24 Existential Sentences and Expletive *There*

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1 Introduction: what is an existential sentence?

2 Basic properties of existential sentences 3 Deriving the basic properties of existential sentences 4 On the Definiteness Effect in existential sentences: are there parameters in semantics? 5 Conclusion NOTES REFERENCES

The label ‘existential sentence’ can be misleading. On the one hand, it explicitly refers to a semantic property, i.e., to a sentence whose meaning is to predicate the (non-)existence of something; on the

other, it really points to a specific syntactic structure: in fact, just to limit the observation to English, although one can express the existence of something by using a predicate of existence like 'to exist' as in *unicorns exist*, the standard terminology would not refer to this sentence as an existential sentence; an existential sentence would rather be a sentence like *there are unicorns* or *there exist unicorns*. Establishing the defining structure of an existential sentence, thus, has become a major goal of syntactic theory (and a logical preliminary step toward a semantic theory of them). In this chapter, I will try to illustrate some basic aspects of the syntax of existential sentences and the problems related to the current treatments for them.[1]

In his *Philosophy of Grammar*, by relying on the comparison of many different languages, Otto Jespersen arrived at a major generalization which one can consider as a good starting point in this field of research:

(1) **Jespersen's generalization:**

"whether or not a word like *there* is used to introduce them [i.e. existential sentences] the verb precedes the subject and the latter is hardly treated as a real subject" (Jespersen 1924 : 155).

Of course, such a generalization does not exhaustively answer the questions raised by existential sentences; thus, for example one must still understand in which sense a subject of an existential sentence is "hardly treated as a real subject." Nevertheless, a first non-trivial syntactic property is singled out here: namely, that existential sentences involve (some kind of) subject–verb inversion. For example, we have the following cases in English, French, German, and Italian respectively:

(2)

a.	There are many girls.
b.	Il-y-a beaucoup des filles.
c.	Es gibt viele Mädchen.
d.	Ci sono molte ragazze.

Moreover, it must be highlighted that the distribution of elements like

English *there* or Italian *ci* has become a central issue of modern syntactic theory since at least the nineteenth century (cf. Graffi 2001 for comprehensive reference and extensive critical discussion). In particular, within transformational grammar the distribution of such an element has played a central role in the transition from rule-based grammars to principle-based grammars which characterized the field in the late 1970s, leading to Chomsky's (1981) landmark work. We will come back to these theoretical issues in . As a preliminary, let us review some basic properties of existential sentences by referring to English.

2 Basic properties of existential sentences

1 Introduction: what is an existential sentence? 3 Deriving the basic properties of existential sentences 4 On the Definiteness Effect in existential sentences: are there parameters in semantics? 5 Conclusion NOTES REFERENCES

As we just noted in the introduction, an existential sentence in English is a *there*-sentence with *be* (or *exist*) as a main verb:

(3) There are many girls.

In fact, existential sentences of this type are rare. Generally, existential sentences involve the so called 'coda', i.e., a PP/AP specifying the domain of existence of the individual or set of individuals whose existence is predicated, such as *in the garden* in the following sentence:

(4) There are many girls in the garden.

This more complex structure involving the coda has become the real test case upon which most theories have been shaped. In fact, the idea is that in a sentence like (4) *many girls in the garden* is an uninflected clausal constituent, i.e., a small clause, of the kind that one can find in sentences like the one in (5):[2]

(5) John saw [$_{SC}$ many girls in the garden].

In other words, the idea is that the PP in the coda is the real predicate of a *there*-sentence while *there* plays the role of a dummy

place holder for the structural subject position, technically an 'expletive'. By relying on similar considerations, practically all syntactic frameworks agree on this analysis. Moreover, the existence of copular sentences of the type in (6a) has been considered as an independent piece of evidence in favor of the small-clause analysis, since there are analogous cases involving subject raising from the lower uninflected clausal constituent in (5) yielding (6b):

(6)

a.	Many girls are [$_{SC}$ t in the garden].
b.	Many girls are seen [$_{SC}$ t in the garden].

In other words, a *there*-sentence has been considered as the counterpart of a copular sentence (cf. chapter 18) with the occurrence of expletive *there* in the higher subject position as opposed to the raising of the subject of predication. Formally, the following simplified structures are standardly accepted:

(7)

a.	There are [$_{SC}$ many girls in the garden].
b.	Many girls are [$_{SC}$ t in the garden].

Let us now take the standard structural representation in (7a–b) as correct and focus on some major properties of existential sentences. For the sake of simplicity, consider the following paradigm:

(8)

Let us now take the standard structural representation in (7a–b) as correct and focus on some major properties of existential sentences. For the sake of simplicity, consider the following paradigm:

(8)

a.	*Which girls do you think that there are [t in the garden].
b.	What do you think that there is [t in the garden].
c.	Which girls do you think that there are [pictures of t] in the garden.
d.	There aren't [many girls] in the garden.
e.	There aren't [pictures of [many girls]] in the garden.
f.	Ci sono [molte foto [delle ragazze]] nel giardino.
	there are many pictures of the girls in the garden
g.	*Ce le sono nel giardino.
	there them are in garden
h.	Ce ne sono [molte foto t] in giardino.
	there of-them are many pictures in garden
i.	To whom do you think that many girls are [indebted t]?
j.	*To whom do you think that there are many girls [indebted t]?
k.	There are many girls (in the garden).
l.	Many girls are *(in the garden).
m.	There are many girls angry with John/in the garden/* the cause of the riot.
n.	Many girls are angry with John/in the garden/the cause of the riot.
o.	There are [many girls impressed t by this theory].
p.	*There are [impressed many girls by this theory].
q.	John considers [there to be many girls].
r.	*John considers [there many girls].
s.	John considers [Mary to be the culprit].
t.	John considers [Mary the culprit].

(8)

g.	*Ce le sono nel giardino.
	there them are in garden
h.	Ce ne sono [molte foto t] in giardino.
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i.	To whom do you think that many girls are [indebted t]?
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The facts illustrated here constitute a core cluster of empirical facts specific to existential sentences. We can briefly review them here referring the reader to Moro (1997 : chapters 2, 3, appendix on the history of the notion of copula) and Moro (2000 : appendix) for a detailed discussion and references to the original sources for each case.

Let us start by considering movement of and from the subject of an existential sentence: (8a) shows that there can be no *wh*-movement of the subject if the subject is headed by *which*, while (8b) shows that there can be *wh*-movement of the subject if the *wh*-phrase occurring is *what*; (8c) shows that in fact a phrase headed by *which* can be moved out of a *there*-sentence provided that it is extracted from within the subject (as opposed to extraction from within the

coda, as in **which girls do you think that there are signatures in many pictures of t*); (8d) and (8e) show the very similar contrast concerning extraction with respect to Quantifier Raising (cf. (8a) vs. (8c)): a quantifier can be extracted across there only if it is moved from within the subject; equivalently the quantified subject cannot take scope over negation in (8d); (8f) and (8d) confirm the very same pattern observed in *wh*-movement and Quantifier Raising in the case of clitic movement in Italian: taking a sentence like (8f) as a baseline, one concludes that cliticization of the whole subject is impossible in (8g) while cliticization of a subpart of the subject is perfectly grammatical in (8h); (8i) and (8j) show that extraction from the XP (here an AP) constituting the coda of a *there*-sentence yields a degraded sentence if compared with extraction from an XP (here an AP) predicate of a copular sentence;[3] (8k) and (8l) let us conclude that while the PP in the copular sentence cannot be suppressed, the one in the coda of a *there*-sentence can; (8m) and (8n) constitute a further contrast between copular and *there*-sentences: (8m) shows that, unlike PPs and APs, DPs cannot play the role of a predicate in the coda of a *there*-sentence, while they can play such a role with copular sentences as in (8n);[4] (8o) and (8p) show that *there* cannot occur with passives, even if they also involve *be*; (8q) and (8r), finally, show that *there* cannot occur in infinitival contexts if *to be* is suppressed, unlike those cases of infinitival predication such as (8u) and (8v).

