights from P&B, McNally (1992; 1997), and Francez (2007). On McCloskey's analysis, BE takes a small clause complement, and this existential small clause consists simply of a DP (the pivot) and the word *ann*, glossed as 'in it'. The word *ann* functions as a non-verbal predicate. A typical existential sentence in Irish with *ann* 'in it' is shown in (19):

(19)   *Irish* (McCloskey, 2014: 374)
          Tá fion   ann
          Is   wine in-it
          'There's wine'

The tree in (20) shows McCloskey's analysis, with annotations to show how his analysis incorporates the core ideas of P&B and McNally (1992; 1997):

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[17] Francez's implicit pronoun is related to Erteschik-Shir's (2007) notion of a "stage topic" (Francez, 2007: 71). This idea draws on insights from Gundel (1974) on the nature of the "topic" of existential sentences—the intuition is that to the extent that an existential sentence is "about" anything, it is about the current (discourse) context, not about any particular entity. See Gundel (1974) and Erteschik-Shir (2007) for discussion.

(20)   Irish existentials: Tree based on McCloskey (2014: 349)

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              VP
            /    \
          V        SC
          BE      /   \
              DP        XP
            THING    [ PRED ]
                      /    \
                       ann
                   LOC+INSTANTIATE
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One difference between the tree in (20) and the one that in my analysis is in the structure of the small clause. As I discuss in the next section, my analysis adopts a headed small clause structure, following familiar analyses of English existentials from Williams (1994; 2006) and Hazout (2004; 2008) up through Myler (2016).
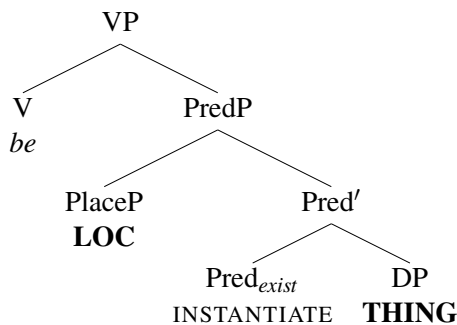
2.3 Adaptation of McCloskey (2014) to English existential BE sentences

McCloskey's analysis incorporates P&B's insight that the core meaning of an existential proposition is a relation between a THING and a LOCation. As noted above, however, for McCloskey (and for my analysis), this "location" is always contextually-determined and is not equated with the coda. McCloskey builds on McNally's (1992; 1997) proposal that part of the meaning of an existential proposition is a predicate that "instantiates" an individual based on a DP of property type (THING), which triggers the establishment of a new discourse referent—a new filecard, to use the metaphor from Heim (1983).

   My analysis makes use of McCloskey's syntactic and semantic building blocks, but with the elements put together somewhat differently. Syntactically, both my analysis and McCloskey's involve a small clause structure, headed in my analysis, not headed in McCloskey's. Semantically, both analyses incorporate McNally's (1992; 1997) existential predicate INSTANTIATE and Francez's (2007) contextually-determined element, which I will refer to as LOC. The following paragraphs introduce the syntax of the SC structure that I assume; the semantic composition of this structure is explicated further along in §3 when we turn to existential unaccusatives specifically.
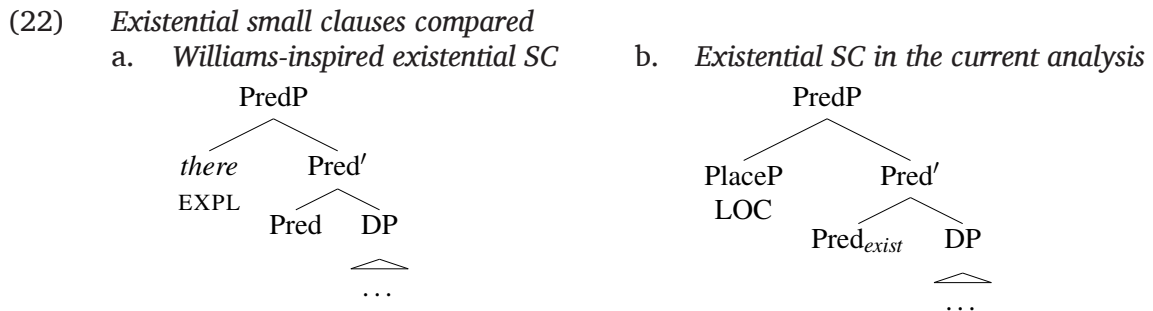
   Both my and McCloskey's analyses build on the notion that existential propositions involve a small clause structure. On my analysis, the BE in an English *there* BE sentence takes as its complement a headed small clause (Stowell 1981; Bowers 1993), labeled Pred$_{exist}$. My proposal for English *there* BE existentials is shown in (21), where P&B's THING and LOC are indicated, as is the special predicate INSTANTIATE.

(21)   *Proposal: English Existential PredP* (adaptation of McCloskey 2014)

```
              VP
            /    \
          V        PredP
          be      /     \
            PlaceP        Pred′
             LOC         /    \
                  Pred_exist    DP
                 INSTANTIATE   THING
```

The syntactic structure for *there* BE existentials in (21) assimilates McCloskey's insights into the more standard SC structure that has been motivated for English (Williams 1994; 2006; Hazout 2004; 2008; Myler 2016). On these analyses, English existential BE sentences consist of a headed small clause—labeled PredP on my analysis, PrP on that of Hazout (2004; 2008)—which is the complement of BE.[18]

The trees in (22) show the small clause portions of the structures side-by-side, for comparison, where structure in (22)a is based on the summary in Myler (2016: 30),[19] and (22)b is the current analysis:

(22)   *Existential small clauses compared*
   a.   *Williams-inspired existential SC*   b.   *Existential SC in the current analysis*

                PredP   PredP
               /   \   /   \
          there   Pred′   PlaceP   Pred′
          EXPL   /   \   LOC   /   \
                 Pred   DP   Pred_{exist}   DP
                         /\   /\
                        ...   ...

In terms of structure, the small clauses in the Williams-style analysis (22)a and the current analysis (22)b are identical. One difference, however, is the content of the specifier of the SC: on the Williams-style analysis, the specifier hosts the expletive *there*; on the current analysis, the specifier hosts the context-dependent LOC, analyzed syntactically as a PlaceP. It is tempting to assimilate the analyses in (22)a and (22)b such that the *there* sentence in an English existential originates as part of the PlaceP constituent, but space considerations prevent me from pursuing that idea here.[20]

It may be helpful to recall that on McCloskey's analysis, *ann* 'in it' has the LOC element built into its denotation; on my analysis, the LOC component is separated off in specifier of the SC. I implement LOC as PlaceP and discuss the details of LOC/PlaceP in Section 3.2.1. For now, I would like to emphasize that LOC is, on the current analysis, silent, contextually-determined, and not equivalent to the coda.

The tree in (21) has the pivot DP (THING) merged to the complement position of the SC, following Williams (1994); Hazout (2004). Analyzing the pivot in a complement position allows us to retain the insight that the pivot of an existential sentence has the syntactic properties of a predicate nominal and is semantically of property type (or a higher type, on some analyses). Syntactic evidence for this part of the analysis will be shown further along in a discussion of a seemingly separate phenomenon, PP extraposition. Finally, as noted above, the question of the position of the "expletive" *there* is not shown (21) since it does not play an important role in the analysis, but I will briefly return to the issue of *there* in the semantic composition of the PlaceP in §3.2.

3 The existential unaccusative structure

We now turn to the existential unaccusative structure and my proposal that sentences like those in (4) have some of the same building blocks as existential *there* BE sentences. The first subsection discusses the existential unaccusative structure, and the second subsection

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[18] See Myler (2014; 2016) for details on how *be* might emerge configurationally.
[19] See also Hazout (2004: 404).
[20] Such an analysis would be in the spirit of Moro (1997) and Tortora (2014); see Deal (2009) and Tortora (2014) for more on *there*.

explicates the semantic composition in existential unaccusative sentences. I then discuss the semantic contributions of Pred$_{exist}$, THING, and LOC to the meaning of the existential PredP.

3.1 The structure of existential unaccusative VPs

The existential unaccusative structure that I propose is shown in (23). The primary difference between this structure and the structure for English *there* BE sentences in (21) is that this structure has an explicit PATH that leads to LOC (PlaceP):

(23)   *Existential unaccusative structure:* A lady waltzed in.
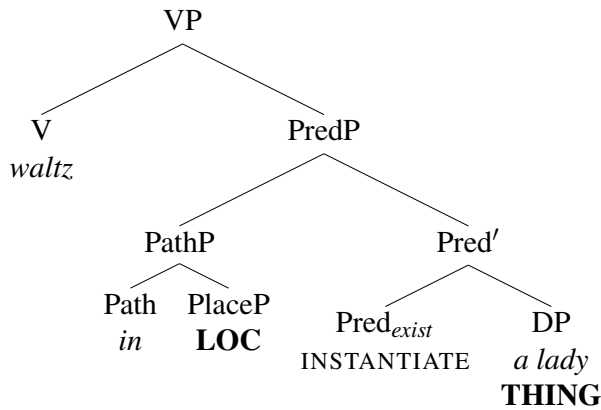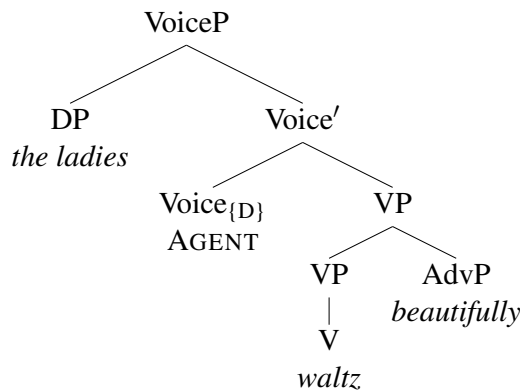

In (23), the eventive verb *waltz* selects for a small clause headed by Pred$_{exist}$. This head has the same denotation here as it does in the existential BE structure. Note that the tree in (23) does not show the movement to Spec,TP that I assume the DP *a lady* undergoes in existential unaccusatives. Other than movement of this DP to a subject position, the primary difference between the BE structure and the existential unaccusative structure concerns the interpretation of the PathP, the constituent that contains LOC.[21] In the existential unaccusative structure, the eventive V in (23) requires the SC subject to be interpreted as a PATH (which leads to LOC). Although LOC is contextually-determined and implicit, the Path element must be overt; it often takes the form of a preposition-like element such as *in, up, over* or *out,* as we saw in the examples in (4).

   This analysis of existential unaccusatives is very much in the spirit of Hoekstra & Mulder (1990) and Moro (1997), though the structures I propose are somewhat different.[22] The semantic class of verbs that is most amenable to the existential unaccusative structure includes those of directed motion (e.g., *come*) and manner of motion (e.g., *waltz*). These verbs also occur in unergative (and sometimes transitive) structures—structures in which the subject is merged outside the VP and is assigned the thematic role of agent. For comparison, the tree in (24) shows an analysis of the relevant structure for an unergative sentence with *waltz*.

