

# Semantic structure and argument realization in (mostly Hebrew) existentials<sup>1</sup>

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## 1 Introduction

In existential constructions such as (1), the single NP<sup>2</sup>, which I refer to as the pivot following Milsark (1977), often exhibits coding properties that are not consistent with the behavior of core arguments.

- (1) There's a prophet on this ship.

For example, in English pivots are post verbal, accusative when pronominal, and optionally agree with the verb *be*. Neither subjects nor objects exhibit this behavior.

- (2) There were them (\*they) and there was us (\*we).<sup>3</sup>

Similarly in Hebrew pivots show accusative case and optionally agree with the verb *h.y.y* 'be' in the non-present, as in the following attested example.

- (3) hayta Sam et ha-mila 'boring'.  
be.pst.f.sg there acc. the-word.f.sg boring  
'There was the word 'boring' there.'

Again, no core argument can show this pattern in Hebrew, a language with no object agreement and no accusative subjects. Similar examples can be found in other languages (see e.g. Rodríguez-Mondoñedo 2005 for Spanish). One could therefore state the general observation in (4).

- (4) **Pivotal disobedience:** Pivots can violate morphosyntactic rules of argument realization.

What is the reason for pivotal disobedience? With the exception of Lambrecht (2000), I know of no attempt to answer this question in a general way. This paper argues that pivotal disobedience is unsurprising given a proper understanding of the semantics of existential constructions: pivots exhibit morphosyntactic properties atypical of core arguments simply because they do not function as arguments but rather as the main predicates of the construction. Claiming that an expression in a clause is predicative means little without a semantic theory that states what kind of predicate the expression is and what it predicates of. I argue here that pivots are second order predicates, predicated of contextually determined domains, and provide a model theoretic interpretation for existentials incorporating this idea.

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<sup>2</sup>Throughout this paper I refer to all nominal phrases as NP, sidestepping the question of headedness by D.

<sup>3</sup>[www.geoffthompson.com/media/ShapeShifter\\_Introduction.pdf](http://www.geoffthompson.com/media/ShapeShifter_Introduction.pdf)

A predicative analysis of pivots argues against several analyses that have been popular in the syntactic literature. These are analyses in which existentials are seen as a type of locative predication (e.g. Lyons 1967; Freeze 1992), analyses in which the existential involves a small clause argument of a copular verb (e.g. Freeze 1992; Chomsky 1981, 1986; Hoekstra and Mulder 1990) and analyses in which the pivot is an argument of an unaccusative predicate (e.g. Levin and Rappaport Hovav 1995, Harves 2003<sup>4</sup> and Doron 1983, Falk 2004 for Hebrew).

The approach outlined here also rules out the semantic analysis often posited in the literature (e.g. Milsark 1974; Keenan 1987) that the pivot is a semantic argument of the predicate expressed by the XP that follows it (e.g. *on this boat* in (1)).

## 2 Predication and the syntax–semantics interface

Probably all theories of grammar, generative or not, posit a principled relation between form and meaning. The nature of this principled relation varies significantly, but it seems fair to say that in generative linguistics, all frameworks assume that clause structure and morphosyntactic systems such as case and agreement as well as some aspects of clause structure are regulated by a principle like the one in (5).

### (5) **Semantics-Morphosyntax Correspondence:**

Morphosyntax reflects semantic aspects of predication.

This principle is reflected for example in the GB system of thematic structure and the  $\theta$ -criterion (Williams 1994), in Dowty's 1991 theory of proto-roles, in Baker's 1988 UTAH, in Jackendoff's (1990) Lexical Conceptual Structure, in the theory of predicate decompositions (e.g. Levin and Rappaport Hovav 1998), and in the Logical Structure of Role and Reference Grammar (e.g. Van Valin and LaPolla 1997; Van Valin 1993).

By “semantic aspects of predication” in (5) I mean the basic distinction between a predicate and its arguments. One may wonder whether this distinction can justifiably be called semantic. For example, it does not by conceptual necessity correspond to anything in a model theoretic semantics. If it is intuitive to think of the predicate–argument distinction as corresponding to that between function and argument, no such correspondence is in general required for compositional semantics, and in fact in Montague grammar no such correspondence exists. Nevertheless, a semantic distinction between argument and predicate is *empirically* necessary, since stating the most basic generalizations about grammatical behavior presuppose it. For example, in order to express the presumably universal fact that an active transitive predicate maps the causer argument to subject and the undergoer argument to object, but never the reverse, one must be able to distinguish a predicate from its arguments at a semantic level, and determine independently of clause structure what the predicate “says about” the arguments.<sup>5</sup> The predicate–argument

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<sup>4</sup>Harves's analysis combines a small clause approach with an unaccusativity approach: the pivot is the internal argument of a small clause unaccusative predicate.