Before moving to the search for the derivation of these properties of existential sentences, we must also consider the type of subject that can occur in these constructions. In such a case, the situation becomes rather murky, especially since it involves semantic considerations which are presently under debate (for a general illustration and a source of references see Chierchia and McConnell-Ginet 2001). Consider now the following cases:

(9)

a.	There are [many girls] in the garden.
b.	There are [three girls] in the garden.
c.	There are [no girls] in the garden.
d.	There are [girls] in the garden.

(9)

e.	*There are [the girls] in the garden.
f.	*There are [most girls] in the garden.
g.	*There is [every girl] in the garden.

As far as I am aware, there is no undisputed theory which can exhaustively derive the types of determiner which can occur in the subject position of a *there*-sentence from a principled theory.[5] Superficially, however, one can capture the basic intuitive property emerging from (9) by adopting Higginbotham's (1987) terminology and say that only 'adjectival' determiners can head the subject of an existential sentence.[6] Although, as noted, we cannot go through this issue in detail, it could be useful to reproduce here the semantic interpretation of *there*-sentences developed in Moro (1997 : chapter 3), which relies on Higginbotham's terminology. Maintaining the discussion at a rather informal level, one can consider a *there*-sentence as the minimal syntactic structure which can 'turn' a DP into a sentence. More explicitly, a noun phrase like *many girls* cannot per se be considered as a sentence; witness the ungrammaticality of **John says that many girls*; nevertheless, a sentence like *there are many girls* is in fact interpreted as if it were a sentence like *girls are many*. In other words, a *there*-sentence takes a DP and forces us to interpret it as equivalent to a copular sentence predicating D^0 of the NP contained in it. From this perspective, the reason why only certain D^0s, namely the adjectival D^0s, can occur in the subject of a *there*-sentence should be less mysterious. The role of *there* is to ensure the proper syntactic condition to force such a 'splitting' process of the DP (and to anticipate the restriction expressed in the coda as a pronoun, if there is any). To give a simple example, the sententence *there are many girls* is interpreted as *girls are many*: this *is* the existential meaning in a syntactic sense.[7] On the other hand, a sentence including a coda like *there are many girls in the room* is a simple extension of the first, i.e., it is interpreted as *girls in the room are many*. The reason why there is this double possibility is most arguably due to the independent reason that when the subject is postverbal it is necessarily focused (see Belletti 1999a and Longobardi 1999 for extensive discussion on postverbal focus in general; see also Quirk et al. 1985 for a

discussion of focus as related to *there*-sentences). A simple example should clarify this hypothesis: a sentence like *there aren't many girls but boys* is grammatical whereas **girls aren't many but boys* is not, showing that *girls* is focused only in the *there*-sentence (unless of course preverbal *girls* is emphasized and moved to the proper slot in the left periphery, as in GIRLS *t are many, not boys*). We will leave the semantic issue aside here, referring the reader once again to the cited bibliography for references and tentative proposals, and assuming that the existential meaning is the simplest way to 'make a sentence out of a DP'.[8]

All in all, we can go back to Jespersen's generalization in (1) and give a (partial) explicit characterization of it. Let us factorize the defining properties of existential sentences that we have empirically discovered:

(10) The defining properties of existential sentences:

- **(i)** Movement of the subject is impossible.
- **(ii)** Movement from within the subject is possible.[9]
- **(iii)** The determiner of the subject has an adjectival character.

Each property has an independent life, and it is only when the defining properties in (10) are *simultaneously* present in a given minimal structure that the output qualifies as an 'existential sentence'. For example, in English, the preverbal subject of an embedded clause displays the first property in (10) when a *wh*-phrase occupies the intermediate SPEC-CP position (see Rizzi 1990b for a principled explanation):

(11) *Which student do you know [which book C^0[t read t]]?

Turning now to the second property in (10), it is well known that in Italian, clitic extraction is possible from the subject position of a small-clause complement of a verb like *ritenere* (believe), as noted by Burzio (1986), among others:

(12)

Gianni	ne	ritiene	[[molti t]	intelligenti].
	of-			

(12)

Gianni	them	believes	many	intelligent

The third property in (10), instead, is manifested in constructions like the following:

(13) John hasn't met [many [girls]].

Simplifying somewhat, let us just focus on the interpretation of the determiner *many*. Here the adjectival character of the D^0 (in the sense of Higginbotham 1987) can be captured by means of the following paraphrase: 'It is not the case that the girls John met are numerous (i.e. many in number)'. Now, note that in a sentence like *There aren't many girls*, the same kind of interpretation of *many* occurs (i.e., "It is not the case that the girls are numerous"). There is therefore a sense in which (13) is not a minimal structure in which *many* functions as an adjectival predicate: in (13), there is at least one other predicate, namely *meet* occurring in the same sentence. Again, the conjecture defended here is that it is only when the defining properties in (10) are simultaneously present in a given minimal structure that the output qualifies as an 'existential sentence'. In such a case, they interact with each other, yielding the only possible interpretation where the D^0 is predicated of the NP. This is the explicit, i.e., formal correlate of Jespersen's generalization.[10]

3 Deriving the basic properties of existential sentences

1 Introduction: what is an existential sentence? 2 Basic properties of existential sentences 4 On the Definiteness Effect in existential sentences: are there parameters in semantics? 5 Conclusion NOTES REFERENCES

The cluster of facts reproduced in (8) raises a pointed question: what principles of Universal Grammar generate these apparently unrelated facts and let children acquire them without specific instructions?[11] As noted in the introduction, the theory of the distribution of *there* played a crucial role in shaping the Principles and Parameters framework from its early stage in Chomsky (1981). In this section I will sketch the major lines of reasoning that directed the development of this field and compare two radically alternative

proposals that are presently under debate.

3.1 The standard theory: **there** as a place holder for the subject

The first point to be observed is that ever since Milsark (1974 ; see also Milsark 1977), the two following sentences have been considered as generated from the same underlying structure:

(14)

a.	There are girls in the garden.
b.	Girls are in the garden.

In the analysis proposed by Milsark, the two sentences were roughly considered as synonymous: in both cases, it is said that girls have the property of being in the garden. In other words, according to these analyses, the element *there*, always regarded as a noun phrase, had no semantic role in a sentence like *there is a man in the room*. This intuition was strongly supported by the fact that this special noun phrase cannot discharge the function of argument (say, subject or object) in cases like the following:

(15)

a.	John likes books.
b.	*There likes books.
c.	*John likes there.