---

[21] Thank you to Julie Legate for helpful discussion of Path in this analysis.

[22] This analysis of *waltz in* is essentially what Moro (1997: 232) proposes for *arrivare* 'arrive' in Italian, but without incorporation of the particle. The small set of verbs from Romance like *arrive, appear, emerge* in English may be analyzed along the lines proposed by Moro. For discussion of verbs like *enter* (a slightly different beast), see Moro (1997: 289, fn.12), who cites Hoekstra & Mulder (1990: 28ff).

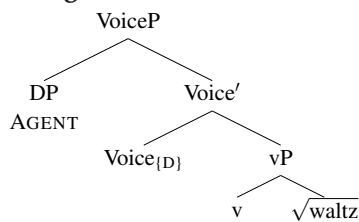(24)   *Unergative structure:* The ladies waltzed beautifully.

```
                        VoiceP
                      /        \
                   DP           Voice′
                the ladies     /      \
                         Voice_{D}      VP
                         AGENT        /    \
                                    VP      AdvP
                                    |      beautifully
                                    V
                                  waltz
```

Although there is still no consensus about the VP-internal structure of unergatives (e.g., whether they are underlyingly transitive, as discussed in Hale & Keyser 1993), it is not disputed that the subject of an unergative sentence is merged to the specifier of an agentive, argument-introducing head, such as *v** or Voice as in (24)—and this point is what is relevant for our purposes here.

In contrast to an unergative structure, the existential unaccusative structure has a Voice head that does not assign the AGENT thematic role. The question of how the subject of an existential unaccusative sentence like (23) is interpreted as being the "waltzer" in the waltzing event is therefore an important one. This question is related to the observation that the verb in existential and presentational sentences is often described as contributing less meaning or is semantically "bleached"; these issues will be addressed in §5.
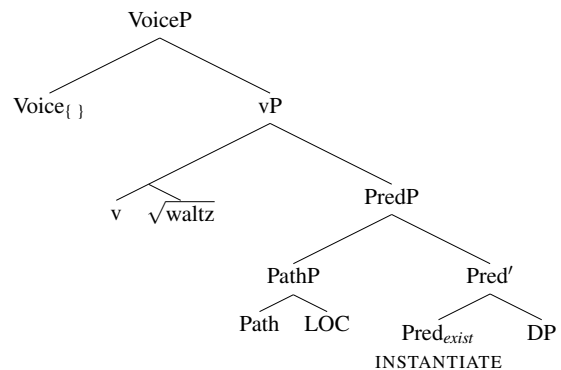
The trees in (25) compare the existential unaccusative structure with an unergative structure on the root-based syntax that I assume; these structures include a Voice head, which I assume most main clauses to have. Note that the existential unaccusative structure does not have a thematic Voice specifier; this is indicated by subscripting the Voice head as shown in (25)b.

(25)   *Unergative and existential unaccusative structures*
        a.   *Unergative structure*   b.   *Existential unaccusative structure*

```
          VoiceP                                      VoiceP
        /        \                                  /        \
     DP           Voice′                      Voice_{ }       vP
   AGENT         /      \                               /          \
           Voice_{D}      vP                          v   √waltz      PredP
                        /    \                                      /       \
                       v     √waltz                            PathP         Pred′
                                                              /    \        /      \
                                                          Path    LOC   Pred_{exist}   DP
                                                                        INSTANTIATE
```

A consequence of this analysis is that some sentences with VP-internal PPs are structurally ambiguous between an unergative structure and the existential unaccusative structure, particularly since English no longer has auxiliary selection alternations like other Germanic languages do. In a sentence that does not further specify the endpoint of Path, however, that endpoint must be the contextually-determined LOC is glossed as 'here' (where 'here' can mean "in the current discourse," as P&B point out). In other

words, a sentence like (26) is not structurally ambiguous; it can only have the existential unaccusative structure.

(26)   A fancy lady waltzed in.

However, when the endpoint of the Path is made explicit, as in (27), the sentence—outside of context—is structurally ambiguous:

(27)   A fancy lady waltzed into the room.

The existential unaccusative and the unergative analyses of (27) are sketched in (28) and (29):

(28)   A fancy lady [$_{VP}$ waltzed [$_{PredP}$ in to HERE the room < a fancy lady >]]

(29)   A fancy lady [$_{VP}$ waltzed [$_{pP}$ [HERSELF] into the room]]

The reflexive in square brackets in (29) leaves open the possibility that the right analysis of the unergative sentence may in this case include a silent (in English) reflexive element that is interpreted as the Figure in a Figure-Ground relationship (Talmy, 1978; 1985), as discussed in Wood (2012; 2015). In either type of unergative analysis, however, the DP *a fancy lady* is merged VP-externally.

  My analysis predicts that unergative sentences with indefinite subjects do not establish new discourse referents for their subject DPs in the same way that existential *there* BE and existential unaccusatives do. It should be emphasized, though, that an indefinite external argument in English can always establish a discourse referent (modulo Karttunen's considerations)—it is just that external argument indefinites establish their discourse referents by means other than INSTANTIATE. I speculate that transitive and unergative sentences with indefinite subjects function as what might be called "scene-setting" sentences, the main function of which is to add to the discourse a referent to an event—e.g., an image, or a sound—though this speculation needs empirical confirmation. In other words, the most salient discourse referent that these sentences establish is for an event.[23] This kind of sentence often occurs in literary contexts (30):

(30)   *Scene-setting unergatives from McCarthy (1992)*, All the Pretty Horses[24]
         a.   In the distance they heard a door slam. A voice called. (p. 26)
         b.   A horse whinnied in the dark. (p. 82)
         c.   Outside somewhere in the streets beyond the prison walls a dog barked.
              (p. 199)

Sentences like (30) can be paraphrased as nominalizations—e.g., *some dog-barking occurred*—or as event-introducing existential sentences, such as *there was some whinnying of horses*. Sentences like these can be continued with anaphoric elements, though to my ears the discourse sounds most natural when the anaphor refers to an event, as discussed above with respect to the Karttunen-inspired sentences in (11) and (12). The same phenomenon is illustrated in (31) for (30b):

---

[23] To the extent that such sentences occur—see Irwin (2012; 2016a) for corpus results showing that when English speakers establish discourse referents for indefinite subjects, they do so by means of an existential unaccusative sentence.

[24] These examples were brought to my attention in a blog post by Michael Wagner "not even a dog barked," http://prosodylab.org/2010/not-even-a-dog-barked/.

(31)   [A horse]$_i$ whinnied in the dark.
      a.   … It$_i$ was an eerie sound.
      b.   … #It$_i$ was probably Misty.

As I have emphasized, nothing syntactic or semantic prevents the continuation in (31b), since English allows indefinite subjects, and the initial sentence in (31) does not have properties like negation or modality that would prevent the establishment or limit the lifespan of a discourse referent. But on my analysis, the referent that is picked up in (31b) would have to have been established by some means other than an existential structure and Pred$_{exist}$.

3.2 Semantic composition in existential and existential unaccusatives

We turn now from structure to meaning. In this section, I discuss the semantic composition inside the existential PredP. This section begins by explicating the way semantic composition works in McCloskey's (2014) analysis of Irish existentials; we will then see how the elements of this analysis are implemented in my analysis of *there* BE and existential unaccusative sentences.

In McCloskey's analysis of existentials in Irish, all of the semantic work of the existential proposition—instantiation and context-dependence—falls on *ann* 'in it', paraphrased informally in (32a), and formally in (32b).

(32)   McCloskey (2014: 36)
      a.   *ann* is "the property that a property has when it is instantiated by some individual x located at a contextually defined spatio-temporal location"
      b. $[\![ann]\!] = \lambda P\ [\text{INSTANTIATE}\ (^{\cap}\lambda x\ (P(x)\ \&\ R(x, a)))]$

On this analysis, an existential proposition says that an instance of some set or property (THING) exists at a given spatio-temporal "location" (LOC). The existential predication's statement of existence is executed by the function INSTANTIATE (McNally, 1992; 1997). The denotation in (32b) thus implements the two core properties of existential propositions that I have discussed: It establishes a discourse referent (though INSTANTIATE), and it implements context-dependence through the predication $R(x, a)$, where R is a contextually-determined relation, and a is a contextually-determined location. We might informally think of R as the "located-at" relation, as McCloskey suggests—keeping in mind observations from P&B that this relation includes temporal and metaphorical "locations".[25] More specifically, we might think of $R(x, a)$ is as the "at-*here*" property, where "here" is shorthand for a and refers to a physical space or a "location" in the discourse.

One of the arguments to the function R is the individual x, which is what instantiates the property denoted by the DP pivot; the other argument is a, the pronoun-like element that is contextually-determined and akin to a pronominal or deictic element.[26] These aspects of McCloskey's analysis incorporate insights from Francez (2007) on the contextual nature of existential sentences. It is tempting to equate the coda of an English existential with McCloskey's $R(x, a)$ in (32b), but as I have noted, analyses of existentials since McNally (1992) have converged on the idea that the coda is not a core part of the predication in an existential sentence. Semantically, the coda is typically analyzed as a modifier of the existential proposition, and syntactically it is an adjunct.[27]

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[25] McCloskey (2014: 358) suggests that "a plausible candidate for the relation R is the location relation."
[26] Suggestively, McCloskey notes that Irish *ann* 'in it' has locative deictic usages (McCloskey, 2014: 347, 354).
[27] See Francez (2007) and McNally (1992; 1997) for two different analyses of the coda as a modifier.

In addition to implementing context-dependence, the denotation of *ann* in McCloskey's analysis includes the discourse referent-establishing function INSTANTIATE. This function is what executes the existential predication's statement of existence. In (32b), the operator ∩ has the effect of requiring that INSTANTIATE take an argument that is of property type, which is then type-shifted down to entity type. This is how the function yields an individual instance from the set (or set of sets) denoted by the pivot (Chierchia 1984; Partee 1987; McNally 1992).[28]

In my implementation of McCloskey's analysis for English, the semantic work of the existential predicate *ann* is decomposed such that LOC and INSTANTIATE no longer form a single predicate. The head of the existential small clause, $Pred_{exist}$, has the denotation in (33). For readability, I use *LOC* as the name of the variable for the locational argument in the denotation of $Pred_{exist}$. Recall that the LOC part of this equation does the same work as McCloskey's function *R*.

(33)   *Denotation of the English existential predicate head*
         $[\![Pred_{exist}]\!] = \lambda P\, \lambda LOC\, \lambda e\, [\text{INSTANTIATE}\,(^{\cap}\lambda x\,[\,P(x)\ \&\ LOC\,(x, e)\,])\,]$

(34)   *Denotation of Irish* ann *'in it'* (McCloskey, 2014: 36)
         $[\![ann]\!] = \lambda P\, [\text{INSTANTIATE}\,(^{\cap}\lambda x\,(P(x)\ \&\ R(x, a)))]$

The denotation of $Pred_{exist}$ in (33) is at its core the same as the denotation that McCloskey proposes for the Irish existential predicate—shown in (34) for comparison—but with two differences. One difference, as noted above, is that $Pred_{exist}$ requires LOC as one of its arguments. Another difference is the addition of an event variable, the variable *e* in (33). This variable has the effect that the individual being instantiated is in the state of being at the location denoted by the contextually-determined location, LOC. In the following section I discuss the contribution of this LOC element of the existential PredP.

