EXISTENTIAL SENTENCES IN ENGLISH AND POLISH

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In this paper existential sentences are discussed in three main aspects:

1. The correspondence of the logical formulae with the existential operator and their linguistic counterparts in English and Polish,
2. The structural equivalents of the existential sentences in English and Polish,
3. The relation of the existential sentences to the copulative sentences in both languages.

On the basis of the considerations of the logical and structural characteristics of existential sentences some conclusions are drawn concerning the deep structure and derivation of these sentences. In particular the hypothesis about the "locative" source of there is rejected and replaced with the view that there in English existential sentences is a preform of the unspecified subject which is present in the deep structure of these sentences. It is also argued here that the existential and copulative be are of the same transformational origin.

The term 'existential sentences' as we use it here refers to those sentences for which the corresponding logical formulae contain the existential quantifier and the presence of this operator is overtly manifested on the language level.

One of the functions of the existential quantifier is to indicate for how many values of the bound variable the proposition is true. On this basis the distinction is made between sentences in which the predicate is satisfied for at least one value of the variable — and here the existential operator is used — and sentences which are true for all values of the variable (the general operator is used here). The logical formulae corresponding to the existential and general statements are 1 and 2 respectively:

1. \( (\exists x) f(x) \)

which reads: there are some \( x \) having the property \( f \)
2. \((x) f(x)\)
which reads: for all \(x, z\) has the property \(f\)

The existential formula “there is at least one \(x\) with the property \(f\)” splits further into two cases:

a. “there is one \(x...\)” (the propositional function is satisfied for one value of \(x\))

b. “there is more than one \(x...\)” (the propositional function is satisfied for more than one value of \(x\)).

The distinction between existential and general statements is marked on the language level both in English and Polish. The assertion that there are more than one \(x\) with a certain property \(f\) is expressed by means of the following words:

**E. SOME** (+NP\(_p\))

**P. NIEKTÓRZYZY**

**JACYS** (+NP\(_p\))

**PEWNI**

These expressions are different from those used for the all-operator:

**E. ALL** (+NP\(_p\))

**P. WSZYSCY** (+NP\(_p\))

**EVERY** (+NP\(_p\))

**KAŻDY** (+NP\(_p\))

**ANY** (+NP\(_p\))

**JAKIKOLWIEK** (+NP\(_p\))

**KTÓRYKOLWIEK**

**ANYONE, ANYTHING**

**KTOKOLWIEK, COKOLWIEK**

The existential operator occurring in the proposition 2:

\[ (\exists x) [f(x) \cdot g(x)] \]

where

\( f = \text{a rational} \)

\( g = \text{a real} \)

is expressed in sentences such as 3 and 4:

3. **E. Some rationals are reals.**

**P. Peune liczy wymierno są liczbami rzeczywistymi.**

4. **E. There are rationals which are reals.**

**P. Są (istnieją) liczby wymierne, które są liczbami rzeczywistymi.**

From the language point of view only sentence 4 is a true existential sentence because only here the same meaning can be expressed with the verb *exist*.

The use of the general operator can be exemplified by sentences such as 5 corresponding to formula 6.

5. **E. All rationals are reals.**

**P. Wszystkie liczby wymierne są liczbami rzeczywistymi.**

\[ (x) [f(x) \cdot g(x)] \]

\( f, g = \text{the same as above} \)

A different status from the existential sentences such as 3 and 4 have sentences such as 7 and 8:

6. **E. A certain rational is a real.**

**P. Pewna liczba wymierna jest liczbą rzeczywistą.**

7. **E. There is a rational which is a real.**

**P. Jakiś (jakakolwiek) liczba wymierne, która jest liczbą rzeczywistą.**

In these sentences the existence of only one referent is asserted, but like in 3 and 4 this referent is not named. This use of the existential quantifier is expressed by the use of the following words:

**E. CERTAIN**

**A**

**P. PEWNY**

**SOMEONE, SOMETHING**

\[ (+NP_{s}) \]

**JAKIŚ, źór \[ (+NP_{s}) \]

**KTOŚ, COŚ**

The indefinite article is used in this way only in some cases. In the majority of cases the indefinite article together with the noun phrase forms the indefinite description which conveys the meaning that the proposition is true for more than one individual satisfying the predicate: which individual is neither indicated by the context nor by the expression itself (cf. Reichenbach 1966: 91, 251).