The conclusion was clear enough: although *there* can occur where argumental DPs generally occur, namely in the subject position, it has no semantic content. The ungrammaticality of the above examples was then immediately explained as a violation of the reasonable assumption that semantically null elements are incompatible with theta-roles. From this, an important question naturally arose: what forces *there* to show up in a sentence like *there is a man in the room*? In other words, what principle of grammar rules out a sentence like the following?

(16) *Is a man in the room.

The standard treatment of this puzzle came in the shape of what

was called the ‘Projection Principle’, that is to say, a principle requiring lexical entries to be respected (at all levels of representation). A simple case like the following illustrates this principle:

(17)

a.	John likes books.
b.	*Likes books.
c.	*John likes.

Only the first sentence is grammatical because only in the first sentence is the lexical entry of *like* respected. This verb, in fact, requires two arguments: in this case *John* and *books*. In the ungrammatical cases one of the two arguments is missing, and so the Projection Principle is violated. Clearly, the same principle could not immediately be applied to a sentence like **is a man in the room*. In this case, there are no missing arguments; rather they are misplaced. Immediate confirmation of this comes from the fact that a sentence containing exactly the same lexical elements arranged in a different way, like *a man is in the room*, is perfectly grammatical: what this means is that the ungrammaticality of **is a man in the room* cannot be a question of the incomplete realization of the arguments of a lexical head. Although the Projection Principle was clearly not sufficient to account for such cases, there was little readiness to acknowledge the fact that it was simply irrelevant to the phenomenon in question; thus the issue became one of refining the Projection Principle so that it would encompass the offending data. The crucial step was to extend it by exploiting an essential postulate of the theory of clause structure, namely that grammatical functions are defined on the basis of configuration. Thus, the Extended Projection Principle was formulated by Chomsky (1982 : 10; see also Chomsky 1981 : 28ff.); it required that all sentences have a subject of the predication (at least) at LF. Thus, to the question of why *there* is required in a sentence like *there is a man in the room* an immediate answer was now available: because *there* satisfies the Extended Projection Principle. The function of this semantically null element was then considered to be that of holding the place of the subject of the predication; consequently, it was termed ‘expletive of the subject position’ or, more simply, ‘subject expletive’.[12]

Stowell's (1978) seminal analysis of *be* as a raising verb allowed the formalization of such a relation in the following way:

(18) There$_i$ is [$_{SC}$ a man$_i$ in the room].

The basic relation of predication is contained in the small clause where the subject *a man* is linked to the predicate *in the room*. *There* is inserted (at s-structure) as an alternative to subject DP raising. Coindexing was introduced as a device for indicating that *there* and *a man* have no independent referential properties.

This analysis of the distribution of *there* based on the assumption that the copula selects a small clause has met with general acceptance and has established itself as the standard analysis. It is nevertheless important to notice that an alternative theory has been discussed in the literature since its original formulation in Williams (1984) (see for example Higginbotham 1987 ; Reuland and Ter Meulen 1987). This alternative is based on the idea that in a *there*-sentence, the complement of the copula is a noun phrase, not a small clause, while *there* is still regarded as a semantically null place holder of the subject position:

(19) There [is [a man]].

Crucially, in this analysis the idea that *there* plays the role of a subject is pushed to the limit. According to this analysis, *there* is not holding the place of a displaced subject: rather, *there* indeed is the subject, and correspondingly the DP following the copula is analyzed as a predicate. In other words, in a *there*-sentence like *there is a prime number*, the grammatical function of *a prime number* would be exactly the same as the one it has in *seven is a prime number*: in both cases *a prime number* is analyzed as predicate.

As noted before, the analysis of the distribution of *there* has played a central role in the development of generative grammar, although regarding it as an expletive has not been without cost. Let us briefly review the major stages in this development, which all share the fundamental hypothesis that *there* be the expletive of the subject of predication. Perhaps the most dramatic illustration of the shift from constructive rule system to selective principles comes from Chomsky's (1981) analysis of the distribution of *there*. Chomsky proposed that *there*-insertion should be regarded as totally free in

noun phrase positions and that ungrammatical cases could be ruled out by the interaction of independent principles. This proposal was highlighted as one of the first and most notable examples of modular interaction:

(20) "insert *there* anywhere" (Chomsky 1981 : 88)

Chomsky's idea was that the following examples are just freely generated under (20) and must be ruled out on the base of independent principles:

(21)

a.	*John likes there.
b.	*There is raining.

What are the independent principles ruling out these sentences? The first sentence is essentially a violation of the lexical entry of *like*, which requires it to have two arguments. As for the second case, it could be ruled out by assuming that the lexical entry of *there* requires it to inherit number from an associated DP; since there is no DP at all, the sentence has to be ruled out. Notice that the assumption that *there* has number appears to be independently necessary in view of cases like the following, where the verb agrees with *there* (if, of course, one wants to maintain that agreement takes place under some form of SPEC-HEAD relation):[13]

(22)

a.	There is a girl in the room.
b.	There are girls in the room.

A very different proposal to rule out the ungrammatical occurrences of expletive *there* was suggested by Chomsky (1986b), who pushed to the limit the idea that *there* is a semantically vacuous element. His central argument concerns the interaction of *there* with the Principle of Full Interpretation, which requires that at a certain level only legitimate objects be visible. Since by definition expletives do not have semantic content, they are not legitimate at LF, where grammatical structures undergo interpretation. For this reason, it

was proposed that *there* is wiped out at LF and replaced by the DP it is coindexed with. Thus, at LF a *there*-sentence such as (22a) would end up being identical to its raising counterpart:

(23) A girl is [t in the room].

This analysis, generally referred to as the 'expletive replacement hypothesis', had at least three major consequences. We will briefly deal with each of them. The most important consequence is that the distribution of *there* is seen to be determined by the independent principles governing chain formation. The associated DP must move to substitute *there*, thus creating a chain: if locality is not respected in each step of the chain, then the sentence will be ruled out. We can now consider once again the following cases (taken from Chomsky 1991) from the new perspective:

(24)

a.	There is a man in the room.
b.	There are men in the room.
c.	There seems t to be a man in the room.

According to Chomsky (1991) they are grammatical because *a man* and *men* can move to the subject position replacing *there*; witness the grammaticality of cases like:

(25)

a.	[A man] is t in the room.
b.	[Men] are t in the room.
c.	[A man] seems t to be t in the room.

On the other hand, cases like the following are to be ruled out as instantiating illicit movements:

(26)

a.	*There seems that a man is in the room.
b.	*There seems that John saw a man.
c.	*There was thought that pictures of a man were on sale.

In other words, the process of LF replacement of the associated elements yields either ECP (26a–b) or Subjacency violations (26c), as indicated by independent cases such as the following:

(27)

a.	*[A man] seems that t is in the room.
b.	*[A man] seems that John saw t.
c.	*[A man] was thought that [[pictures of t] were on sale.

Of course, *there* would still need to inherit number from a DP, but otherwise it was claimed that its distribution can simply be regarded as the result of a more general phenomenon, i.e., chain formation. This was undoubtedly a considerable advance, but, as Chomsky himself explicitly noticed, a major exception survived (see also Borer 1984a) which challenged the system. Consider a pair like the following:

(28)

a.	*There seems a man to be t in the room.
b.	[A man] seems t to be in the room.

Apparently, there is no way to account for the ungrammaticality of (28a) in terms of illicit movement, since movement of *a man* from this position to the matrix clause subject position is fully licensed, as (28b) clearly shows.