<sup>5</sup>Chierchia (1985) argues that the distinction between arguments and predicates should in fact be strictly correlated with the distinction between arguments and functions in the formal apparatus. He posits the following principle of functional correspondence:

**Functional Correspondence:** A lexical item  $\alpha$  is syntactically a function (belongs to a syntactic category of the form A/B) iff it is semantically a function (that is, its meaning is of type  $\langle a, b \rangle$ ).

distinction can be cashed out in structural terms (as in most examples listed above) or in terms of lexical entailments as in Dowty's theory, but it must be made and must be made semantically.

If the correspondence between semantic predicate–argument structure and morphosyntactic form is taken seriously, then the morphosyntactic properties of existential sentences should be no exception. The morphosyntactic form of pivots should relate to their role in the predicational structure of existentials. However, it is exactly the difficulty in stating the predicational structure of existentials which has made the so difficult to characterize. Consider the sentence in (6).

- (6) There are [people who voted for them].

The bracketed phrase in (6) seems to be an NP. If *there* is meaningless as it probably must be (see Keenan 1987) and if the verb *be* denotes some identity function as is often assumed (but not always, e.g. McNally 1998), then it is not clear what in the sentence could take this NP as an argument or alternatively be its argument.

The rest of this paper is structured as follows. In the next section I briefly discuss two approaches to the predicational structure of existentials: the locative approach and the unaccusative approach. I point out problems with both and reject them. In section 3.4 I argue that the pivot is semantically a predicate in the existential construction and provide a compositional semantics for the construction incorporating this claim. In section 4 I show how the semantic analysis I propose accounts for the behavior of Hebrew pivots.

### 3 Pivots and the semantic structure of existentials

What then is the semantic structure of existentials? What is the predicate and what is/are the argument(s)? Two approaches have been prominent. According to the first, existentials are locative predications, inherently related to locative copular sentences. According to the second, existentials are headed by an unaccusative predicate.

#### 3.1 Existentials as locatives

By far the most common answer to the question of the semantic structure of existentials in the literature is that existentials are semantically locative predications. In terms of predication, the intuition behind this view is that in both existentials and copular locatives the main predicate is a locative predicate predicated of an NP. One motivation for this view comes from the observation that existentials and copular locatives sometimes have the same truth conditions, and that in some languages they seem to involve exactly the same material. For example, intuitively the two sentences in (7a) are both true iff the set of knives has a non-empty intersection with the set of things located in the cupboard. In the general case, an existential and a locative copular sentence would have the truth conditions in (7b).

- (7) a.  $[[\textit{There are some knives in the cupboard}]] = [[\textit{Some knives are in the cupboard}]] = 1$   
iff  $[[\textit{knives}]] \cap [[\textit{in the cupboard}]] \neq \emptyset$   
b.  $[[\textit{DP}]] \cap [[\textit{locative}]] \neq \emptyset$

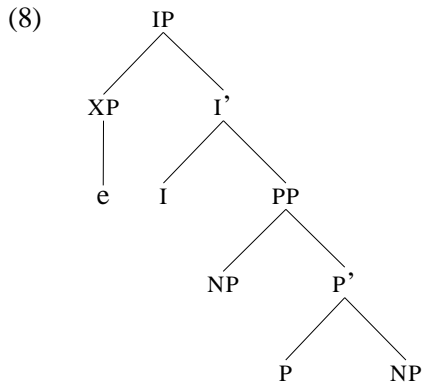
Another motivation comes the observation that existentials seem to involve locative elements in many languages. The following quote from Lyons summarizes this kind of argument:

... in many, and perhaps in all, languages existential and possessive constructions derive (both synchronically and diachronically) from locatives ... There is no need to stress the connection between existential and locative sentences. The occurrence of an originally deictic particle in the existential sentence in many European languages (Eng. *there*, Fr. *y*, Ital. *ci*, etc; and cf. Ger. *dasein*) testifies to the diachronic development ... In fact, the ‘existential’ *be*-copula does not normally occur in English without a locative or temporal complement and it might appear reasonable to say that all existentials sentences are at least implicitly locative (the term ‘locative’ being taken to include both temporal and spatial reference).