There are no existential sentences with proper names because the existence of the respective individual is already implicitly asserted in the proper names themselves. This is clear on the basis of the equivalence of the following propositions:

8. **E. f(x) = e(\exists x) f(x) \cdot (x = x)_{i}**

where \( x_{i} \) is a proper name, \( f \) is any function (cf. Reichenbach 1966: 255).

Similarly, for definite nouns existence is implied in the very use of these nouns. Like proper nouns, definite nouns satisfy the condition of the existence of one unique referent (there is only one argument satisfying the function) — which referent is to be determined from context, time, place and other features of the situation of utterance. (In languages like Polish which do not have

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\( ^1 \) Jakie as the Polish counterpart of the English indefinite article has been proposed by Borel (1976).

\( ^2 \) Language is never as consistent as logic. Sometimes the definite article can be used in such a way as to indicate the opposite. Some general statements are expressed with definite articles, e.g.

The lion is a dangerous animal.

which means

All lions are dangerous animals.
definite and indefinite articles the distinction between definite and indefinite expressions is marked almost exclusively by the contextual and situational features.

Thus these are only the indefinite expressions for which the existence of the respective individuals must be asserted. This is done in logic by binding the free variable by the existential operator and thus changing the formula 10 which is not any proposition into the simplest kind of proposition — formula 11:

10. \( f(x) \)
11. \( (\exists x) f(x) \)

If \( f \) stands for the property of “being a ghost” the linguistic predicate corresponding to this function is an indefinite noun, a ghost. The simplest sentence that can be formed from this predicate is an existential sentence like 12:

12. E. There are ghosts.
   P. Są duchy.

So far we have discussed some relevant aspects of the use of the linguistic counterparts of the propositions with the existential operator. In particular we have shown that logical constraints find their reflect in linguistic, namely syntactic constraints such as the requirement that the noun occurring in the existential sentence must be marked as “— proper” and “— definite”. This is true for both English and Polish.

Comparing the Polish and English existential sentences we find an important similarity between them. This is so easy to notice that very little attention has been paid to it. This similarity is that both languages use the same verb (to be, być) as an indicator of existence and in the function of copula.

Philosophy and grammars rely to a great extent on this distinction between existential and copulative be and it is customary to treat them in a different way each. Grammars emphasize that their derivational origin and their surface syntactic function are different: existential be forms a complete predication whereas copulative be needs a noun or adjective to complement it. It is interesting that this distinction was not made in philosophy sooner than in the 19th century. Earlier philosophies, and especially the ancient Greek philosophy were unaware of this difference. Aristotle, for instance, as Graham points out in his article (Graham 1965) had difficulties in making a clear distinction between whether it is and what it is.

It is one of the objectives of this paper to show that the so-called copulative and existential be are of the same origin. Both are introduced transformationally, none is represented in the deep structure as a lexical item. The following arguments based on both English and Polish material seem to support this hypothesis:

I. The verb to be (Polish być) does not bear the main stress in a sentence (the various cases of emphatic accent are not taken into account here). This

is a well known fact for copulative sentences such as 13 and 14 in which, as it was convincingly discussed in linguistic literature, it is not the verb be that is the predicate but the noun or the adjective:

13. E. These boys are fools.
   P. Ci chłopy są głupcy.
14. E. These boys are stupid.
   P. Ci chłopy są głupcy.

(Numbers indicate the relative stress — 1 is for the main stress.) Notice that also in existential sentences it is always the noun that is stressed and not the verb:

15. E. There are fools (in our class)
   P. (W naszej klasie) są głupcy.

In sentences with intransitive verbs of the form Subject — Verb the verb is stressed whenever it functions as comment, e.g. in 16:

16. E. These fools died.
   P. Ci głupcy wymarli.

This suggests that the verb to be in existential sentences is not a regular intransitive verb (if it is an intransitive verb at all).