A second advantage implied by the expletive replacement analysis concerned Binding Theory. It was soon realized that the hypothesis of *there*-insertion yields a violation of Condition C of Binding Theory, which requires referential expressions not to be bound by an element in an A-position. If we assume that expletives are to be replaced by their associated elements, the question concerning the violation of Binding Theory Condition C by *there*-insertion is solved. The trace counts as an anaphor, and so at LF (where Binding Theory checks the structure) there is no violation of Condition C; rather Condition A, which requires anaphors to be bound (in a local domain), is satisfied.

A third major consequence of this analysis became apparent later,

within the so-called 'Minimalist' approach (see Chomsky 1995c and earlier unpublished references cited there). Indeed, expletive replacement has become a fundamental support to this model, as it illustrates the effect of the 'Principle of Greed', which is central to the new system based on 'economy principles'. We will briefly reproduce the essential intuition by considering a sentence like the following (see Chomsky 1993 : 32ff., among many other possible sources of citation of the very same case):

(29) There seems to [$_a$ a strange man] that it is raining outside.

In this sentence, the replacement of *there* by *a man* "would yield an intelligible interpretation (something like 'There is a strange man to whom it seems that it is raining outside')." However, "derivations are driven by the narrow mechanical requirement of feature checking only, not by a 'search for intelligibility' or the like . . . benefiting other elements is not allowed" (Chomsky 1993 : 33). Thus, this process is not permitted and "the derivation converges with an unintelligible interpretation."

The original hypothesis of 'expletive replacement' has been slightly refined in the Minimalist models (see again references in Chomsky 1995c and many more recent works since then). Following Williams's (1984) original observation, it was realized that *there* could not simply be wiped out at LF. Consider the following contrast:

(30)

a.	There aren't many men in the room.
b.	Many men aren't in the room.

There appears to play the role of a scope marker blocking the wide scope reading of *many men* which is available in the other sentence. The *there*-sentence cannot mean the same as the raising counterpart: in particular, it cannot mean that many men are not in the room. Thus, since scope is assigned at LF, *there* cannot be wiped out and the *there*-sentence cannot be exactly like the raising counterpart. Chomsky then proposed to reduce the replacement of *there* by its associate DP to a process of *there*-affixation which does not eliminate *there* from LF:[14]

(31) [There[a man]] is [t in the room]].

This analysis was considered to solve the problem posed by Williams (1984), and the proposed structure has subsequently met with general acceptance. Even so, certain data remained unexplained, including the ungrammatical **there seems a man to be in the room*, but these have generally been dismissed as 'exceptions'. As a further puzzle, Chomsky (1991) reports an original observation by Kenneth Safir, who discovered the following contrast:[15]

(32)

a.	[How many men] do you think that there were t in the room?
b.	*[How many men] do you think that t were in the room?

The second clause shows a typical *that*-trace effect: the subject of an embedded sentence cannot be extracted across an overt complementizer. The obvious question is why the presence of *there* makes any difference, especially since in this view it is affixed to the subject at LF.

The analysis presented here, based on the idea that *there* is a place holder for the subject of predication, has been adopted as the standard one in modern syntax. Moreover, it has been adopted for many other languages, such as Italian. This extension goes back at least to the pioneering work of Burzio (1986) on the distribution of the equivalent of English *there*, namely *ci*, which seemed to confirm and refine the central intuition that *there*/*ci* is a subject expletive. For example, the following pair in Italian is also generally analyzed as stemming from the same underlying structure, paralleling the case of English *there*:

(33)

a.	Molte	copie	del	libro	sono [t	nello	studio].
	many	copies	of the	book	are	in the	studio
b.	Ci	sono	[molte	copie	del	libro	nello	studio].
	there	are	many	copies	of the	book	in the	studio

The major difference between the two languages is that *ci* is a clitic while *there* was standardly analyzed as a full phrase.[16] All in all, we have seen that the standard theory rests on three crucial assumptions: first, the topmost position of the clause structure (SPEC-IP) is where

the logical role of subject of predication is defined; second, *there* is a semantically null element; third, any *there*-sentence is associated with a copular sentence where the subject is raised from the lower position.

If one maintains such a standard theory, which in fact is shared by most syntactic theories of the twentieth century, including Jespersen (1924) and Bloomfieldian linguists (cf. Graffi 2001 and references cited there), it would be an easy exercise to conclude that the cluster of facts illustrated in (8) would go uncaptured, or at least would not be captured in a unitary way.[17] In the remainder of this section, an alternative theory will be briefly illustrated which aims at deriving the major syntactic properties of existential sentences from a principled framework, and in a unitary fashion. An important caveat should be made explicit here: the alternative theory I am going to introduce is not widely accepted; in fact it reflects only a minority view: nevertheless, it has been referred to in quite a number of works. Omitting it would make this chapter less exhaustive.[18]

3.2 An alternative theory: there as a place holder for the predicate

The alternative theory presented here relies heavily on the discovery of so-called 'inverse copular sentences' within the unified theory of copular sentences. Since there is a dedicated chapter on this topic in this collection (chapter 18), I will not present this theory in detail, and recommend the interested reader to refer to that chapter or to the original sources.[19] Here I will simply sketch out the essentials of the unified theory of copular sentences, focusing on those aspects which are conceptually strictly related to the alternative treatment of *there*-sentences. The core hypothesis of the unified theory of copular sentences is that, contrary to the standard 'Fregean' assumptions (which go back at least to Chomsky 1981, 1986b , and according to which SPEC-IP can only host the subject of predication), SPEC-IP can also host predicates, provided that they are realized as DPs, a case that can only occur in copular constructions. To illustrate this idea with a simple example, consider the following two sentences:

(34)

a.	Some pictures of the wall are [t the cause of the riot]. (canonical)

(34)

b.	The cause of the riot is [some pictures of the wall t]. (inverse)

These sentences are generated by the same underlying structure by raising either the subject or the predicative DP to the preverbal position, yielding a canonical and an inverse copular sentence respectively. Despite the fact that superficially the two sentences are identical, i.e., they are both sequences of the type [DP V DP], it can be shown that they have very different syntactic properties. I will not go through an illustration of these here (see again chapter 18). The important fact is that inverse copular sentences provide us with the key empirical argument for a reconsideration of *there*-sentences. This is because inverse copular sentences imply that there is no longer need for us to consider *there* as a place holder of the subject of predication: rather, there is a second logical possibility available now, namely that *there*-sentences belong to the more general class of inverse copular sentences. Formally, the following structure holds, where, contrary to the standard analyses previously reviewed here, *there* is analyzed as a raised place holder of the predicate and not as a place holder for the subject inserted in the position where it surfaces:[20]

(35) There are [many girls t].

Before briefly commenting on the advantages of this proposal with respect to the challenge posed by the facts in (8), a residual question remains concerning the coda. If one adopts the proposal that *there*-sentences are inverse copular sentences, there is only one option available, namely that a PP in the coda is an adjunct (since *there* is the place holder of the predicate). In fact, since a PP can be an adjunct of a clausal structure or of a nominal structure, there are two structures available. Taking, for example, a PP like *in the garden*, in a sentence like *there are many girls in the garden*, we have the following two options:[21]

(36)

a.	[There are [many girls t]] . . . [in the garden].
b.	[There are [[many girls [in the garden]] t]].