Lyons 1967:360

Finally, another motivation for this view comes from the fact that in some languages the equivalents of English existential and locative copular sentences involve the same material in different orders (see Clark 1978 for a typological survey).

To capture these affinities, many theories model existentials and locative copular constructions as having a common underlying structure, usually involving a small clause, as in (8) from Freeze (1992). For Freeze, existentials and copular locatives are achieved by “a re-ordering of the same constituents” (Freeze 1992:556).



On this and on small clause analyses (such as the various versions of *there*-insertion, Chomsky 1981, 1986), any differences between existentials and copular locatives are purely syntactic. In Freeze’s analysis the difference is in which constituent raises to SpecIP, where raising is motivated by a formal definiteness feature. If the subject of the PP is definite it may raise, and if the subject is indefinite and the location definite then they location may raise. In other analyses the difference is motivated by theory internal considerations such as case theory. I do not discuss these approaches here at length, but point out two problems.

First, case driven analyses such as Chomsky (1986) are predicated on the assumption that pivots receive nominative case from Infl through an A-chain with the expletive. Yet pivots are not nominative in many languages, including English (cf. (2) above).

Second, analyses based on a formal definiteness feature such as Freeze (1992) predict that existentials should never have locatives that are less definite than the pivot.<sup>6</sup> This prediction is not borne out in languages like Hebrew that do not exhibit a definiteness effect, nor is it borne out in English, as shown by the following example from Virginia Woolf's *Night and Day*.

- (9) Surely there's the toasting-fork somewhere?<sup>7</sup>

Furthermore, if it is really definiteness that drives the movement operations responsible for the differences between copular and existential constructions, it is not clear to me why copular constructions with indefinite subjects and definite predicates, such as *Some idiot is in the elevator*, are ever generated. For these reasons I conclude that a purely syntactic explanation of the differences between existential and locative copular constructions is not forthcoming.

Another explanation of the differences between existentials and locative copulars that assumes them to be semantically equivalent is the information structural explanation of Lambrecht (2000). Briefly put (and hence oversimplified), Lambrecht's explanation is that existential constructions are an instance of what he calls *sentence focus*. A sentence focus proposition is a proposition that lacks a topic–focus articulation and in which the whole proposition is in focus. Pivots are subjects in a sentence focus construction which has a non-sentence focus counterpart (the locative copular construction), and are therefore subject to a principle of detopicalization, stated in (10) (where SF= sentence focus, PF= predicate focus).

- (10) **The principle of detopicalization** (Lambrecht 2000:624)  
SF marking involves cancellation of those prosodic and/or morphosyntactic subject properties which are associated with the role of subjects as topic expressions in PF sentences.

The detopicalization principle is implemented by endowing the subject with formal properties that are prototypically associated with focal elements, and the unmarked focal element is the object. While I find this line of explanation intuitively convincing, it is subject to the objection that pivots are not necessarily focal – they can be topical. This is exemplified by the Hebrew sentence in (11)

- (11) ha-be'aya im ha-sefer ze Se-en oto ba-sifriya.  
the-problem with the-book dem that-neg.exist him in.def-library  
The problem with the book is that they don't have it in the library. (lit: ... that there isn't it in the library)

The upshot of the discussion so far is that analyses which take both existentials and copular locatives to involve a locative predication have trouble explaining why the two constructions look so different from each other across languages. However, there strong semantic reasons to reject the basic premise on which such analyses rest, namely the semantic claim that existentials are locative predications. I argue that existentials are not semantically locative for two reasons:

- (a) The main predicate in existentials is not locative.  
(b) The locative element in existentials (when there is one) is not the main predicate.

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<sup>6</sup>It is also worth noting that without a theory of what the formal definiteness feature is marking, and how this definiteness distinction carries over to quantificational NPs, it is difficult to see how this approach can be explanatory.

<sup>7</sup><http://www.litrix.com/nightday/night027.htm>

### 3.1.1 The main predicate in existentials is not locative

A locative predication is one which the main predicate predicates a location of an entity (or set of entities). While copular locatives always predicate a location of an entity or set of entities, existentials have a wider range of meaning, demonstrated in (12). These sentences are so called *bare existentials* (BEs); they do not involve any overt material following the pivot.

- (12) a. There is no telling what will happen. (POSSIBILITY)  
b. There are many ways to reach enlightenment. (EXISTENCE)  
c. There are handouts (if you want one). (AVAILABILITY)

The equivalent copular construction for each of these existentials would involve a different main predicate: *be possible* in (12a), *exist* in (12b) and *be available* in (12c). None of these predicates is particularly locative, certainly not prepositional as Freeze's analysis would require. Furthermore, there is no one locative predicate to head the supposed small clause in these examples and which captures all of these meanings.