3.2.1 LOC: Semantic composition and contextually-determined location

Recall that the contextually-determined parts in McCloskey's denotation of *ann* 'in it' are in the function $R(x, a)$. Because the '*a*' or "anchor" in this function can refer to the current discourse context, we can think of $R(x, a)$ as the "at-here" function. In my adaptation of McCloskey, LOC or $R(x, a)$ is implemented as a PlaceP, where the Place head takes the contextually-determined locative as its complement. For simplicity, I will refer to it as *"here"*. Following work inspired by Jackendoff (1983) such as Koopman (1997, 2000), den Dikken (2010), Svenonius (2010), and others, Place is analyzed as its own projection.[29] In existential *there* BE and existential unaccusatives, the head $Place^0$ is analyzed as silent *at*.

(35)   PlaceP (LOC)

         PlaceP (=LOC)
          ⁀
        Place   HERE
          AT

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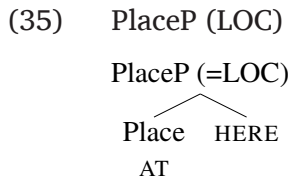
[28] It should be noted that instantiation-based analyses are not without their shortcomings, which the current analysis inherits. As a reviewer points out, one problem is that some existentials do not introduce a discourse referent. This is the case with inalienably possessed DPs, as in *There was space in the manger, #but now it's in the kitchen* (Kimball, 1973: 263). Analyses based on INSTANTIATE also run into problems when the pivot is headed by *no*, as in *no princesses*. I acknowledge these problems and refer the reader to the critiques in Francez (2007: 107ff) and Francez (2009). For ways around some (but not all) of them, see McNally (1998), and more recently, the discussion in McCloskey (2014: 373ff).

[29] See Gehrke (2008) for discussion.

(36)   *Denotation of* LOC *as* PlaceP
       $[\![\text{PlaceP}]\!] = \lambda y_e \lambda s_s [\text{ AT}(s, \text{HERE}, y)]$

The composition between Place^0 and the contextual locative HERE is as follows: Place^0 takes a silent locative, an individual, and an event, and it returns a function that needs a (stative) event to say that the individual is in the state of being at that location. In the denotation of Place^0 (37), the name of the variable that will be saturated by the silent locative is *a*, in honor of McCloskey's contextually-determined variable. As noted above, we can informally think of *a* as silent HERE:

(37) $[\![\text{Place}]\!] = \lambda a_e \lambda y_e \lambda s_s [\text{ AT}(s, a, y)]$

In this way, Place is, as noted above, the "at-here" function, just like *R(x, a)* is. The meaning of PlaceP with a silent location can be paraphrased as *'the state of being HERE'*, where *here* is a contextually-determined location. For simplicity, the formalisms here implement this variable as being of individual type. Formally, this yields the denotation in (38) for the LOC argument of the existential predication:

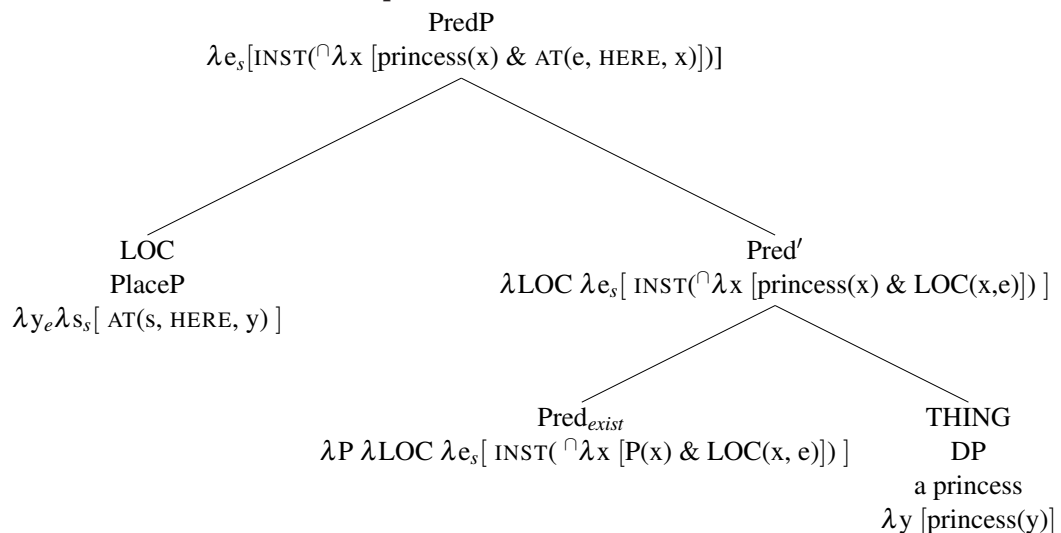(38) $[\![\text{PlaceP}]\!] = \lambda y_e \lambda s_s [\text{ AT}(s, \text{HERE}, y)]$

The tree in (39) shows the syntactic and semantic composition in PlaceP:

(39)   *Syntactic and semantic composition in PlaceP*

$$\text{PlaceP}$$
$$\lambda y_e \lambda s_s [\text{ AT}(s, \text{HERE}, y)]$$

Place — $\lambda a_e \lambda y_e \lambda s_s [\text{ AT}(s, a, y)]$

HERE$_e$
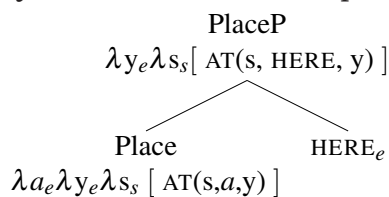
The tree in (40) shows the full PredP for the sentence *there's a princess* on my adaptation of McCloskey (2014). Here, the small clause head (Pred$_{exist}$) takes two arguments in order to execute INSTANTIATE: a DP (THING), which is a property, and PlaceP (LOC), a function from individuals to events.

(40)   *Existential PredP in* There's a princess.

$$\text{PredP}$$
$$\lambda e_s [\text{INST}(^\cap \lambda x [\text{princess}(x) \,\&\, \text{AT}(e, \text{HERE}, x)])]$$

LOC
PlaceP
$\lambda y_e \lambda s_s [\text{ AT}(s, \text{HERE}, y)]$

Pred$'$
$\lambda \text{LOC} \, \lambda e_s [\text{ INST}(^\cap \lambda x [\text{princess}(x) \,\&\, \text{LOC}(x,e)])]$

Pred$_{exist}$
$\lambda P \, \lambda \text{LOC} \, \lambda e_s [\text{ INST}(^\cap \lambda x [P(x) \,\&\, \text{LOC}(x, e)])]$

THING
DP
a princess
$\lambda y [\text{princess}(y)]$

In an existential *there* BE sentence like *there's a princess*, the existential PredP is the complement of the verb BE.

　We now have the structure and meaning for the LOC contribution in *there* BE sentences, building on McCloskey (2014). But there is one piece of English existentials that I have set aside—and which I will continue to set aside: the merge position of the "expletive" *there*.[30] For the current analysis, I will assume that the structure in (40) licenses the merger of *there*, though the precise position of *there* is not relevant to the analysis. My analysis is compatible with Deal (2009) (and references therein), in which *there* is merged to a low position in the (extended) VP. Kayne (2016; 2008) proposes that *there* is merged as part of the post-verbal "associate" (pivot)—in (40), this would be in the constituent with the DP *a princess*. However, if *there* modifies PLACE, as it does on Kayne's analysis, and if PLACE is part of my LOC constituent, then this points to an analysis in which *there* originates as part of Spec,PredP rather than as part of the DP pivot/associate. I leave it open as to whether *there* is merged and pronounced only when the pivot does not move to spec, TP, or whether *there* is always part of the existential PredP structure in English but only pronounced in certain syntactic configurations (e.g., when the pivot does not move to Spec,TP).

3.2.2 Definiteness in existential unaccusatives

One question that arises for any analysis of English existentials involves definiteness effects with the pivot, as illustrated in (41):

(41)　　*The definiteness restriction* (examples from Milsark 1974: 18)
　　　　a.　*There's the duck on my desk.
　　　　b.　*There's John's duck on my desk.

Much work has focused on the nature of the pivot in explaining judgments like those in (41), and so the question arises as to whether existential unaccusative sentences give rise to the kinds of definiteness effects as existential *there* BE sentences. It appears on the face of it that they do not; sentences like (42) would probably not be judged as ill-formed in the way that (without additional context) their *there* BE counterparts would be.

(42)　　*DP types in existential unaccusatives*
　　　　a.　A lady waltzed in.
　　　　b.　The lady waltzed in.
　　　　c.　Every lady waltzed in.

But it has also been noted from at least Milsark (1974) that the definiteness restriction is not categorical (see Francez 2007 for references and discussion). Even a sentence like (41a) is acceptable, given the right context—in this case, for example, as a response to *I don't see anything weird in your office*. Abbott (1993) and Francez (2007) argue that some definiteness effects have to do with the pragmatic function of *there* BE sentences rather than syntactic/semantic phenomena, narrowly construed. On the pragmatic account as articulated by Abbott (1993), existential sentences are generally used to establish discourse referents, so if the pivot of an existential sentence is a familiar entity (or one whose existence in the discourse is presupposed), then some extra discourse context is needed for the sentence to sound acceptable.

　Somewhat less context may be needed to judge sentences like (42b)–(42c) as acceptable in comparison to their *there* BE counterparts, and this is likely because without further

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[30] See McCloskey (2014: 355–356) for a discussion of some hurdles faced by an analysis that equates English *there* with Irish *ann*.

context, (42a)–(42b) are ambiguous between unergative and (existential) unaccusative structures. I speculate that if a sentence like (42b) is pronounced with stress on *waltz* (or equal stress on DP and VP—see Irwin 2011), the structure is unergative; otherwise, it is an existential unaccusative—though also relevant is "center of discourse", as we will see in §4.3. It is surprisingly difficult to find a context in which sentence (42c) with *every lady* is acceptable when not contrastive; this may be because *every lady* is not immediately construable as a topic, as it would likely be if the sentence was unergative.[31]

3.3 Summary: Existential unaccusatives and existential BE

Let us take a step back and recall that on my proposal, sentences like (43b) share the core elements of structure and meaning with sentences like (43a).

(43) *Existential and existential unaccusative sentences*
    a.   There's a princess.
    b.   A princess waltzed in.