How can this alternative theory explain the facts in (8)? We will briefly review them and, once more, refer to the more general source in Moro (1997). As a guideline, recall that the central proposal here is that *there* is

a place holder of the predicate, not of the subject of predication. Let us start from the more complex facts, namely movement restrictions on the subject of existential sentences. Consider the examples from (8a) through (8h): movement of the subject is impossible, movement from within the subject is possible.

That movement of the subject is impossible (with *wh*-movement, Quantifier Raising, and clitics, as in (8a) (**which girls do you think that there are [t in the garden]*), (8d) (*there aren't [many girls] in the garden*), and (8g) (**ce le sono nel giardino*– there them are in garden)) is not surprising if one adopts the idea that *there*-sentences are inverse copular sentences. Indeed, this is a property characterizing the subject of all inverse sentences (cf. **which pictures of the wall do you think that the cause of the riot is* stemming from the inverse copular sentence *you think that the cause of the riot is some pictures of the wall*, where the predicate *the cause of the riot* is moved out of the small clause to SPEC-IP, leaving the subject *some pictures of the wall* in situ). Essentially, the prohibition on extracting the subject of an inverse copular sentence can be explained by a theory that regards activation of the agreement features on a governing head to be a way of meeting locality conditions on movement, much in the sense that the so-called '*que-qui* rule' is explained as a way of satisfying the ECP in French in sentences like *l'homme que je pense t que/*qui Jean croit t qui/*que t viendra* (the man that I think that John believes that will come; see Rizzi's 1990b version of the ECP; see also Moro 1993b for some further refinements of the original proposal, and chapter 18 for a defense of a two-principle theory of locality). Since the copula already agrees with the raised predicative noun phrase (*the cause of the riot*), movement of the subject (*which pictures of the wall*) as a whole would violate the ECP. Similarly, the impossibility of moving the whole subject of a *there*-sentence can be explained in the same way. Movement is blocked since the copula already agrees with the raised predicate, namely *there*.

The fact that movement from within the subject is possible is indeed less direct to explain. The relevant examples are (8c) (*which girls do you think that there are [pictures of t] in the garden*), (8e) (*there aren't [pictures of [many girls]] in the garden*), and (8h) (*ce ne sono [molte foto t] in giardino*– there of-them are many pictures in garden). Why is movement from within the subject of a *there*-sentence allowed? After all, extraction from the subject position is banned in inverse

copular sentences (cf. **which wall do you think that the cause of the riot was a picture of*): if *there*-sentences are indeed inverse copular sentences, why should it be possible? The crucial step to remember is that while extraction of the subject is prohibited by the ECP, movement from within the subject is banned by (some version of) the Subjacency condition (cf. chapter 18 for a detailed discussion). This suggests that raising *there* or *ci*, as opposed to a full phrase like, say, *the cause of the riot*, affects the relations to which Subjacency is sensitive in inverse copular constructions. Although I cannot go through the proposal in a detailed fashion, I would like to illustrate the major lines of reasoning that can be followed to solve this puzzle. Subjacency violations essentially amount to moving across a(n argumental) constituent which is not selected by a head in the proper configuration. The classic examples are extraction from an adjunct (cf. **who do you think that John screamed [while seeing a picture of t]*) or a preverbal subject (**who do you think that [a picture of t] frightened John*): in both cases, the constituent is not selected by a governing head and Subjacency is violated. Why should raising of *there* or *ci*, as opposed to a full phrase like, say, *the cause of the riot*, change the situation? There are two crucial observations to single out: first, predicates have selective capacities; second, the copula is not a predicate, but rather the expression of aspectual and modal aspects of clause structure in the traditional Aristotelian sense. Now, consider *there* or *ci* as opposed to a full phrase like, say, *the cause of the riot*. In the first case, we are assuming them to be predicates, while in the second case the predicate is rather the head *cause*, which is embedded in the larger determiner phrase. Thus, it is not unreasonable to assume that when *there* or *ci* is raised to the preverbal position, the lower subject is c-commanded by the predicate, whereas it is not when *the cause of the riot* is raised. Although the technical details have not been presented here, this should suggest why the theory that regards *there*-sentences as inverse copular sentences is more promising than the standard theory. Let us move on and consider the other empirical facts observed in (8): it will be clear that these further cases can be derived directly from the alternative theory.

The fact that extraction from the PP in the coda of a *there*-sentence is degraded as in (8i), as opposed to a copular sentence in (8j), follows immediately, since the PP is an adjunct rather than the predicate of the small clause as in the corresponding copular sentence. The fact that the PP can be omitted in a *there*-sentence

such as (8k), while it must be present in a copular sentence such as (81), follows immediately if we take *there* to be a place holder of the predicate: the PP can be omitted simply because it is not a predicate as opposed to the case of the copular sentence; rather, it is an adjunct and thus it can be omitted by definition. The fact that a DP (as opposed to APs and PPs) cannot be in the coda of a *there*-sentence such as (8m), while it can occur as a predicate in a copular construction such as (8n), follows, since the DP in the coda is not a predicate but an adjunct and we independently know that DPs cannot occur as adjuncts unless marked by a predicative marker such as *as* (cf. *John phoned *(as) a doctor*). The fact that *there* cannot be inserted in passives unless the subject is raised to the lower preverbal head position, as in (8o) vs. (8p), is a misinterpretation of the facts: the reason why (8o) is grammatical is that the phrase *impressed by this theory* can be interpreted as an adjunct in the coda of the *there*-sentence or as a part of a complex noun phrase containing a reduced relative clause; in fact, the subject of the *there*-sentence itself can be *many girls impressed by this theory* (cf. *many girls impressed by this theory can be easily found in this country*). The fact that the copula cannot be omitted in infinitival *there*-sentences, as in (8r) as opposed to (8q), is a general property of inverse copular sentences: for the predicate to cross over the subject, a landing site must be provided by the copula as in all inverse copular sentences (cf. *John believes the culprit *(to be) Mary* and many more examples discussed in chapter 18); note that the copula must not be present when the predicate is in situ, as in (8s–t). Finally, also note that the major challenging fact for the standard theory noticed in (28a) (**there seems a man to be t in the room*) is also solved. The reason why this sentence is ungrammatical is that the subject and the predicate cannot simultaneously raise out of a small clause (whether or not an adjunct PP occurs):

(37) *There seems [a man to be [t t]] . . . [in the room].

This is not a peculiarity of *there*-sentences, as indicated by the totally symmetric example with full predicative noun phrases:

(38) *The cause of the riot seems [some pictures of the wall to be [t t]].