The common strategy about BEs in locative approaches is to employ the intuition that "To be is to be somewhere" (e.g. Lyons 1967; Partee 2004) and argue that the sentences in (12) involve some deictic locative/temporal predicate, like *here* or *now*, and hence assimilate to locative predication. However, the presumed deictic predicate can never be expressed as an explicit locative predicate, casting serious doubt on its locative character.

- (13) a. \* No telling what will happen is here/now/somewhere/sometime.  
b. \* Many ways to reach enlightenment are here/now/somewhere/sometime.  
c. Handouts are here  $\neq$  There are handouts (available, but not here).

I therefore conclude that whatever the main predicate is in existentials, it is not a locative predicate predicated of the pivot. This of course does not mean that it *cannot* be a locative predicate, only that it does not have to be a locative predicate, and hence that existentials cannot be semantically reduced to locative predications.

### 3.1.2 The locative element in existentials is not the main predicate

What about existentials that do involve a locative element? There are various reasons to believe that this element is not a main predicate.

First, as is sometimes pointed out in the literature, the locative element in existentials is omissible, whereas the locative element in copular locatives is not:

- (14) a. There are 9 planets.  
b. \*9 planets are.  
c. There was an accident.  
d. \*An accident was.

This indicates that the status of the locative is different in existentials and locative copulars. Generally, the presence of the main predicates is required to license the presence of its arguments. The main predicate also contributes in the default case the content asserted of discourse referents. For these reasons, main predicates are not in general omissible, and there is no phenomenon of “predicate drop” equivalent to pro-drop. This suggests that the locative element in existentials is not a main predicate.

Finally, there are cases of existentials with locative elements in which the locative element cannot possibly be a locative predicate, and is therefore ungrammatical in a locative copular construction, as exemplified in (15).<sup>8</sup> (15b) can only mean that I do not come from any beach. It cannot mean what (15a) means, namely that the place I come from does not have a beach.

- (15) a. There’s no beach where I’m from.  
b. \*No beach is where I’m from. (On intended meaning)

This shows that even when there is locative material following the pivot, it does not have the semantic function that the locative predicate in a locative copular construction does.

To summarize this section, I have argued that existentials and locatives are not semantically parallel. Existentials do not necessarily involve locative meaning, and even when a locative element follows the pivot, it is not the main predicate in existentials, and is not necessarily semantically equivalent to a locative predicate in a copular construction.

## 3.2 Existentials as unaccusatives

A prevalent approach to existentials relates them to unaccusativity. On this approach, the pivot is an argument of an unaccusative predicate, i.e. an underlying object / internal argument / theme (Burzio 1986; Levin and Rappaport Hovav 1995; Falk 2004; Doron 1983, *inter alia*). Two questions arise if such an analysis is adopted. First, what is the unaccusative predicate in an existential construction and what is its meaning? Second, can the properties of pivots be explained by unaccusativity? Specifically, if existential predicates are unaccusatives they should share properties with other unaccusatives; whatever properties distinguish the unaccusative class from other intransitives should also characterize existential predicates. I discuss each in turn.

### 3.2.1 Existential copulas/predicates are not unaccusative

What would make existential predicates unaccusative? Presumably, it would be an argument structure with a single core argument that is semantically a theme. For example, Levin and Rappaport Hovav (1995) (LRH) define verbs of existence as dyadic predicates with two internal arguments, a theme and a location. Existentials are unaccusative because they have an unaccusative argument structure involving a theme and a location.

- (16) BE(theme, loc) is an unaccusative argument structure.

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<sup>8</sup>This is one example in a line of examples that show that the locative in existentials is an contextual adjunct rather than a predicate. Examples and discussion are found in Francez (In preparation).

However, if (16) is the argument structure for existentials, it is surely the argument structure of copular ‘be’ as well, at least in copular locatives. Hence, if ‘be’ is unaccusative, copular ‘be’ should also be unaccusative. Yet copular sentences do not show properties of unaccusatives in many languages, at least in relation to traditional unaccusativity diagnostics. For example, in Italian, copular *essere* does not allow *ne*-cliticization, though all unaccusatives do (see e.g. Van Valin 1990; Bentley 2004).<sup>9</sup> In French, copular constructions do not allow expletive *il*, while all unaccusatives do. In Russian, copular constructions do not allow genitive of negation, but all unaccusatives do. This is summarized in the table in (17).