The structure of both sentences contains a small clause that is headed by $Pred_{exist}$, and the denotation of the SC head is the same in both sentences. The difference between the two lies in the specifier of the small clause: in the existential BE structure, the specifier of $Pred_{exist}$ is the contextually-determined LOC, implemented as a PlaceP; in the existential unaccusative structure, the specifier of $Pred_{exist}$ is interpreted as a Path that leads to the LOC. The structures are repeated in (44), with annotation added to facilitate comparison:

(44) *English existential* there BE *and existential unaccusative structures*
    a.   *Existential* there BE *structure*   b.   *Existential unaccusative structure*

a. Existential *there* BE structure:
```
            VP
          /    \
         V      PredP
        be     /    \
           [PlaceP]   Pred'
            LOC      /    \
              Pred_exist   DP
              INSTANTIATE  THING
                          a princess
```

b. Existential unaccusative structure:
```
            VP
          /    \
         V      PredP
       waltz   /    \
          [PathP]    Pred'
          Path PlaceP  /   \
           in   LOC  Pred_exist  DP
                     INSTANTIATE THING
                                a princess
```
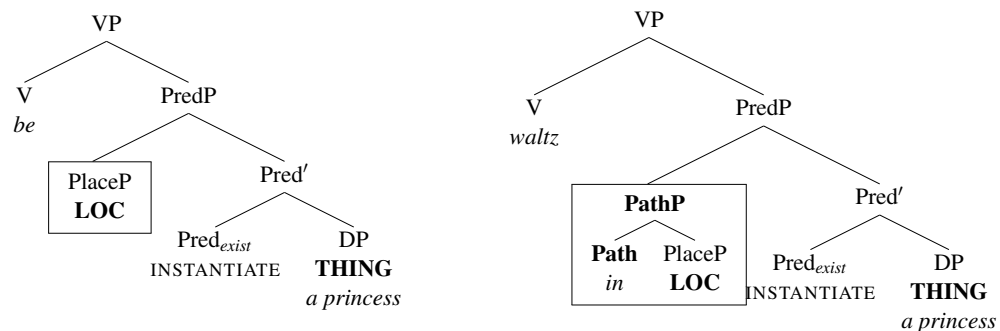
The V in each configuration selects for a PredP that contains a different subtype of event: in the *there* BE structure (44)a, the verb selects for a PredP that contains a stative event, the state of being in the contextually-determined spatio-temporal location. In the existential unaccusative structure (44)b, the V selects for a PredP that has a dynamic event: the individual that is instantiated is a participant in an event such that the participant ends up at the contextually-determined "location" in the current discourse. The event variable in both cases is introduced in PlaceP and is associated with the denotation of verb at the VP level. The head $Pred_{exist}$ is indifferent as to whether its specifier is a (stative) LOC or a (dynamic) Path to LOC; its denotation is the same regardless of its specifier.

---

[31] The details of my analysis of existentials ends up committing to the position that a sentence like (42c), with the universal quantifier *every*, is not a possible existential unaccusative sentence. This is because composing *every lady* with the INSTANTIATE part of $Pred_{exist}$ would result in a semantic type clash. McCloskey (2014) discusses this issue for his own instantiation-based analysis. McCloskey suggests that this issue might be resolved if a quantifier like *every lady* were analyzed (to put it informally) as something like *every kind of lady* (McCloskey, 2014: 375–376).

4 Structure and meaning in PATH and PLACE

This section fleshes out the composition of the existential unaccusative PathP in (44)b and then shows how the pieces of the structure fit together.
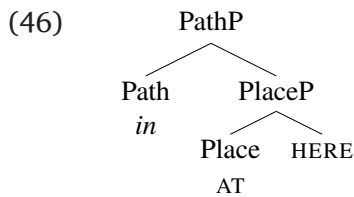
4.1 From PATH to PLACE

Although the Pred$_{exist}$ head is the same in both existential *there* BE and existential unaccusative structures, the details of the PredP specifier differ between the two. I have discussed the fact that in both structures, the LOC/PlaceP element is silent and contextually-determined. Existential unaccusative structures also have LOC/PlaceP, but they require something extra as well: a PATH to LOC. Although LOC/PlaceP is silent in both structures, the head of the PathP in my analysis must be overt. In English, the Path is a preposition-like element such as *up* or *in*.

   One argument that Path must be pronounced in the existential unaccusative structure comes from the comparison shown in (45). These two sentences cannot have the same interpretation; sentence (45a) cannot be interpreted as motion along a path to a contextually-determined location.

(45)   a.   A princess waltzed.   *(unergative)*
        b.   A princess waltzed in.   *(existential unaccusative)*

Following the work discussed above with respect to PlaceP (and discussed in detail in Gehrke 2008), it is standardly assumed that a Path projection contains at least Place, and possibly other functional projections (Jackendoff 1973; 1983; Koopman 2000; 2010; Svenonius 2010) The PathP in (44)b therefore has the minimal structure given in (46).

(46)   PathP
                      ╱   ╲
                  Path   PlaceP
                   in   ╱   ╲
                          Place   HERE
                           AT

Path selects for PlaceP, and the denotation of PlaceP that combines with Path in the existential unaccusative structure is the same denotation as the PlaceP in existential BE sentences, as shown in (38), repeated below as (47):

(47)   ⟦PlaceP⟧ = $\lambda y_e \lambda s_s$ [AT(s, HERE, y)]

The Path head in the existential unaccusative structure can be *in* as in *a lady waltzed in,* or it can be any number of preposition-like heads such as *up, over,* etc. What is important is that this head must be overtly realized (pronounced) in the existential unaccusative structure.
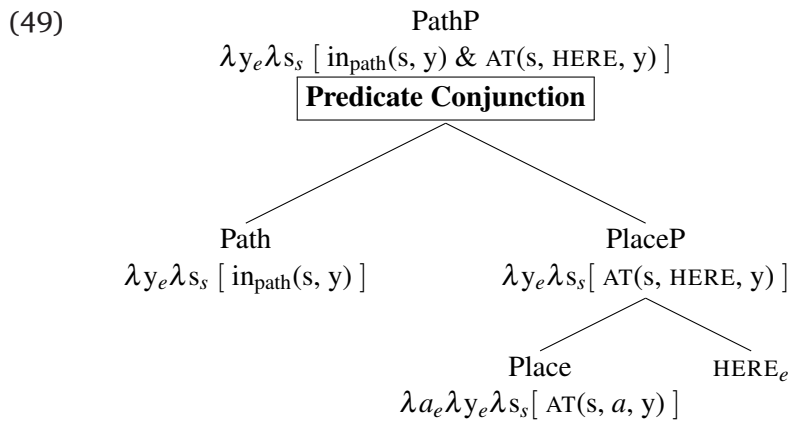
   Semantically, the Path head takes the same inputs as PlaceP, and so when Path merges with PlaceP, they combine through predicate conjunction rather than function application.[32] In (48) below, the content of Path is subscripted with *in* to indicate that it is the lexical item which in this case brings about the path interpretation.

(48)   ⟦Path⟧ = $\lambda y_e \lambda s_s$ [in$_{path}$(s, y)]

---

[32] See Heim & Kratzer (1998) for formal definitions; see also the helpful discussion in Wood (2012; 2015) in the framework adopted here.

A short aside is in order here on the prepositions that can serve as the head of PathP in the existential unaccusative structure. The types of prepositions that occur in existential unaccusative sentences include *in, up, over* and possibly others. An examination of which English prepositions can serve as Path is beyond the scope of this paper, but it should be noted that there appears to be a somewhat idiomatic nature to the composition of Path with silent Place.[33]

Predicate conjunction combines PlaceP (47) and Path (48), as shown in the tree in (49). The resulting PathP has the denotation shown in (49) and in (50).

(49)

$$\text{PathP}$$
$$\lambda y_e \lambda s_s \left[\text{in}_{\text{path}}(s, y) \,\&\, \text{AT}(s, \text{HERE}, y) \right]$$

Predicate Conjunction

Path
$$\lambda y_e \lambda s_s \left[\text{in}_{\text{path}}(s, y) \right]$$

PlaceP
$$\lambda y_e \lambda s_s \left[\text{AT}(s, \text{HERE}, y) \right]$$

Place
$$\lambda a_e \lambda y_e \lambda s_s \left[\text{AT}(s, a, y) \right]$$

HERE$_e$

(50) $\llbracket \text{PathP} \rrbracket = \lambda y_e \lambda s_s \left[\text{in}_{\text{path}}(s, y) \,\&\, \text{AT}(s, \text{HERE}, y) \right]$

PathP is a function that requires an individual (such as a princess) and a dynamic event (such as a waltzing event). This Path to Place then serves as the LOC element in the existential predication.

4.2 Putting together PATH, PLACE, and Pred

We are now in a position to see how the specifier of the PredP combines with Pred′, and how PredP combines with a verb like *waltz* in the existential unaccusative structure. Recall that Pred*exist* has the same denotation in existential *there* BE and in existential unaccusative sentences. The denotation of Pred*exist* is repeated in (51), this time with the semantic types of the arguments given explicitly. Recall that LOC in (51) is a variable name.

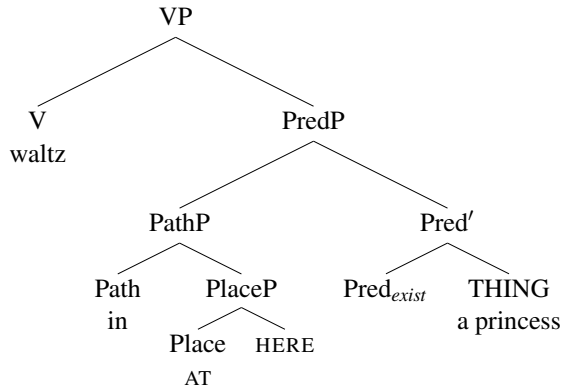(51) $\llbracket \text{Pred}_{exist} \rrbracket = \lambda P_{<e,t>}\, \lambda \text{LOC}_{<e<s,t>>}\, \lambda e_s \left[\text{INST}(\,^\cap\lambda x \, [P(x) \,\&\, \text{LOC}(x, e) \,] \,) \right]$

The tree in (52) serves as a reminder of the syntactic structure that the denotations discussed below are associated with.