If the predicative noun phrase *the cause of the riot* is raised, the subject *some pictures of the wall* must stay in situ: they cannot

simultaneously be moved for locality reasons (again for the ECP reasons just mentioned). Note that the fact that *there* agrees with the subject can be considered as a reflex of number (and Case) agreement between subject and (certain types of) predicative nominals, as in *John is the culprit*(**s*)/*the culprit*(**s*) *is John* (see Moro 1997 and references cited there for critical discussion of this issue).[22]

All in all, this alternative theory regarding *there*-sentences as instances of inverse copular sentences appears to solve some questions in a rather natural way.[23] Of course, this approach generates some new questions that the standard theory did not raise, such as why the canonical associate of the inverse *there*-sentence does not have an existential meaning. In other words, if *there are girls* is the inverse counterpart of the canonical *girls are there*, exactly as *the cause of the riot is a picture of the wall* is the counterpart of *a picture of the wall is the cause of the riot*, why doesn't the canonical sentence containing *there* have an existential reading?[24] I will not go through the proposal for such a phenomenon: for our limited purpose here, it will be sufficient to note that clearly the syntactic structure of the canonical counterpart of a *there*-sentence does not instantiate the 'conspiracy' of factors that constitute the defining properties of an existential sentences (cf. (10)). However, since a full treatment will involve the preliminary discussion of many semantic aspects of existential sentences, I will simply recommend the willing reader to the various bibliographical sources and discussions in Milsark (1974, 1977); Safir (1985b); Lumsden (1988); Moro (1997), among others. We can simply conclude our quite limited discussion here by observing that, from a semantic point of view, a *there*-sentence is nothing but the minimal syntactic device that is able to turn a DP into a clausal structure where the NP is predicated of the D^0 (of course, when the latter has an adjectival character in the intended sense).

Summarizing, in this section we have seen some major steps toward the reduction of the complex syntax of existential sentences to a principled framework. We have seen that there are at least three different proposals. A first proposal, stemming from Milsark's (1974) original analysis and further developed by Chomsky in many phases of his work up to the Minimalist approach, has undoubtedly become the standard one: according to this, *there*-sentences are the non-

raising counterparts of copular sentences. A second proposal, originally made by Williams (1984) and supported by Higginbotham (1987), among others, considers *there*-sentences to be 'transitive sentences' in that the copula is followed by an argumental noun phrase rather than a clausal constituent. A third proposal, originally elaborated in Moro (1991, 1997), proposes that *there*-sentences are instances of the much broader class of inverse copular sentences. The first two proposals can be considered similar and akin to the Structuralist tradition in that in both cases *there* is regarded as the expletive of the subject of predication, whereas in the third proposal *there* is regarded as a raised predicate. Of course, none of the theories exhaustively explains all problems and issues concerning *there*-sentences: nevertheless, they constitute a step toward a better understanding of these issues, and more generally they illustrate some central topics of syntactic theory. In the next two sections, I will concentrate on a specific comparative problem raised by existential sentences and indicate some further possible extensions related to the exploration of the syntax of *there* and *ci*.

4 On the Definiteness Effect in existential sentences: are there parameters in semantics?

1 Introduction: what is an existential sentence? 2 Basic properties of existential sentences 3 Deriving the basic properties of existential sentences 5 Conclusion NOTES REFERENCES

A cursory survey across languages shows that existential sentences raise a sharp comparative issue. Let us focus on the following well-known contrast, which is a word-by-word correspondence between English and Italian:

(39)

a.	*There is John in this garden.
b.	C'è Gianni in questo giardino.

More generally, a DP headed by a definite article or by a universal quantifier or by a proper name cannot be the subject of a *there*-sentence, whereas it may be one in *ci*-sentences. Why are existential sentences different across languages? Traditionally, the

restriction which rules out the offending case in English has been formulated by appealing to semantics:

(40) "sentences of the form *there is definite noun phrase* . . . are violations of the surface rules of semantic interpretation rather than of syntactic rules, it appears" (Chomsky 1973 ; reproduced from Chomsky 1977a : 52).

Since the notion of 'definiteness' plays the crucial role here, this restriction has been called the 'Definiteness Restriction' and the corresponding phenomenon the 'Definiteness Effect'.[25]

Why does the Definiteness Restriction fail to hold in Italian existential sentences? In Moro (1993a) I tentatively asked whether one could sensibly talk of comparative semantics along with comparative syntax and correspondingly of a semantic parameter. Is such a notion plausible? Of course, this is not the place to approach such a fundamental question; nevertheless the specific problem posed by the contrast between English and Italian, and the citation from Chomsky, bring out the importance of this issue. Before attempting any explanation, let us begin by considering the issue from an abstract point of view and asking what kind of answer modern linguistics might in principle allow. Comparative grammar shows that cross-linguistic variations are to be traced back to the interaction of a few independent parameters set by the child on the sole basis of overt evidence. The following citation from Chomsky (1986b) illustrates the current theory:

There may be general principles that determine how the switches [of a parameter] are set, for example, the subset principle discussed by Berwick 1982 , which states that if a parameter has two values + and –, and the value – generates a proper subset of the grammatical sentences generated with the choice of value +, then – is the "unmarked value" selected in absence of evidence; this is a necessary and sufficient condition for learning from positive evidence only, insofar as parameters are independent. (Chomsky 1986b : 146)

So for example, the pro-drop parameter is set by the occurrence of sentences which do not have a phonologically realized subject, by the presence of inverted subjects, etc. It may also be that in the last resort, the proper value of the parameter is decided by the presence

of some overt (string of) elements.

If we maintain that the restriction ruling out definite subjects in English is semantic, what kind of evidence should we expect to find that might overtly differentiate the two languages? In other words, how does the child know that definite noun phrases are prohibited in English and allowed in Italian in the context under discussion? Suppose we assume that the application of the Definiteness Restriction is parametric. The subset principle leaves only one option: the unmarked value is that this restriction does apply, for a grammar containing it would generate a proper subset of sentences of a grammar not containing it. Universal Grammar provides the child with the positive value of the parameter. The English child will never have to change it. The Italian child, instead, would eventually shift to the negative value (i.e., the restriction does not apply), since that child hears sentences violating it.

It seems then that we are obliged by this type of reasoning to conclude that natural languages do contain parametric variation concerning semantic restrictions, that is, 'semantic parameters'. Whether or not this conclusion is tenable is hard to decide and definitely an empirical matter. More generally, the possibility of semantic parametrization has not been exhaustively investigated yet, as far as I know, and the issue is still entirely open. Indeed, there may well be a priori reasons for not adopting this view. For example, in the recent Minimalist framework stemming from Chomsky (1995c), it has been proposed that, apart from Saussurean arbitrariness, the field of language variation is "limited to lexical differences, specifically, to differences in the features of the lexical elements that occupy the functional category nodes" (Marantz 1995b : 372; see also Borer 1984a ; Manzini and Wexler 1987). On the other hand, other theories have been put forward which purport to show that parametric variations take place in semantics (see, for example, Chierchia 1995c and references cited there).[26]

All in all, to conclude this section, whose major aim is just to highlight the theoretical impact of a simple empirical fact – the contrast in (39) – I would like to observe that the theory of *there*-sentences that considers them as instances of inverse copular sentences suggests a possible treatment of the lack of the Definiteness Effect in Italian: it can be regarded as a consequence of an independent syntactic parameter, avoiding recourse to the

notion of a semantic parameter. Let us illustrate the major lines of reasoning. From this new perspective a sentence like *c'è Gianni in giardino* turns out to be similar to *lo legge Gianni un libro*, which is arguably generated as a clitic left dislocation structure in the sense of Cinque (1990c), involving a specifier of a Top^0 position in the left periphery of the clause structure (see Rizzi 1997):

(41)

a.	Un	libro,	Gianni	lo	legge.	
	a	book	Gianni	it	reads	
b.	In	giardino,	Gianni	c'	è.	
	in	garden,	Gianni	there	is	