(17) **Unaccusatives vs. copular locatives**

Language	phenomenon	unaccusatives	copular locatives
Italian (Bentley 2004)	<i>ne</i> -cliticization	yes	no
French (Schwartz 1993)	expletive <i>il</i>	yes	no
Russian (Schwartz 1993)	genitive of negation	yes	no

It therefore seems unlikely that unaccusativity can be made to generally explain the morphosyntactic properties of pivots that separate them from canonical arguments such as the subject of a copula. In the next two subsections I demonstrate the unwanted results yielded by an unaccusative analysis for both English and Hebrew existentials.

### 3.2.2 Unaccusativity does not explain English existentials

According to LRH (also Hale and Keyser 2002; Hoekstra and Mulder 1990, among many others), English *there*-insertion is an unaccusative diagnostic, and hence *be* is an unaccusative predicate, at least when it has the argument structure in (16) above. However, existential *be* does not behave like an unaccusative in several respects.

First, while English unaccusatives can realize their single argument as a subject (without an expletive), existential *be* often cannot realize its theme as subject. (18a) does not have a counterpart in which *be* is the main verb and the pivot is its subject, as evidenced by the ungrammaticality of (18b,c). In contrast, an unaccusative verb like *arrive* can realize its single argument either as a canonical subject or in the post-verbal position typical of pivots, as shown in (18d,e).

- (18) a. There *are* three ways out of here.  
 b. \*Three ways *are* out of here.  
 c. \*Three ways out of here *are*.  
 d. There *arrived* four riders.  
 e. Four rider *arrived*.

Existential *be* can also show impersonal agreement, whereas no other unaccusative in English can.

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<sup>9</sup>As shown by e.g. Levin and Rappaport Hovav (1995) and Bentley (2004), many of the criteria usually taken to target unaccusatives, and *ne*-cliticization in particular, do not in fact target the same class of verbs as other criteria for unaccusativity do, and apply also to some unergative verbs. Nevertheless, these criteria target a class that includes *at least* the unaccusatives. The point here is that if existentials are unaccusative by virtue of having an unaccusative argument structure, then whatever these criteria target, they should not differentiate existentials from locative copulars. Yet they do.



- (19) a. There's three riders outside.  
 b. \*There arrives / is arriving three riders.

The behavior of existential *be* does not therefore parallel the behavior of unaccusatives in English.

### 3.3 Unaccusativity does not explain Hebrew existentials

Hebrew existentials in the present are formed with the existential lexemes *yeS* 'there is' and *eyn* 'there isn't', examples are given in (20). Recall that the Hebrew pivot is marked with accusative case when definite, as in this example.

- (20) *yeS* / *e(y)n* et ha-sefer Sela ba-sifriya.  
*yeS* / *e(y)n* acc. the-book of.3.f.sg in.def-library  
 'They don't have her book in the library.' (Lit.: There isn't her book in the library.)

Several analyses of *yeS* as unaccusative are found in the literature, of which I mention only two, that of Doron (1983) and the most recent one of Falk (2004) (see also Borer 1984; Melnik 2002).

Falk's analysis recognizes two entries for *be* verbs (see also Bresnan 2001):

- *be*<sub>1</sub>: occurs with adjectival and nominal predicates.
- *be*<sub>2</sub>: occurs with locatives, which are not predicates but obliques.

*be*<sub>2</sub> is then analyzed as an unaccusative predicate that can realize its single core argument as either subject or object. The unaccusativity of *be*<sub>2</sub> is taken to explain the possibility of accusative case (and post-verbal position) for the Hebrew pivot.

Doron (1983) claims that *yeS* has a single theme argument. Following Borer (1984), she assumes that *yeS* has been reanalyzed as an accusative case assigner, according to Borer a reanalysis typical of "ergative" predicates, i.e. predicates that assign no role to their subject and a theme role to their nominative object (in other words, unaccusative predicates).

These analyses, and any analysis that attempts to explain the behavior of pivots in Hebrew by alluding to unaccusativity, faces two problems. The first problem is a false generalization. The option of realizing the theme argument as an object is not available at all to unaccusatives in Hebrew, as shown in (21). If *yeS/e(y)n* are unaccusative lexemes, then they are unique in their class.

- (21) a. \* *nafla* et ha-kos.  
 fall.pst.3.f.sg acc the-cup.f  
 'The cup fell.'  
 b. \* *met* et ha-kelev.  
 die.pst.3.m.sg acc the-dog  
 'The dog died.'