---

[33] The denotation for Path given in (48) is inspired by Kratzer's (2003b) discussion of German prefix + verb constructions such as the verb for *build* in 'build a barn' in German and illustrated in (i) from Kratzer (2003b): "From a semantic point of view, German transitive prefix + verb compounds look more like largely non-compositional serial verb constructions. Two verbal meanings seem to be glued together, one of them already relational" (Kratzer, 2003b: 21).
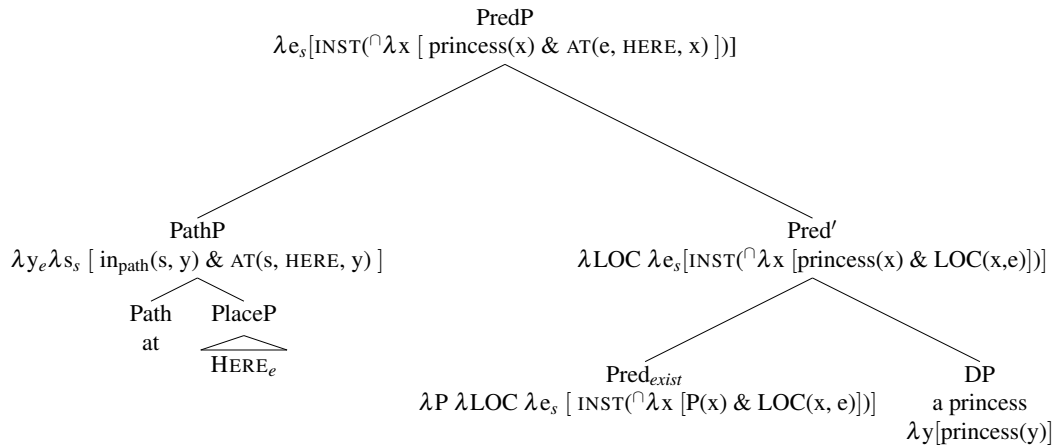
(i)   *German* (Kratzer, 2003b: 21)
      die Scheune an**bauen**
      the barn   an-build
      'add the barn by building'
      $\lambda x\, \lambda e \left[\text{build}(e) \,\&\, \text{add}(x)(e) \right]$

(52)   *Basic structure:* A princess waltzed in.

```
                        VP
                ┌───────┴───────┐
                V              PredP
              waltz        ┌────┴────┐
                        PathP       Pred′
                      ┌───┴───┐   ┌───┴───┐
                    Path   PlaceP Pred_exist  THING
                     in   ┌──┴──┐           a princess
                        Place  HERE
                         AT
```

We now turn to the combination of PathP with Pred′. Recall that when PathP merges to the specifier of Pred$_{exist}$, Pred$_{exist}$ is still not saturated: it still does not have its LOC argument. PathP provides this argument, and it also provides some additional information, a Path to LOC. The tree (53) shows the structure and meaning of the PredP after Path and Place have combined (by predicate conjunction) and when Path combines with Pred′ by function application.

(53)   *The existential PredP in* A princess waltzed in.

```
                              PredP
               $\lambda e_s[\text{INST}(^\cap\lambda x [ \text{princess}(x) \& \text{AT}(e, \text{HERE}, x) ])]$
          ┌───────────────────────┴───────────────────────┐
        PathP                                            Pred′
$\lambda y_e \lambda s_s [ \text{in}_{path}(s, y) \& \text{AT}(s, \text{HERE}, y) ]$   $\lambda \text{LOC} \lambda e_s[\text{INST}(^\cap\lambda x [\text{princess}(x) \& \text{LOC}(x,e)])]$
     ┌───┴───┐                                        ┌──────┴──────┐
   Path   PlaceP                                  Pred_exist        DP
    at   ┌──┴──┐                  $\lambda P \lambda \text{LOC} \lambda e_s [ \text{INST}(^\cap\lambda x [P(x) \& \text{LOC}(x, e)])]$   a princess
        HERE_e                                                            $\lambda y[\text{princess}(y)]$
```

The steps in (54) show the application of Pred′ to the PathP argument. These steps yield the denotation for PredP in (55). The PathP argument is given in boldface in (54) for clarity.

(54)   ⟦Pred′⟧ (⟦PathP⟧)
   a. $\lambda \text{LOC} \lambda e_s[\text{INST}(^\cap\lambda x [\text{princess}(x) \& \text{LOC}(x, e)])](\lambda \mathbf{y}_e \lambda \mathbf{s}_s [\mathbf{in_{path}(s, y)} \&$
         $\mathbf{AT(s, HERE, y)}])$
   b. $\lambda e_s[\text{INST}(^\cap\lambda x [\text{princess}(x) \& \lambda \mathbf{y}_e \lambda \mathbf{s}_s [\mathbf{in_{path}(s, y)} \& \mathbf{AT(s, HERE, y)}] (x, e)])]$
   c. $\lambda e_s[\text{INST}(^\cap\lambda x [\text{princess}(x) \& \lambda \mathbf{y}_e \lambda \mathbf{s}_s [\mathbf{in_{path}(s, y)} \& \mathbf{AT(s, HERE, y)}] (x, e)])]$
   d. $\lambda e_s[\text{INST}(^\cap\lambda x [\text{princess}(x) \& \lambda \mathbf{s}_s [\mathbf{in_{path}(s, x)} \& \mathbf{AT(s, HERE, y)}] (e)])]$
   e. $\lambda e_s[\text{INST}(^\cap\lambda x [\text{princess}(x) \& [\mathbf{in_{path}(e, x)} \& \mathbf{AT(e, HERE, y)}]])]$
   f. $\lambda e_s[\text{INST}(^\cap\lambda x [\text{princess}(x) \& \mathbf{in_{path}(e, x)} \& \mathbf{AT(e, HERE, y)}])]$

(55)   ⟦PredP⟧ = $\lambda e_s[\text{INST}(^\cap\lambda x [\text{princess}(x) \& \text{in}_{path}(e, x) \& \text{AT}(e, \text{HERE}, y)])]$

We can now continue on to see how the PredP serves as the complement to the verb, which in the example here is *waltz*. Let us assume the denotation of *waltz* in (56); the tree in (57) shows where we are at in the structure.

(56) $[\![\text{waltz}]\!] = \lambda e'_s [\text{ waltz}(e')]$

(57)   *Building the existential unaccusative VP:* A princess waltzed in.

$$
\begin{array}{c}
\text{VP} \\
\end{array}
$$

V	PredP
waltz	$\lambda e_s[\text{INST}(^{\cap}\lambda x[\text{princess}(x) \ \& \ \text{in}(e,x) \ \& \ \text{AT}(e, \text{HERE}, x)])]$
$\lambda e'_s[\text{ waltz}(e')]$	

PathP   Pred′

Path to Place$_{\text{HERE}}$ Pred$_{exist}$ DP
                                            a princess
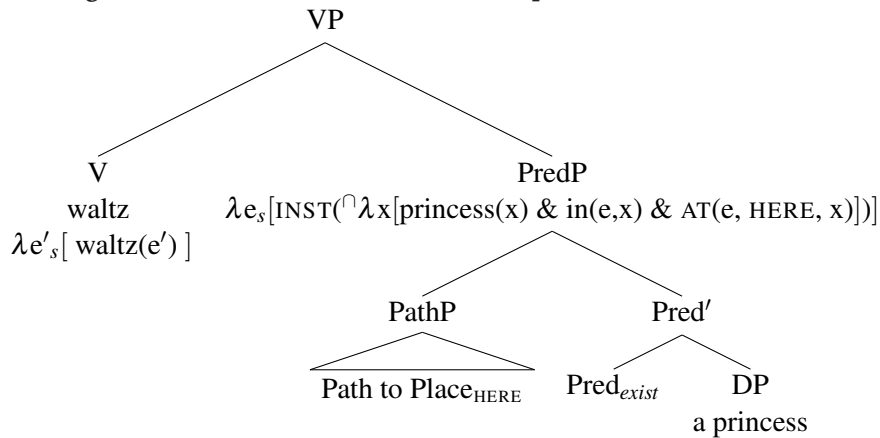
An important property of the analysis in (57) is the fact that V and the existential PredP combine by event identification rather than by function application. Note that without the verb *waltz*, the structure on its own denotes an event of coming-on-the-scene. With the verb *waltz*, we have a waltzing event that involves coming on the scene.

   The final step of forming the VP can be seen as the one that adds semantic content to the event of "coming on the scene"—in this case, we have a *waltzing* event. In (58) the symbol ○ is used to indicate the composition of V and PredP as functions.

(58)   *Combining V with PredP*
        a. $[\![\text{VP}]\!] = [\![\text{V}]\!] \circ [\![\text{PredP}]\!]$
        b. $\lambda e'_s [\text{ waltz}(e')] \circ \lambda e_s [\text{ INST}(^{\cap}\lambda x [\text{ princess}(x) \ \& \ \text{in}(e, x) \ \& \ \text{AT}(e, \text{HERE}, x)])]$
        c. $\lambda e_s [\text{ INST}(^{\cap}\lambda x [\text{ princess}(x) \ \& \ \text{waltz}(e) \ \& \ \text{in}(e, x) \ \& \ \text{AT}(e, \text{HERE}, x)])]$

We now have the VP denotation in (58c), repeated below as (59):

(59) $[\![\text{VP}]\!] = \lambda e_s [\text{ INST}(^{\cap}\lambda x [\text{ princess}(x) \ \& \ \text{waltz}(e) \ \& \ \text{in}(e, x) \ \& \ \text{AT}(e, \text{HERE}, x)])]$

It is worth noting that this denotation is quite similar to the one that Higginbotham (2000: 134) gives for *arrive*. As noted above, verbs like *arrive* may well be analyzed as existential unaccusatives, but with the *a-* of *arrive* denoting the Path and incorporating into the verb, as first proposed in Moro (1997: 291, fn. 19; 232).

   I will explain the rest of the derivation in words: once existential closure over the event variable in (59) occurs, we have the instantiation of a princess (from the individual correlate of a property), and we have a waltzing event such that the waltzing event extends along the path "in," with the princess as a participant in the event, and with the event ending at the contextually-determined location HERE.

4.3 Contextually-determined PLACE and the Stowell-Guéron Generalization

Existential unaccusative sentences have much in common with what have been called "presentational" *there*-insertion sentences (Aissen, 1975) or "Outside Verbals" (Milsark, 1974), which Milsark dubbed the "the outlaws of the ES world" (Milsark, 1974: 248):

(60)   Milsark (1974: 244)
        There walked into the bedroom a unicorn

The sentences in (61) below show *there*-insertion versions of the existential unaccusatives we first considered in (4), where (61d) is from Levin (1993: 89):

(61)   a.   There waltzed into the room a lady.
        b.   There pulled up to the curb a cab.
        c.   There came over to us a clown.
        d.   There darted into the room a little boy.

On my analysis, both types of sentences have Pred$_{exist}$ as part of their structure, and this is one reason why existential unaccusatives have *there*-insertion counterparts, though additional movement operations may be involved in sentences like (61)—e.g., relating to the heaviness of the DP.[34] The contextually-determined meaning of Place helps account for why presentational *there*-insertion is possible with motion verbs in some discourse contexts but not others. Consider, for example, the sentences in (62) with the manner-of-motion verb *dart.* In comparison to (62a), (62b) is degraded:

(62)   a.   There darted into her mind the perfect answer.
        b.   #There darted out of her mind the perfect answer.

The contrast in (62) goes back to an early observation from Stowell (1978), which I would like to elevate to the status of a named generalization (63):[35]

(63)   *The Stowell-Guéron Generalization*
        "*There*-insertion is possible with verbs of motion only if the motion is directed towards what is perceived as the center of the discourse." (Stowell, 1978: 5)

Stowell gives examples like the following (64):

(64)   There-*insertion and center of discourse* (Stowell, 1978)
        a.   There ran towards me a group of noisy children.
        b.   *There ran away from me a group of noisy children.