The surface order is obtained by subject–verb inversion (42a–b) involving pro (cf. *pro telefona Gianni* (pro telephones Gianni)) followed by further remnant movement of the lower IP constituent across the topic phrase (42c–d):

(42)

a.	Un	libro,	pro	lo	legge	Gianni.
	a	book		it	reads	Gianni
b.	In	giardino,	pro	c'	è	Gianni.
	in	garden,		there	is	Gianni
c.	pro lo legge Gianni . . . un libro t.					
	it Gianni reads a book					
d.	pro c'è Gianni . . . in giardino t.					
	in garden, Gianni there is					

Note that extraction from the postverbal constituent in a clitic left dislocation yields the Subjacency violations we observed in (cf. (8j)), supporting the analogy proposed here:

(43)

a.	Di	quale autore	dici	che	Gianni	legge	[un libro t]?
	of	which author	do you say	that	Gianni	reads	a book

(43)

	*Di	quale autore	dici	che	Gianni	lo	legge,	[un libro t]?
b.	of	which author	do you say	that	Gianni	it	reads	a book

In summary, the reason why Italian appears to escape the Definiteness Restriction can be traced back to the convergence of two independent, purely syntactic conditions: first, that *ci*, as opposed to *there*, is a clitic; second, that Italian is a pro-drop language. The first condition allows the subject to raise to the preverbal position; the second one allows subject–verb inversion: the result is an apparent violation of the Definiteness Effect. In the end, we don't need recourse to any semantic parameter, contra the implication of Chomksy's citation in (40).

Of course, since in the postverbal position the defining properties of the existential sentences illustrated in (10) are not all met (in particular there can be no extraction from the subject of an inverted subject, as in **ne hanno telefonati molti t*– of-them have phoned many), the sentence does not have an existential interpretation. Rather, the interpretation of a sentence like *c'è Gianni in giardino* can only be purely locative, as in the canonical counterpart *Gianni c'è*. Once more, as suggested by the formal interpretation of Jespersen's generalization, we must recall that 'existential sentences' are nothing but a conspiracy of independent syntactic factors that force the 'clausal interpretation' of a DP. See the discussion of the examples in (9) here: whenever one factor is missing the interpretation changes. Moreover, it is important to notice that both structural conditions must be realized for a certain language to escape the Definiteness Effect: in French, for example, the propredicative element that occurs in existential sentences is indeed a clitic, namely *y*, but this is not sufficient for that language to escape the Definiteness Effect: since it is not a pro-drop language, subject–verb inversion is not allowed and the sentence is ruled out if the subject's determiner is not adjectival in the technical sense adopted here.

Interestingly, this explanation for the lack of the Definiteness Effect in Italian has as a consequence an independent issue concerning agreement. Since at least Burzio (1986), it has been noted that in Italian, agreement may fail in existential sentences (this is also true in many other languages, as observed at least since Jespersen 1924):

(44)

(44)

a.	Ci	sono	molte	ragazze	in	questo	giardino.
	there	are	many	girls	in	this	garden
b.	C’	è	molte	ragazze	in	questo	giardino.
	there	is	many	girls	in	this	garden

However, when the subject of the existential sentence is definite, agreement, as in the case of a pronoun, is obligatory:

(45)

a.	Ci	sono	loro	in	questo	giardino.
	there	are	they	in	this	garden
b.	*C’	è	loro	in	questo	giardino.
	there	is	they	in	this	garden

If verbal agreement is obligatory when a phrase is raised to SPEC-IP position, as commonly assumed, then the contrast in (35) independently supports the hypothesis that the Definiteness Restriction is circumvented in Italian via movement through preverbal position and subsequent subject–verb inversion, and it explains why the sentence in (45a) can only receive a purely locative interpretation.

5 Conclusion

After a short introduction in aiming at emphasizing the difficulties of separating semantic and syntactic aspects of existential sentences, in we explored the defining properties of existential sentences. There it was shown that an existential sentence is the output of a conspiracy of independent factors, in a way originally envisaged by Jespersen (1924) and now formally synthesized in (10). More explicitly, we saw that an existential sentence is the minimal syntactic structure that ‘turns a DP into a clause’, i.e., that allows the

determiner to play the role of the predicate of the NP. In , we took some major steps toward a derivation of a core cluster of specific properties of existential sentences, exemplified in (8), on principled grounds. Moreover, the development of the standard theory stemming from Milsark (1974) and Chomsky's own first works in the field (notably Chomsky 1981) up to the Minimalist program (cf. Chomsky 1995c and many subsequent works) was illustrated. Along with this standard theory, which regards *there* as a place holder for the subject of predication (an idea that goes back at least to Jespersen 1924 and more generally to Structuralist linguistics), an alternative theory was presented based on Moro's (1987, 1997) unified theory of copular sentences, according to which *there* is rather to be regarded as a raised place holder for the predicate. In we concentrated on a simple cross-linguistic contrast showing the far-reaching and intricate questions that this raises on general comparative grounds: it was proposed that an apparent semantic contrast (the absence of the Definiteness Effect in the Italian equivalent of English *there*-sentences) should be traced back to purely syntactic conditions.

In this chapter, we have limited our attention to cases where *there* and *ci* occur with the copula (and a few cases involving the so-called 'quasi-copula'*seem*) and illustrated some of the major empirical and theoretical aspects of this field. In fact, it is well known that such elements can also co-occur with other verbs. In English for example, we have already observed that *there* can co-occur with *exist*; in fact, it is well known that *there* can also co-occur with other verbs such as *arrive*, *sink*, etc, namely with a subset of those verbs which give rise to the so-called 'unaccusative or ergative constructions' expressing motion (see Hale and Keyser 2002 for a critical and detailed discussion of *there*-sententeces with verbs other than the copula and the quasi-copula). In Italian, moreover, the equivalent of *there*, i.e., *ci*, can also occur in possessive constructions with *avere* (have), as in *Gianni c'ha un gatto* (Gianni there-has a cat), providing some alternative ideas toward the unified analysis of *have* and *be* across languages that has been pursued at least since Benveniste (1966a). Whether or not the predicative raising analysis offered here as an alternative theory can be extended to those constructions (unaccusative, quasi-copular, and possessive constructions) is a matter that cannot be discussed here. I will simply refer to Moro (1997 : chapters 3, 4) for the extension of such a proposal to the empirical cases touched on here, and for a discussion of the

consequences it has for the overall design of grammar and language acquisition.

NOTES

1 This chapter touches issues that lie across the rigid boundaries of syntax and semantics as established by didactic needs. Even the label 'existential sentences' itself suggests that crucial semantic facts must be known to approach the field. I have tried to stay away from intricate semantic aspects. The result is that the discussion is necessarily simplistic in many points: I do hope that the references I put in the text will help the reader who wants to master this field in a more detailed fashion. Moreover, since *there*-sentences in the existential reading involve the copula, reading chapter 18 is also highly recommended. I am grateful to the reviewers and to Orin Percus for many helpful suggestions.

2 For the analogy between the complement of the copula in *there*-sentences, perceptual verb constructions, and *averci* (*have-there*) constructions in Italian, see Moro (1997 : 236ff.) and references cited there.

3 Of course the AP/PP can also be adjunct to the noun phrases, like the PP in the subject of the following sentence: *many pictures in this book show how big Rome was by the first century* AD.