The second problem for such analyses is that they obscure a distinction between unaccusatives and *yeS*. While unaccusatives can always realize their argument as subject as in (22), *yeS* cannot do so, as exemplified in (23)-(25). This is true even when *yeS* agrees with the pivot, as in (24) and (25).

- (22) a. ha-kos    nafla.  
           the-cup.f fall.pst.3.f.sg  
           ‘The cup fell.’  
       b. ha-kelev met.  
           the-dog die.pst.3.m.sg  
           ‘The dog died.’
- (23) a. yeS maspik sukar.  
           yeS enough sugar  
           ‘There’s enough sugar.’  
       b. \* maspik sukar yeS.  
           enough sugar yeS  
           ‘There’s enough sugar.’
- (24) a. yeS et    ha-seret    ba-kolno’a.  
           yeS acc. the-movie in.def-cinema  
           ‘The movie is showing at the theater.’ (Lit.: There’s the movie in the theater.)  
       b. ha-seret    \* yeS / ?? yeSno        ba-kolno’a.  
           the-movie    yeS /    yeS-3.m.sg in.def-cinema  
           ‘The movie is showing at the theater.’
- (25) a. yeS dfika ba-oto  
           yeS dent.f in.def-car  
           ‘There’s a dent in the car.’  
       b. \* dfika yeS        /                    yeSna ba-oto  
           dent yeS.3.f.s in.def-car  
           → ‘A dent is in the car.’

In Hebrew too then, as in English, the existential lexemes do not pattern morphosyntactically with unaccusatives.

To summarize this section, I have argued that an unaccusative approach cannot account for the differences between existential and locative constructions in the general case, and that such an approach wrongly classifies pivots with the single argument of unaccusatives in both English and Hebrew. This is of course not surprising, given the observation of pivotal disobedience with which this paper begun. If pivots violate general patterns of argument realization, they are not expected to pattern with the argument of an unaccusative predicate any more than with the argument of any other predicate.

The question then remains, what *is* the main predicate of existential sentences? Assuming that copulas do not contribute contentful meaning and take predicative complements, a natural candidate is the pivot.

### 3.4 Pivots as predicates

My claim is that the pivot is the main predicate of the existential construction. Intuitively, to say that something is a predicate is to say that it describes a property of something. The immediate question is:

what is the pivot a predicate of?

A natural answer is found in Barwise and Cooper (BC,1981) . According to them, the pivot is a predicate of the domain of quantification  $E$ . The truth conditions they give to (English) existentials is given in (26).

$$(26) \quad [[ \textit{there be NP} ]] = NP'(E)$$

BC's semantics is however too strong. The relevant domain of which a pivot is predicated is not necessarily  $E$ . For example, (27a) is not equivalent to (27b), as it would be if the pivot were predicated of  $E$  in this example.

- (27) a. There's no hot water.  
b. Hot water doesn't exist.

My suggestion is that the pivot is a predicate of a contextually determined domain of quantification. In terms of predication, the predicational structures I suggest for existentials and copular locatives can be described schematically as in (28).<sup>10</sup>

(28) **Predication in existentials and locatives:**

Construction	Predicate	Argument
Copular locatives:	LOCATIVE	theme
Existentials:	PIVOT	contextually given domain

Formally, the meaning I assign to existentials can be described as follows. Assume a model  $M = \langle E, I, L, T \rangle$ , where  $L$  and  $T$  are non-empty sets of locations and times respectively. The denotation of a pivot is a property of sets of type  $\langle \langle e, t \rangle, t \rangle$ , as is argued by BC and many others (e.g. Keenan 1987; Zucchi 1995; Keenan 2003). The “semantic subject” of an existential, the sole argument of the pivot predicate, is a contextually given domain of quantification. Such a domain can be defined by a domain function  $F_d: L \times T \rightarrow 2^E$ . This function associates some sub-domain of  $E$  to any spatiotemporal coordinate. When an existential is uttered, the time and/or location about which the statement is made, i.e. the topic time/location, are fed to this function, and the resulting domain then acts as the argument of the generalized quantifier denoted by the pivot.