The Stowell-Guéron generalization describes the phenomenon involved in the contrasts between (62) and (64), even though in both sets of sentences it is not entirely clear what the "center of discourse" is.[36] The intuition behind the Stowell-Guéron generalization is clearly related to the line of research that P&B pursue on existential sentences and "perspective structure" (Borschev & Partee 2002; Partee & Borschev 2004), though space prevents us from pursuing those connections here. For the examples here, the most natural center of discourse is perhaps the pronominal in each sentence (*her, me*): in the unacceptable variants, (62b) and (64b), the direction of motion is away from those centers of discourse.
    Like all generalizations, the Stowell-Guéron generalization needs an explanation. In the terms of my analysis, the explanation concerns the constraints on the distribution of the silent, contextually-determined LOC in an existential PredP. If LOC is always silent, LOC must be the center of discourse, which is contextually-determined. Recall that what I refer to as LOC in the current analysis is the contextually-determined pronominal-like element *a* from McCloskey's denotation of the existential predicate. The variable *a* is suggestively named by McCloskey since this piece serves to "anchor" the existential proposition to the

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[34] This analysis allows for the possibility of rightward movement of the DP, or leftward movement of the DP followed by remnant movement. See also Deal (2009) for the possibility of Givenness movement in these sentences.

[35] Tim Stowell (p.c.) credits Guéron with the observation.

[36] Kimball (1973: 265) makes roughly the same generalization, in terms of "the perceptual field of the speaker."

discourse.[37] Although the distribution of *there* in English is beyond the scope of this paper, it appears that *there* is possible only with center-of-discourse LOC/McCloskey's *a*.

The contextual nature of "center of discourse" and the Stowell-Guéron generalization can be illustrated with the same sentence in different two contexts, where in both contexts the perceived center of discourse is the speaker—but in only one context is the direction of motion toward the speaker. (Note that although the sentences below refer to physical locations, presence in the discourse is what matters.) Consider the sentence in (65):

(65)   There ran into the room a little boy.

In the first context for this sentence, given below in (66), the speaker is standing in the room referred to in the sentence. In this situation, a *there*-insertion sentence is acceptable.

(66)   *Scenario 1: The speaker is in the classroom*
         ✓There ran into the room a little boy.

In the second context for this sentence, shown in (67), the speaker is standing outside the room. In this case, it sounds very strange to describe the event with *there*-insertion.

(67)   *Scenario 2: The speaker is standing in the hallway outside the classroom*
         #There ran into the room a little boy.

The Stowell-Guéron generalization also describes why *there*-insertion is, in general, not acceptable with verbs that denote disappearance, such as *disappear, exit, go out, die, vanish* (Levin, 1993: 260)—these verbs are almost always used for either literal or metaphorical movement away from the center of discourse.[38]

4.3.1 Center of discourse in existential unaccusatives

In the previous section I discussed the Stowell-Guéron generalization with respect to presentational there-insertion. In this section, I discuss the generalization with respect to existential unaccusative sentences. Even though existential unaccusatives are not *there*-insertion sentences, they still, on my analysis, have center-of-discourse LOC. On my analysis, then, a sentence has the existential unaccusative structure only when the direction of motion of the event is toward the center of discourse. Simply put, a sentence like (68a) has the (informal) meaning in (68b), where HERE stands for the center of discourse.

(68)   a.   A hippie danced in.
         b.   A hippie danced in HERE.

Consider the following context: a speaker is telling a story about the last time they shopped at a health food store (69).

(69)   *Context: Speaker is describing waiting in the checkout line at a health food store*
         All of a sudden, a hippie danced in.

The center of discourse in (69) has been set up to be the speaker's location, "here". In this context, the existential unaccusative sentence that A utters is felicitous.

The discourse in (70), by contrast, is set up so that the center of discourse is the location of a speaker who is outside the store.

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[37] See Irwin (2014) for an implementation of existential unaccusativity in Referential Anchoring theory (von Heusinger, 2007; 2011).

[38] Kimball (1973: 265) describes the phenomenon similarly: "we can have 'There exited a squirrel,' although in many dialects it is necessary that the speaker in such cases consider himself to be located outside of the enclosure from which the squirrel is coming."

(70)   *Context: Speaker is describing waiting outside a health food store*
    a. #All of a sudden, a hippie danced in.
    b. %All of a sudden, a hippie danced into the store.
    c.   All of a sudden, a hippie went in (to the store).

In this situation, it sounds very odd to utter the existential unaccusative (70a). When a specific endpoint location (someplace other than "here") is added, the sentence improves (70b), but it still sounds odd; the most natural pronunciation of (70b) is one in which pitch accents occur on *hippie* and (to a lesser extent) *store* (71):

(71)   *Context: Speaker is describing waiting outside a health food store*
    All of a sudden, a hippie DANCED into the store.

In the case of (71), the function of the sentence is not to establish a stable discourse referent for *a hippie* but to present an event of dancing into the store.

   Example (70c) has the directed motion verb *go* rather than the manner of motion verb *dance,* and the endpoint of the movement is fully specified. In this case, the prosody returns to the usual "unaccusative" prosody, and the sentence is acceptable, as illustrated in (72):[39]

(72)   All of a sudden, a HIPPIE went in(to the store).

One question that immediately arises from the denotation of the VP in an existential unaccusative sentence is how we understand the hippie (as in (72)) as the agent of the motion event—as the one who is doing the waltzing, dancing, or walking, for example. The following section addresses this and related questions next.

5 Existential sentences and "semantic bleaching"

One persistent observation about existential and presentational sentences is that the verbs in these sentences seem to be "semantically empty" or "bleached." Borschev & Partee (1998: 87, 90) were perhaps the first in the linguistics literature to make this observation about existential sentences, although Du Bois (1987: 831) noted that the intransitives that establish new discourse referents in his data from Sakapultek Mayan frequently have a "semantically empty [existential] verb" or "relatively neutral verb" translated as *come* or *arrive.*[40]

   In this section I discuss some of the forms these observations have taken over the years, as well as the ways in which the current analysis does and does not capture this observation about the meaning of existential unaccusative sentences. This section begins with observations about semantic bleaching from the existential literature since on my analysis, existential unaccusative sentences contain an existential predication, and so the observations below should apply to existential unaccusatives as well.

5.1 *Semantic bleaching in existential sentences*

The first set of observations about existential sentences and verb meaning comes out of P&B's work. Recall that on P&B's analysis, all existential propositions have the form given in (73).

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[39] A reviewer points out that the discourse center acts like a bound variable in sentences like *Every prisoner who was locked up in a cell was surprised when a lady waltzed in.* In this case, it appears that LOC can vary with prisoners and cells. And on at least one reading of this sentence, the discourse referent introduced by *a lady* also acts like a bound variable in that its lifespan does not extent beyond the sentence, as shown by the infelicitous followup: *#She was a prison guard.*

[40] Thank you to an anonymous reviewer for reminding me of Du Bois's observations along these lines.

(73)   Partee et al. (2011: 142)
         V_{BE} (THING, LOC)

In (73), "V_{BE} abbreviates the (open) class of verbs that can occur in existential sentences" (Partee et al., 2011: 142). P&B make use of BE in their analysis not only because it is frequently the verb in existential sentences crosslinguistically, but because of the meaning of Russian 'genitive of negation' (Gen-Neg) sentences. Gen-Neg, the phenomenon in which direct objects and unaccusative subjects in Russian can occur in the genitive case when the sentence is negated, occurs with many different semantic classes of verbs. P&B observe that despite the diversity of these verbs, the substitution of BE in genitive of negation sentences results in a "nearly equivalent sentence" (Partee et al., 2011: 144).

Consider the Gen-Neg example in (74): the form of the subject *tarakany* 'cockroaches' is genitive, rather than nominative, and the verb *begat'* 'run' does not agree with *tarakany* 'cockroaches', as it normally would; the agreement on *begat'* 'run' is singular (*begalo*) rather than plural (*begali*).

(74)   *Russian* (Partee et al., 2011: 146)
         Ne **begalo   tarakanov**.
         NEG ran-N.SG cockroaches-GEN.M.PL
         'There were no cockroaches running around.'

The example in (74) is interesting because the verb *begat'* 'run' is normally agentive, and its meaning is far from that of existential *byt'* (Partee et al., 2011: 146–147).[41]

P&B are interested in accounting for existential sentences that have verbs other than BE while maintaining the meaning of existential propositions in (73). They observe that it is not possible to list the verbs that can be used in an existential proposition: "the verbs that may occur in existential sentences are an open class; some are independently characterizable as existential or perceptual, and others may undergo 'semantic bleaching'" (Partee et al., 2011: 138). In other words, any verb can in theory become V_{BE} by means of semantic bleaching—though P&B do not detail how this process happens. They also say that the ability of a verb to undergo semantic bleaching comes about mainly from context (Partee et al., 2011: 146). The process of contextually-determined bleaching also arises in the literature on presentation, which we turn to next.

5.2 Semantic bleaching in "presentation" sentences

5.2.1 Presentation and bleaching in Guéron (1980)

Guéron (1980) comes to conclusions similar to P&B's, though in the examination of a completely different phenomenon, PP extraposition. This section relates the patterns of interpretation and PP extraposition that Guéron unearthed and shows that they apply to existential unaccusative sentences. My analysis of existential unaccusatives connects Guéron's early observations to well-known asymmetries in extraction and extraposition from subjects vs. objects (see Chomsky 2008 and Jurka 2010 for some recent discussion).[42] This syntactic understanding helps explain Guéron's conclusion that verb meaning plays no role in determining the availability of PP extraposition from a subject. As long as a verb can be "pragmatically emptied" of semantic content such that all it means is "appearance in the world of the discourse," the subject of that verb allows for PP extraposition (Guéron, 1980: 653–654).

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[41] Thank you to Inna Livitz for helpful discussion of the Russian data.
[42] Thank you to an anonymous reviewer for helping to highlight this point.

PP extraposition is the phenomenon in which a DP and a PP modifying it can be separated (75):

(75)   *PP extraposition*
        a.   A lady with auburn hair walked in.   *(no extraposition)*
        b.   A lady walked in with auburn hair.   *(PP extraposed)*

The relevant judgment for this diagnostic is whether the extraposed meaning is still available when the PP is separated from the DP it modifies; in all cases, the resulting sentence is grammatical, but in only some of cases can the PP be interpreted as modifying the subject. For example, in both sentences in (75), *with auburn hair* can be interpreted as describing a property of the lady—the color of the hair on her head.

  In contrast, PP extraposition is not acceptable in a similar sentence, as illustrated in (76). When the PP *with auburn hair* is extraposed, as in (76b), the only plausible reading for this sentence is that the lady was carrying some auburn hair as she was walking. (The symbol # indicates the unavailability of the extraposed reading).

(76)   *Unergative: PP extraposition not acceptable*
        a.   A lady with auburn hair walked to the store.   *(no extraposition)*
        b.   #A lady walked to the store with auburn hair.   *(PP extraposed)*

Guéron argues that PP extraposition from a sentential subject is acceptable only when the sentence has what she defines as the **Presentation LF**. By this reasoning, (76b) cannot be interpreted with the Presentation LF. The Presentation LF of Guéron (1980) has two properties: syntactically, the verb raises (at LF) to adjoin to the sentence, so that it c-commands the subject;[43] semantically, the Presentation LF denotes "the appearance of the subject in the world of the discourse" (Guéron, 1980: 653). The Presentation LF is contrasted with what Guéron calls the **Predication LF**. Both LFs are shown in (77):[44]

(77)   *Predication LF and Presentation LF* (Guéron, 1980: 651)
        a.   Predication $(_s$ (NP) (VP))
        b.   Presentation $(_s$ VERB$_i$ (s (NP) (… v$_i$ …)))

Guéron's Presentation LF in (77b) resembles the structure that I propose for existential unaccusative VPs. The interpretation of the sentence ("presentation") is of course also very similar. In my proposal, however—and in others that build on McNally's INSTANTIATE—much of the meaning of the VP comes from the existential predicate itself rather than from the meaning of the LF.