4 It is important to note that the distinction between 'stage level' and 'individual level' predicates (as stemming from the seminal work by Carlson 1977b) appears to be relevant to describing the type of AP that can be in the coda of an existential sentence. I will not further develop the very interesting semantic aspect of this issue here.

5 See for example Reuland and Ter Meulen (1987).

6 In Higginbotham's words, "by adopting the standard algebraic

picture in which restricted quantifiers over a domain D are interpreted as functions from ordered pairs of subsets of D to truth values, we can say that a quantifier q over D is of adjectival character if, for some function f from the subset of D to truth values, q (X, Y) = f (X Ç Y), for every pair X and Y of subsets of D" (Higginbotham 1987 : 48).

7 Strictly speaking one should also exclude the possibility that *be* is a predicate of existence: I am assuming here the traditional Aristotelian view that the copula is not a predicate but rather the expression of aspectual and inflectional features of the sentence when they cannot be expressed syncretically on the verb (see chapter 18 and the appendix of Moro 1997 for historical references). Interestingly, the idea that 'existence' cannot be a predicate is explicitly stated by Immanuel Kant in his *Critique of Pure Reason* (for an English citation see Kant 1965 : 504–505).

8 For this reason, when the splitting process is not available, the only way to 'rescue' the sentence is to give it a locative meaning (sometimes referred to as 'list reading'). In other words, if *there is John, Mary, and Peter* does not allow any 'splitting' process, the only possible interpretation is to say that the subject (*John, Mary, and Peter*) is predicated the property of being in a certain place (*there*). See also in this chapter. As for the so-called list interpretation, see Abbott (1992) and references cited there, among others.

9 *Pace* independent restrictions on movement related to the internal structure of the subject itself, of course.

10 Notice that, as with the original insight by Jespersen, there is no reference to a 'word' like *there*, i.e., to a locative element, in (10). Of course, the fact that a locative element frequently occurs in existential sentences is not accidental, since 'location' is indeed a metaphoric way to express existence. Nevertheless, location is per se not obligatory; witness expressions like Chinese *you* (have) to express existence, German *es gibt* (it gives), and the literary Italian *si dal si danno* (one gives/give). Interestingly, note also that the word *existence* itself is etymologically related to location, since it is made of the Ancient Greek prefix *ek-* (from) and the verbal root *sist-* (stay).

11 For the role of *there* in language acquisition see the pioneer work by Hyams (1986).

12 The debt of Chomsky's theory to Fregean thought is indeed explicit: "Rothstein 1983 proposes that the two clauses of the EPP are in fact closely related. We may think of a lexical head as a 'lexical function' that is 'unsaturated' (in roughly the Fregean sense) if it is not provided with appropriate arguments fulfilling the theta-roles it assigns, and we may correspondingly regard a maximal projection (apart from those that are quasi-referential: NP and clause) as a 'syntactic function' that is unsaturated if not provided with a subject of which it is predicated. Then, the EPP is a particular way of expressing the general principle that all functions must be saturated" (Chomsky 1986b : 116).

13 There is an intriguing issue that I am disregarding here, i.e., what exactly is the subject position in which *there* shows up, given the fine-grained taxonomy suggested by many authors (see for example Cinque 1979 ; Cardinaletti and Roberts 1990 ; Poletto 1993 ; Moro 1997). Arguably, *there* must occupy a lower position than the subject; witness the very well-known fact that no adverbs seem to intervene between the copula and *there*, as opposed to a full DP:

(i)

a.	the cause of the riot arguably is a picture of the wall
b.	there ?*arguably is/arguably's a picture of the wall

Since the debate on this issue is still developing, I will not discuss this issue further here, and simply assume that *there* occurs in the canonical preverbal DP position.

14 The representation given here essentially reproduces the original one given by Chomsky (1991). Later (Chomsky 1993), the DP was placed on the left of *there*, i.e., [$_{DP}$ a man [$_{DP}$ there]], on a par with all other instances of syntactic movement. See also Chomsky (1995c : 273) for a further slight refinement.

15 Safir's own theory of the distribution of *there* relied on the notion of 'unbalanced chain', which I will not introduce here; see Safir (1985b) for a detailed discussion of this issue and many related issues.

16 For a different approach to the categorial status of *there* see Moro (1997, 2000), where it is claimed that it has an intermediate status: it is generated where XPs are, but it behaves like a head, i.e., like a clitic. See also fn. 13 here.

17 For a synthetic review of the general literature on this "standard" view of *there* as a place holder for the subject of predications see Milsark (1974, 1977); Jenkins (1975); Chomsky (1981, 1995c : chapter 1); Safir (1985b); Lumsden (1988); Lasnik (1995a), among others. The literature in the field is indeed vast; for some other bibliographical indications see also the references to Moro (1997 : chapters 2, 3, and the appendix on a brief history of the notion of copula).

18 See for example Zwart (1991); Chomsky (1995c : 392); Den Dikken (2002); Koopman (2002).

19 For the original sources see Moro (1987, 1988). For extensive discussion see Moro (1997) or the appendix to Moro (2000).

20 Note that the existence of place holders for predicates is independently assumed across languages: for example, Italian *lo*, French *le*, or English *so* are clear candidates. That a noun phrase can play the role of a propredicate as well as a prosubject should not be surprising: this is because, more generally, the fact that a noun phrase plays the role of the subject or that of a predicate is not an inherent lexical piece of information; rather it is a function of the position in the structure where the noun phrase occurs (cf. *a man killed John* vs. *John is a man*).

21 The second option becomes plausible when one considers examples like *girls in the garden can be very attractive* or *there are girls in the garden in the fresco*. As for the position of the PP in the first sentence, it can be argued that it is in a topic position with successive remnant IP movement. See Moro (2000 : 130, fn. 12).

22 I say "certain types" because obviously not all predicative noun phrases must agree in number (and gender) with their subjects, as for example in the following Italian cases:

(i)

	Gianni	è	un	maestro/*una	maestra

(i)

a.	Gianni	is	a-mas.	teacher.mas./a-fem.		teacher.fem
b.	I	ragazzi		sono	la	causa
	the-mas.	boys-mas.-		are	the-fem.	cause-fem.

I will not further explore a possible generalization for this phenomenon. See Moro (1997) and references cited there for this rather murky issue.

23 As for the case involving *how many* illustrated in (22), we are led to conclude that *how many* is extracted from the subject and that *men* is pied-piped for locality reasons. For a detailed discussion see Moro (1997).

24 Of course, one could always say that there are two (or even more) different *there*s (cf., for example, Jespersen 1924 or Rothstein 1983 and references cited there): a *there* of existence and a *there* of location, relying on the different phonological status of the two *there*s. However, even disregarding the fact that this seems an ad hoc explanation, the problem is that in languages like Italian, the same problem would be reproduced with exactly the same element, i.e., the clitic *ci*, which does not have two phonological variants. We will approach this issue directly in the next section.

25 For a general survey of the issue see Reuland and Ter Meulen (1987) and references cited there, and the seminal works by Milsark (1974) and Barwise and Cooper (1981).

26 Chierchia's work leads to interesting discussions in the field of noun phrases, stemming from Carlson's (1977b) seminal work; but see Delfitto (2002 : 106ff.) for an extensive discussion of this issue and a critical approach to the notion of ‘semantic parameter’ proposed by Chierchia.

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sentences: are there parameters in semantics? 5 Conclusion NOTES

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