The existential predicate (realized as *be*, *yeS*, etc.) can be seen as denoting a function from generalized quantifiers to  $\{0,1\}$ , as in (29). A sample derivation of a Hebrew existential sentence is given in (30).

$$(29) \quad [[ \textit{yeS} ]] = \lambda P_{\langle \langle e, t \rangle, t \rangle} P(F_d(\langle l_c, t_c \rangle))$$

(30) **A sample derivation:**

- a. *yeS mayim xamim*  
*yeS water.pl hot.pl*  
'There is hot water.'
- b.  $[[ \textit{yeS} ]] = \lambda Q[Q(F_d(\langle l_c, t_c \rangle))]$
- c.  $[[ \textit{mayim xamim} ]] = \lambda P \exists x [\textit{hot} - \textit{water}'(x) \wedge P(x)]$

<sup>10</sup>These are schematic representations used for expository purposes, not levels of semantic representation. Whether or not structural semantic representations are useful for analyzing existentials is an issue I do not have anything to say about here.

$$\begin{aligned}
\text{d. } [[ \text{yeS mayim xamim} ] ] &= \lambda Q.[Q(F_d(\langle l_c, t_c \rangle))](\lambda P \exists x[\text{hot} - \text{water}'(x) \wedge P(x)]) = \\
&\lambda P \exists x[\text{hot} - \text{water}'(x) \wedge P(x)(F_d(\langle l_c, t_c \rangle))] = \\
&\exists x[\text{hot} - \text{water}'(x) \wedge x \in F_d(\langle l_c, t_c \rangle)]
\end{aligned}$$

On this analysis, the argument of the pivot is a contextually determined domain, not a lexical predicate. In some contexts, the relevant domain is the domain of quantification  $E$ . In many others it is not. The domain relevant to determining the truth conditions of an existential is determined from a time/location pair. Such a pair does not have to be given by context – it can be explicit in the utterance. Expressions denoting locations that cannot function as predicates but only as arguments/adjuncts are perfectly acceptable as arguments of the pivot, hence the grammaticality of (15) above, repeated here.

- (31) a. There's no beach where I'm from.  
b. \*No beach is where I'm from. (On intended meaning)

That the single NP in existentials is a predicate has been suggested in the syntactic literature by e.g. Williams (1980) and Safir (1987). However, their conception of predicate is purely syntactic. I have argued above (section 2) that predication must be defined on a semantic level as well as a structural one. No syntactic analysis I am aware of which claims the pivot is a predicate provides an explicit semantics for the construction to substantiate this claim. There is another semantic analysis of existentials available in the literature on which pivots are in some sense predicates, namely that found in McNally (1992, 1998). According to McNally, pivots denote nominalized functions in the sense of Chierchia and Turner (1988), and the existential predicate denotes a property of such nominalized functions, namely the property of being instantiated at some index. McNally's analysis is far too rich to be done justice here, and I believe there is much affinity between her analysis and the one developed here. However, there are important differences. The first is that on McNally's analysis pivots are arguments of an instantiation predicate, whereas I have assumed their role in the sentence is predicative. Second, the assumption that pivots denote nominalized functions has several consequences to which I do not wish to commit, such as a decompositional, adjectival or adverbial analysis of non-monotone and downward monotone quantifiers such as *no* or *exactly one*.<sup>11</sup>

Several issues remain unresolved here which should be resolved in a full analysis of existentials. First, as pointed out to me by Ariel Cohen, this analysis entails a treatment of bare plurals as generalized quantifiers, which again is controversial. Second, I have not discussed quantified arguments of pivots, as in (32).

- (32) There's a Bible in every hotel room.

As far as I am aware, there is no discussion of such cases in the literature. The interesting observation about them is that the quantified locative is interpreted with wide scope relative to the pivot. I do not discuss such cases here (they are discussed in Francez In preparation), but point out only that regardless of their exact formal treatment, quantified locatives provide a priori evidence for the view of existentials pursued here, since one interpretation available to them in copular sentences is not available to them in existentials. Thus, (33) can mean that there is a Bible (the Gideon Bible, say) copies of which can be found in every hotel room. No such reading is available for (32).

<sup>11</sup>There are also various predictions made by McNally's analysis which I believe are problematic. For discussion see Francez (In preparation)

(33) A Bible is in every hotel room.

To summarize so far, I have argued that existentials and copular locatives are different semantic predications. The main predicate in existentials denotes a set of contextual domains, whereas the main predicate in copular locatives denotes a set of entities. The existential attributes the property of containing or not containing a type of entity to the domain argument, whereas locatives attribute bring in a location to an entity. The range of meanings available for existentials is wider than that available to locatives, and the range of expressions that can occur as arguments of pivots is wider than that of expressions capable of acting as a predicate in a copular construction.