  Guéron observes that although sentences with subject PP extraposition "mean" coming-on-the-scene, many of these sentences contain verbs that are not synonymous with *appear*, a verb that straightforwardly means "coming on the scene" (78), and it should be evident, at this point, that these sentences can be analyzed as existential unaccusatives:

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[43] Guéron credits J. R. Vergnaud with suggesting this LF (Guéron, 1980: 651).

[44] These two LFs may be seen as a way of implementing the thetic/categorical distinction (Bretano (1874; 1973), and Guéron points out the relevance of this distinction, though she does not discuss it in detail (Guéron, 1980: 675, fn. 85). Space prevents me from discussing my analysis of existential unaccusativity in terms of this distinction, but readers interested in this connection might consult Kuroda (1972), Sasse (1987), Ladusaw (1994), and a line of research starting with Basilico (1995) and continuing through Basilico (2003).

(78)   *Presentation sentences with verbs that do not mean 'appear'*[45]
    a.   A man walked in from India.
    b.   A train chugged past with many passengers.
    c.   A bird darted by with golden wings.

Unlike P&B, Guéron (1980) does not specifically propose that the denotation of the verb in these sentences comes to mean BE, but both Guéron and P&B agree that what brings about these meaning changes is something pragmatic concerning the construal of a verb such that it comes to denote existence or appearance.

5.2.2 Guéron's diagnostics for presentation

Guéron (1980) shows that sentences with PP extraposition pattern with *there* BE sentences with respect to diagnostics such as negation, ellipsis, tag questions, and adverbial modification. Because *there* BE sentences may be considered as uncontroversially having the Presentation LF, these parallels provide additional support for Guéron's argument that sentences like (78) are interpreted with the Presentation LF. Although an examination of all of these parallels would take us too far afield, I would like to mention two of Guéron's diagnostics here, since the sentences that Guéron discusses most often are just those that I analyze as having the existential unaccusative structure.

Guéron observes that negation in *there* BE (her 'TI-1') sentences sounds very unnatural; in fact, Guéron presents these sentences as ungrammatical and marks them with an asterisk (79):[46]

(79)   Guéron (1980: 671)
    *There isn't a man at the door.

Whatever notation is used to present a sentence like (79), most would agree that (79) sounds very unnatural outside of a very specific and articulated context (and prosody). And as we have seen with respect to Karttunen's early observations, the negation in (79) prevents the establishment of a discourse referent for *a man*.

The same intuitive observations hold for negated existential unaccusative sentences; they do not establish discourse referents for their subjects (80), and they seem to require a carefully constructed context (81):

(80)   A lady didn't walk in. (#She was wearing a big hat.)

(81)   *Negated existential unaccusative sentences*
    a.   A hippie didn't walk over.
    b.   A cab didn't pull up.
    c.   Tigger didn't bounce in.
    d.   A peace symbol didn't hang on the wall.

Another diagnostic for the Presentation LF comes from tag questions. Guéron observes that although tag questions are acceptable with *there* BE sentences, the subject of the tag must be the expletive rather than the newly-created discourse referent (82):

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[45] These examples are (56a)–(56c) from Guéron (1980: 653).
[46] In today's conventions, the asterisk is generally reserved for sentences that have a purely structural ill-formedness or unacceptability; today these sentences would more likely be presented with some other symbol that indicates oddity or infelicity except in very specific contexts.

(82)   *Tag questions and* there BE *sentences*
          a.   There's a salesman at the door, isn't there?
          b.   *There's [a salesman]$_i$ at the door, isn't [he]$_i$?

In other types of Presentation sentences, tag questions sound very strange (the notation for the judgment on these sentences has been changed from Guéron's * to ??).

(83)   *Tag questions on presentational sentences* (Guéron, 1980: 661, ex. 84)
          a. ??A man arrived, didn't one/he?
          b. ??A storm occurred, didn't it?

Similar observations hold for existential unaccusative sentences. In my dialect of American English (which lacks some types of tag questions found in British English), neither a pronoun nor an expletive sounds quite acceptable in tag questions on existential unaccusatives (84):

(84)   *Existential unaccusative sentences and tag questions*
          a.   ?A cab just pulled up, didn't it/one?
          b.   ?A clown just came over, didn't she?
          c.   ?A little boy just darted in, didn't he/it?

In concluding that it is "not possible to state lexical constraints on PP Extraposition" (Guéron, 1980: 663), Guéron anticipated P&B's observations about the difficulty of pinning down the semantic classes of verbs that can occur in existential sentences. The discussion of Guéron's data in this section provides a syntactic way of understanding Guéron's observations—in terms of subject-complement asymmetries in extractability. Subject PP extraposition is relatively better in sentences that are existential unaccusative in structure, sentences in which the DP subject originates in a complement position rather than an external argument position. This perspective shifts the observation away from verb meaning and semantic bleaching to familiar extraction asymmetries between subjects and complements.

5.2.3 "Informational lightness" in Birner (1995)

A different line of research that invokes the notion of semantic bleaching is Birner's (1994; 1995) work on inversion sentences in English. Inversion sentences are defined as those in which (i) the notional subject of the sentence follows the verb; and (ii) some other (canonically post-verbal) element occurs pre-verbally.[47] Inversion can occur with BE, as in (85), or with a non-BE verb, as in (86) (italics in the original):

(85)   *Inversion around* BE (Birner, 1995: 237, ex. 7a)
          We have complimentary soft drinks, coffee, Sanka, tea, and milk. *Also complimentary is red and white wine.*
          [Flight attendant on Midway Airlines]

(86)   *Non-*BE *inversion* (Birner, 1995: 234, ex. 1c)
          At 3:30 p.m. Monday, at a pizzeria, *up walked a 17-year-old youth with a set of keys.*
          [Chicago Tribune, 7/13/89]

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[47] This definition is from Birner (1995: 234). See Birner (1995) for distinctions among constructions that are similar to inversion but differ either structurally or functionally.

Like the attempts to characterize existential verbs, attempts to characterize the set of verbs that allow inversion have not met with much success. The "classes" of verbs that are typically said to participate in inversion are existential and presentational verbs (Birner 1995: 244; see additional references therein). And inversion is often used to introduce new discourse referents, as in (85) and (86), though this is not always the case.[48] As shown in Birner's examples above, there is a clear connection between inversion and existential unaccusativity: in (85), the verb is BE, and (86) has the predicate "walk up", a prototypical existential unaccusative.

Birner argues that verb meaning does not predict whether that verb can occur in an inversion sentence; the relevant constraint is pragmatic, not lexical. Specifically, Birner argues that the generalization for inversion concerns the information status of the verb, such that the verb "may not represent new information in the discourse" (Birner, 1995: 234).[49] Using the notion of "informational lightness" rather than "semantic bleaching" (Birner, 1995: 247), Birner discusses two ways in which a verb might seem to contribute less information to an utterance. One way a verb is made informationally light is by being previously evoked. Example (85) is a case of this since *be complimentary* (considered a single predicate) occurs in the sentence preceding the inversion sentence. Informational lightness can also come about when the verb is not evoked but inferrable from the context (see Birner 1995, 1996 for discussion).[50]

The verb BE has a special role in inversion, since from this perspective it might be considered the most informationally light verb of all—and as we have seen, it is the output of semantic bleaching, for P&B. Non-BE inversion also seems to involve verbs of existence and appearance, but—as Guéron observed about PP extraposition—most of the verbs in inversion sentences do not straightforwardly denote existence or appearance. Like Guéron and P&B, Birner concludes that the relevant factors are pragmatic:

> The requirement that NBI [non-BE inversion] involve a verb of existence or appearance, therefore, appears to be largely due to contextual factors; as we have seen, verbs that are not inherently verbs of existence or appearance can in effect serve as such verbs in a context in which they are informationally light, contributing to the discourse no new information beyond existence or appearance. (Birner, 1996: 119)

Birner's analysis provides a helpful shift in the discussion away from verb meanings and semantically-determined groupings of verbs toward the pragmatic factors that license a particular syntactic structure. My analysis is consistent with Birner's observations and can be seen as providing some insight into the syntactic structure of inversion sentences—but only once the discourse conditions that Birner specifies are met. The framework that has been employed in developing my analysis here does not provide a straightforward way of implementing the pragmatic conditions that Birner identifies. And the formal proposal that I have made for existential unaccusatives here still does not capture the intuition that the verb appears to be semantically "bleached" in these constructions. The next section discusses some avenues for further research that might provide a way to bring the observations from Birner, P&B and the others together with family of formal approaches employed here.

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[48] See Birner (1995: 244) for examples of postposed DPs that are in fact discourse-old.

[49] In addition, the preposed constituent must be newer to the discourse (it cannot be "less familiar") than the postposed constituent (Birner, 1995: 236–237).

[50] My analysis could be extended to roots of spatial configuration, as Birner (1995) discusses with examples like *On his chin sprouted gray whiskers* (cf. Birner 1995: 251, ex. 38b).

5.3 Semantic bleaching and the existential unaccusative structure

The earlier sections of this paper developed a formal syntactic and semantic analysis of the existential unaccusative structure, and the current section has been discussing the observation that persists across frameworks and topics of analysis that the verb in existential sentences (such as those discussed by P&B) and presentational sentences (such as those discussed by Guéron 1980, Du Bois 1987, and Birner 1995) that the verb is in some way semantically "bleached". I have included a discussion of these observations despite the fact that the neo-Davidsonian framework in which my analysis is developed does not yet have an understanding of what it means for a verb to be more or less informative, or more or less semantically contentful. But I have included these observations because of their persistence across frameworks, and because they push at the boundary of where syntax and pragmatics meet and where existential unaccusativity lies. Although I must leave for future research an in-depth discussion of how current approaches to argument structure in a neo-Davidsonian semantics might define and account for phenomena like semantic bleaching in the verbal domain, I would like to end with a brief discussion of two aspects of the framework that might open up some ways of talking about these effects. The first involves the status of the semantics of roots in the neo-Davidsonian framework; the second involves thematic roles and participants in the LFs that I have proposed.

5.3.1 Verbal roots in the existential unaccusative structure

P&B and others observed that the class of existential verbs is an open one; in the root-based approach that I assume here, any verbalized root can—in theory—be an existential one if it can combine with a PredP such that the specifier of Pred is interpreted as a Path, and the PredP is headed by $Pred_{exist}$. But this is not to say that semantic root content is irrelevant for the selection of existential PredP. The eventive roots that I have discussed and that can combine with existential PredP with the most felicity have meanings that can be characterized as denoting motion or manner of motion. There are two semantic sub-types of roots, however, that are particularly resistant to combining with existential PredP. My analysis does not account for these, and after making some brief observations, I must leave this topic to future research.