II. The unstressed be precedes the noun both in copulative and existential sentences. This noun in both cases must meet the condition of corresponding to what is called in logic a general or universal name. Proper nouns are excluded, and for existential sentences also definite nouns. In subject position we find both general and particular names, whereas in predicate position only general terms are allowed. If we were to treat the nouns in existential sentences as subjects it would be rather strange that particular names would not be allowed in that function. On the other hand it is very likely that the noun in existential sentences is the predicate and not the verb be. A further conclusion would be that be is a kind of copula, like in regular copulative sentences.

This is actually consistent with the logical formulae that have been proposed for these sentences. In these formulae the propositional functions (predicates) correspond to nouns in language and not to the verb to be. Compare formulae 17 and 18 corresponding to sentences 13 and 15 respectively:

17. \( f(x) \cdot g(x) \)
18. \( (\exists x) f(x) \cdot g(x) \) where \( f = \text{boy}, g = \text{fool} \)

* Some of the relevant works for this subject are: Bach 1967, Fillmore 1968, Labov 1969, Lyons 1966.
In both cases the noun fool functions as predicate (one place predicate with the argument x).

III. Both in English and in Polish there is a rule that whenever a noun functions as a predicate the copula (be or have — this depends on the kind of topicalization) is inserted in front of this noun. The trouble is that unlike in typical copulative sentences in which the copula “links” the subject with the predicate, there seems to be no subject in existential sentences (once we have decided that the noun in these sentences is a predicate). This cannot, however, be true for the deep structure of these sentences as it is not only the function itself that occurs in the logical formulae underlying these sentences but there is also the argument of this function. Usually one of the arguments of the predicate becomes the subject of the sentence. Here we would expect that the only argument (x) will become the subject. What prevents this x from becoming the linguistic subject is that it is impossible for this x to be lexicalized on the language level because it is not specified. Notice that in copulative sentences the subject x is defined twice: once as belonging to class f of objects and for the second time as belonging simultaneously to class g. Hence formula 17 reads as:

19. Some x which are boys are fools.

whereas 18 reads as 20:

20. Some x are fools.

Due to the fact that in existential sentences the subject is not specified the structural differences between copulative and existential sentences exist and moreover, this fact is also responsible for the main structural differences between English and Polish existential sentences (we shall return to this problem later).

IV. The existential use of be can hardly be distinguished from the copulative use of this word in locative sentences, i.e. in sentences which have the form: subject — be — adverb of place. This is why there is a disagreement between grammarians as to the syntactic function of adverbs of place in sentences like 21:

21. E. Children are in the garden.
   P. Dzieci są w ogrodzie.

Some English grammars treat in the garden as a predicative, i.e. as having the same surface structure syntactic function as nouns and adjectives in predicative position. In this interpretation be functions as a copula (e.g. Thomas 1965, Roberts 1967).

There is another tendency to treat in the garden as a place adverbial attached to the whole sentence. According to this treatment be is a notional verb with the meaning of exist or to be present that must be complemented with an adverbial of place (Lewicki 1969). A strong argument in favor of this opinion is that unlike the combinations of be + noun and be + adjective, the combination be + adverbial of place cannot be replaced by a single verb of related meaning. For instance:

22. E. to be a teacher of mathematics = to teach mathematics
   P. być nauczycielem matematyki = uczyć matematyki
23. E. to be a football player = to play football
   P. być piłkarzem = grać w piłkę

Polish has more possibilities of this kind because this phenomenon is frequent also with adjectives:

24. Janek jest zmęczony = Janek zmęczył się (John is tired)
25. Janek jest chory = Janek choruje (John is sick)

No such process occurs in case of locatives. This would suggest that in sentences like 21 the locative does not constitute together with the verb be a single functional unit — predicate. On the other hand if we agreed that to be in such sentences is a notional verb we would not be able to explain why the word order and the stress pattern are reversed in sentences like 12 (There are ghosts — Są duchy).

Our next observation is that English sentences of the type:

26. There are children in the garden.

correspond to Polish sentences with the following word order:

27. W ogrodzie są dzieci (jakieś dzieci).

and not to:

28. Dzieci są w ogrodzie.

The difference between 27 and 28 lies in the use of the noun — in 27 it is the nonanaphoric use whereas in 28 it is anaphoric. A sentence like 29 is very unnatural in Polish:

29. Są dzieci w ogrodzie.
The conclusion from these considerations is that in locative sentences the word be has some characteristics of a regular copula and some of the existential be. A possible solution is that in these sentences in the deep structure two predicates (and hence two sentences) occur instead of one. These sentences are organized in the following way:

![Diagram 1](image)

where $N_1$ is unspecified lexically.