## 4 Application to the Hebrew data

The assumption that the pivot is a predicate and the semantics of existentials developed in the previous section make “pivotal disobedience” a misleading name for the observation made at the opening of this paper. If the pivot is not an argument of any predicate, as suggested here, then it is not expected to abide by patterns of argument realization.

But are there any grammatical principles regulating the behavior of pivots? This section argues that, viewed as a predicate, the behavior of the pivot turns out to be quite in line with general patterns of case and agreement in Hebrew.

### • Accusative case:

Pivots in Hebrew are marked with the accusative marker *et*. It is sometimes claimed that accusative marking is only optional in Hebrew.<sup>12</sup> However, pronominal arguments clearly show that this is not the case and accusative case is in fact obligatory.

- (34) a. haya        \*(et) ze Sam.  
be.pst.3.sg acc. that there  
‘They had that there / it existed there’ (Lit.: There is that there.)
- b. yeS oto/\*hu        ba-sinematik  
yeS acc.3sm/nom.3sm in.def-cinematik  
‘It’s showing at the Cinematik.’ (lit.: There is him in the Cinematik)

Accusative case in Hebrew is not restricted to semantic arguments, but occurs also on adjunct predicative expressions that are not predicates of individuals but of events. There are at least two such expression types in Hebrew: degree modifiers and cognate objects, exemplified in (35a) and (35b) respectively. Neither is selected by the main predicate of the sentence, both are predicative, and both are marked with accusative case.

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<sup>12</sup>Prescriptively, accusative marking in existentials is considered ungrammatical, or at least used to be considered ungrammatical.

(35) a. **Degree modifiers:**

racti        **et**    aseret ha-kilometrim Se-ha-rofe        himlic.  
run.pst.1.sg **acc.** ten    the-kilometers that-the-doctor recommended  
'I ran the ten kilometers that the doctor recommended'.

b. **Cognate objects:**

racti        **et**    ha-rica        haxi mehira Se-yaxolti.  
run.pst.1.sg **acc.** the-running most fast.f    that-can.pst.1.sg  
'I ran as fast as I could'.

Of course, the pivot is semantically quite different from degree modifiers and cognate objects. While the latter are predicates of events (see Mittwoch 1998 for arguments that cognate objects are event modifiers), in the semantics proposed in the previous section, pivots are predicates of domains. What these expressions all share however is that they are semantically predicative. Cognate objects and degree modifiers are predicates of events, not individuals. My suggestion then is that pivots are marked accusative because accusative is the default case in Hebrew (and other languages) for predicates of non-individuals.

• **Agreement:**

Viewed as an argument, and furthermore one that is marked with accusative case, the fact that the pivot in Hebrew triggers agreement on the existential lexeme is mysterious. Viewed as a predicate, it is not at all exceptional, since a rule of agreement with predicates is independently needed in Hebrew for copular clauses with the demonstrative *ze*, exemplified in (36).

(36) a. ha-drakon    ha-ze        **zot**    ha-xaya    haxi    go'alit Se-ra'iti        ba-xayim  
the-dragon.m the-this.m that.f the-animal.f the.most ugly    that-see.pst.1.sg in.def-life  
Seli.<sup>13</sup>  
of.1.sg

'This dragon is the ugliest animal I've ever seen in my life.'

b. igul        **zot**    cura        muzara.  
circle.m that.f shape.f strange.f

'A circle is a strange shape.'

While these examples do not *explain* agreement with the pivot in Hebrew, they provide motivation for it in the synchronic system, and demonstrate that whatever governs agreement with pivots is not a principle of argument coding. I believe that the reasons why Hebrew existentials show agreement are ultimately historical and stylistic. Ziv (1982) for example argues that the current status of the pivot reflects a gradual loss of subject properties. A full explanation for the possibility of agreement with the pivot calls for a serious diachronic and sociolinguistic analysis, which goes well beyond the scope of this paper.

To summarize, the existential pattern of agreement and case marking is not determined by systematic rules of argument realization, but results from the convergence of different factors, unrelated to one another. The factors affecting existential morphosyntax have to do with the realization of predicative elements in Hebrew.

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<sup>13</sup>[http://he.wikiquote.org/wiki/harry\\_potter](http://he.wikiquote.org/wiki/harry_potter)

## 5 Conclusions

I have argued that pivots' departure from patterns of argument realization should be traced to their semantics. The semantics of existentials does not involve locative predication, i.e. the attribution of a location to an entity. Instead, pivots are semantically predicates, used to attribute properties to contextually relevant domains. Seen as predicates, the morphosyntactic properties of pivots, at least in Hebrew, are more naturally related to larger patterns in the language.

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