The first semantic class of roots that resists selecting for existential PredP are those that denote changes of state. These are verbs like *break, freeze, melt,* and *open*—those that undergo causative/inchoative alternation. Birner (1995: 246, 253) notes that these roots are among those that resist inversion, as shown in (87) with examples from Levin & Rappaport Hovav (1995: 224), cited in Birner (1995: 246, 253).

(87)   *Change-of-state VPs resist inversion* (Levin & Rappaport Hovav, 1995: 224)
   a.   *On the top floor of the skyscraper broke many windows.
   b.   *On the streets of Chicago melted a lot of snow.
   c.   *On backyard clotheslines dried the weekly washing.

One explanation for the resistance of this semantically-defined group of roots to the existential PredP builds on the notion that there is more than one syntactically unaccusative structure; the VP structure that change-of-state roots tends to occur in is one in which the DP theme is a direct complement to the verb (or to the *v* + root complex) (Irwin 2012; Wood 2012; 2015).

But there are exceptions even here—some verbs that typically denote changes of state *can* appear to select for the existential PredP. Roots like *break* and *open,* for example, can occur in sentences like (88)–(89).[51]

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[51] These sentences are based on those found from Web searches.

(88)   a.   A robber broke in.
         b.   An announcer broke in.
         c.   A war broke out.

(89)   a.   A sinkhole opened up.
         b.   An opportunity opened up.
         c.   A whole universe might open up.

Each of the sentences in (88)–(89) establishes a discourse referent for its subject, even though nothing about the meaning of *break* or *open* denotes appearance on the scene.

A group of roots that appears to resist the existential PredP more stubbornly is exemplified by verbs like *laugh, sneeze,* and *smile*. Levin (1993) includes these in the category of "verbs of non-verbal expression" (Levin, 1993: 95).[52]

(90)   *Verbs that resist existential PredP (unacceptable on a presentational interpretation)*
         a.   *A puppy sneezed over.
         b.   *A little boy burped up.
         c.   *A clown laughed in.

These verbs are often considered denominal (though it is not clear what it means to say this, from a root-based perspective), and they often participate in the *way* construction and in cognate object sentences—diagnostic of English unergative structures. But what is important for present purposes is that when roots like these occur as verbs, they seem to reject being in any structure in which the subject originates in a VP complement (but see Levin & Rappaport Hovav 1995: 115 on causative/inchoative *burp*).

Furthermore, these verbs resist being presentational even when the subject has a co-referential DP down inside the VP—that is, even in sentences that are standardly assumed to involve VP-internal small clause structures, such as (91)–(92).[53]

(91)   A little girl laughed [her way into the room].

(92)   A teenager smoked [himself thin].

To the extent that we can find contexts in which sentences like (91)—(92) are acceptable, these sentences have true external arguments (interpreted as agentive) and the small clauses in them are not headed by Pred$_{exist}$; they therefore do not establish discourse referents for their subjects by means of INSTANTIATE.

5.3.2 Thematic role considerations

One property of the current analysis that may be relevant to intuitions about semantic bleaching concerns the thematic interpretation of the DP subject in existential unaccusatives. Specifically: the LF of the existential unaccusative structure does not include a secondary predicate like AGENT for the subject of these sentences. This subsection explores one way in which the neo-Davidsonian framework might be enlisted to help make more precise the intuition that the verb in an existential unaccusative sentence is semantically bleached.

Many of the sentences that Guéron (1980) discusses are existential unaccusatives, and, as she observed, the verbs in these sentences do not on their own denote appearance or

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[52] *Sneeze* is also discussed as a verb of "internal causation"—like *burp*—in Levin & Rappaport Hovav (1995: 116).

[53] Thank you to Dave Embick for helpful discussion of this phenomenon.

coming-on-the-scene. The verbal roots in existential unaccusative sentences often denote manner of motion (e.g., *run, waltz, dart*) and can occur in both unergative and (existential) unaccusative structures (93):

(93)   a.   The princess waltzed gracefully.   (unergative)
           b.   A princess waltzed in.   (existential unaccusative)

In the unergative sentence (93a), the DP subject is standardly analyzed as merging to the specifier of a transitive Voice or v^* head that assigns the thematic role of AGENT. This was shown in (24), where transitive Voice is implemented as Voice$_{\{D\}}$, following Schäfer (2008), among others. The two Voice-VP configurations are illustrated in (94).

(94)   Two relevant types of Voice
        a.   Transitive Voice   b.   Unaccusative Voice
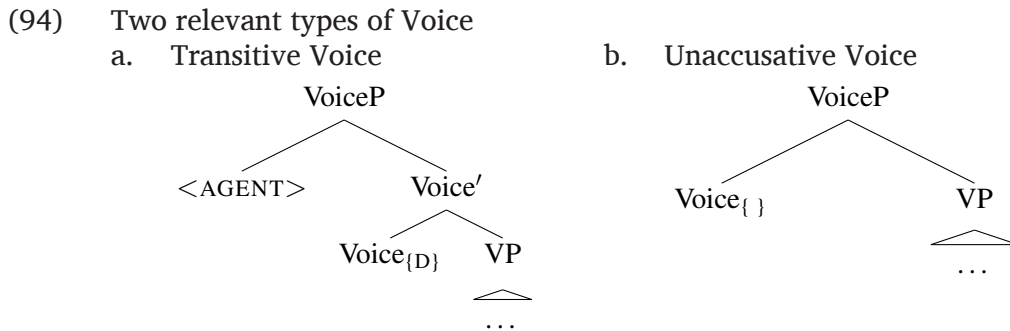
The Voice head in the existential unaccusative structure does not host an external argument and does not assign a thematic role. Verbal roots such as *run, waltz, dart* can, however, occur in unergative structures and therefore their VPs *can* be selected for by Voice$_{\{D\}}$.

The meaning of an unergative sentence like (93a) includes an assertion that the princess is the agent of the waltzing event. In Kratzer's (2003a) terms, the denotation of the VoiceP involves a neo-Davidsonian secondary predicate saying that the princess is an agent. This is shown in (95), where an AGENT predicate explicitly conveys that the princess is the agent of the (waltzing) event.

(95)   *A princess waltzed beautifully.*
        $\lambda e\ \lambda x$ [waltz(e) & **agent(e, x)** & beautifully(e)]

In the assertion of an existential unaccusative, however, the princess is a theme. The analysis that I have developed in this paper follows Kratzer (2003b) in analyzing themes as direct arguments and therefore never introduced by a neo-Davidsonian secondary predicate. The notion that the princess is the agent of the waltzing event is therefore not part of the assertion of an existential unaccusative sentence. This is shown in (96) below, where (96) is a simplified version of (59)—to be compared with the unergative in (95)—and the argument *x* in the formula (for the princess) in boldface:

(96)   *A princess waltzed in.*
        $\lambda e\ \lambda x$ [waltz(e) & in(e, **x**) & AT(e, HERE, **x**)]

The LF in (96)—unlike that of (95)—does not have a predicate like AGENT that asserts the princess's role in the waltzing event. And yet even in an existential unaccusative sentence like (96), we interpret the princess as the one who is doing the waltzing. The formula in (96) does not tell us where the inference that the princess is the waltzer comes from.[54]

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[54] Observations about sentences with arguments that are interpreted with more than one thematic relation go back at least to Jackendoff's (1972) discussion of sentences like *The rock rolled down the hill* and *Max rolled down the hill* (Jackendoff, 1972: 34). In a system such as Ramchand (2008), multiple thematic roles can be explicitly assigned to a single DP in the syntax, if we are willing to sacrifice the insights on agents and themes from Kratzer (2003a).

The fact that we understand the princess as an agent in the event in an existential unaccusative sentence is illustrated by the ill-formedness of a discourse like (97):

(97)   A princess waltzed in. ??But she wasn't in control of her body.

We understand the princess as an agent in the event, even though the DP *a princess* is not in a structural position to be assigned the thematic role AGENT in the syntax, and it does not receive the neo-Davidsonian secondary predicate in the semantics.

Just as the LF in (96) does not tell us how we end up interpreting the princess as the waltzer, it also does not tell us how we understand the verb waltz as "bleached" in this but not in the unergative structure. One way of recasting the intuitions about semantic bleaching in the current framework is to observe that (96) lacks a predicate that is typically part of sentences with a waltzing event (the AGENT predicate). Another way is to recall the insight from Marantz (1981; 1984) (which Kratzer 2003a builds on) that the meaning of the verb in any given sentence is determined by the verb plus its direct arguments—the VP. In this way, the differences between how the verb *waltz* is interpreted in (96) vs. *waltz* in a prototypical agentive sentence might contribute to intuitions about the meaning ("bleaching") of the verb itself. Space prevents me from pursuing these ideas further, and it must be acknowledged that the formal frameworks in which the current analysis has been developed do not yet provide a precise understanding of what semantic bleaching really is so that we know what effects must be accounted for by it.[55] I hope that the directions sketched above might open up some theoretical spaces to explore these phenomena since they are at a particularly interesting intersection of syntax, semantics, and pragmatics.

6 Conclusion

This article has brought together observations from the functional and generative literature to argue that some intransitive sentences in English are best analyzed as syntactically unaccusative and semantically as containing an an existential proposition. On the approach taken here, any verbal root can in theory occur in the existential unaccusative structure as long as that verb can be interpreted as a verb of movement and can combine with a SC whose specifier is interpreted as a Path. This approach has the advantage of explaining long-standing observations in the literature that the verbs of existential and presentational sentences cannot be characterized by a single semantic class (Borschev & Partee 1998: 87, 90; Partee et al., 2011: 138). The account also shows that "unaccusativity mismatches" (Levin 1986; Levin & Rappaport Hovav 1995) in which a verb can occur in either an unaccusative or an unergative sentence are best seen as the ability of many verbal roots to occur in more than one syntactic structure.

This article began with the observation that English appears to violate the predictions of Du Bois's PAS, whereby new discourse referents are introduced by DPs in the O and (crucially) the S roles—as transitive objects and intransitive subjects. Du Bois's generalization has been shown to hold for the O role in English (Prince, 1981; 1992), but it has been less clear whether and in what way it holds for the S role. This paper has argued that a subtype of S—subjects of existential unaccusative sentences—establish new discourse referents in canonical subject position, and that they can do so because they share structure and meaning with existential *there* BE sentences.

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[55] Thank you to an anonymous reviewer for helpful feedback on these topics.

Abbreviations

ABS = absolute, e = semantic type of entities, ERG = ergative, GEN = genitive, Gen-Neg = genitive of negation, M = masculine, N = Neuter, NEG = negation, P&B = Partee & Borschev, PAS = Preferred Argument Structure, PL = plural, s = semantic type of events, SG = singular, t = semantic type of truth values.

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Competing Interests

The author has no competing interests to declare.

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