This means that location is predicated only of things of which the existence is already asserted (and no wonder this is so, because predicing location of the property of "being a child" is senseless). Hence the logical formula corresponding to 30 would be something like 31, where $g$ standing for locative is a complex function, i.e., it has another function as its argument:

31. $(\exists x) g[f(x)]$

If $f$ is children this formula reads:

32. There are $x$ which are children which are in the garden.

At some stage of the derivation of the sentence with the underlying deep structure presented in diagram 1 the copula is inserted under the predicate phrase nodes which dominate immediately any element which is not a verb.

See diagram 2:

![Diagram 2](image)

In actual language practice only one be both in English and in Polish is used.

V. The analysis of the negated existential sentences proves our assumption that there are two predicates in locative sentences to be correct. Depending on which predicate is negated we get two different sentences. In Polish in the present tense the copula być (to be) changes into mieć (have) whenever the noun is negated, but no such change takes place when the locative is negated. Consider the following examples:

32. $(\exists x) g[f(x)]$

where $g =$ in the garden.

$f =$ children.

$g$ is negated.

E. Children are not in the garden. *(Children are at home)*

P. Dzieci nie są w ogrodzie. *(Dzieci są w domu)*

33. $(\exists x) g[f(x)]$ where $f$ is negated

E. There are not any children in the garden. *(There are adults in the garden)*

P. W ogrodzie nie ma dzieci. *(W ogrodzie są dorosli)*

Only być alternates with have in the Polish negated sentences. The negative counterpart of any Polish existential sentence in present is always with mieć (have), e.g. 34:

34. Nie ma duchów. *(There are no ghosts)*

The alternation of być and mieć can also occur in sentences that we would be inclined to regard as typically copulative, for instance:

35. Dzieci są mądre. *(Children are clever)
from the 17th century language of Pasek are still actual:

42. **Za macie zon**. (You have a bad wife)
    **Zia jest wasza zona**. (Your wife is bad)

43. **Mamy gości**. (We have guests)
    **U was są gości**. (There are guests in our house)

44. **Nos miała piękna**. (She had a beautiful nose)
    **Jej nos był piękny**. (Her nose was beautiful)

VI. The occurrence of the verb **miać** (to have) in negated existential sentences in Polish is a difficult phenomenon to explain. There is some evidence that originally it was the verb to be which appeared in these sentences. The history of the existential construction of the type:

45. **Nie ma kogo winać**. (There is no one to blame)

as traced by A. Mirowicz (1964) proves that this replacement was caused by the tendency in the Polish language towards the maximally “impersonal” and “subjectless” status of these sentences. In earlier Polish **nie jest** (is not) occurred instead of **nie ma**. Here is one of the examples taken from Piotr Floriński (14th century) which is quoted by Mirowicz:

46. **... a wniosław twrogich ne jest kto by bit rovennik tobe.** (Flor. XXXIX, 7)

Since the verb **być** appears here and the pronoun is in the nominative case this construction is very close to its modern English equivalent:

47. **... and in your thoughts there is no one who would be equal to you.**

In Polish the evolution of these sentences led to the replacement of **być** by the impersonal form of **miać** in the present and the impersonal forms of **być** in the past and future tenses. The nominal element also changed from the nominative to the oblique case. Alongside with the impersonal constructions sentences with personal **have** began to be used, e.g. 48:

48. **Nie mam kogo winać.**

But also in these sentences **miać** has the same meaning as negated **być** in existential sentences.\footnote{Similarly sentences with the personal **miać** corresponding to the English sentences with the expression to be to, e.g. **Mam wygłosić odczyt.** I am to read the paper.}

were originally constructions with impersonal **być** (Mirowicz 1964).

\footnote{Studia Anglica.}
VII. The impersonal form of the verb in existential sentences and hence their subjectless character is another important feature of these sentences. (See the tables beneath where the English and Polish copulative and existential be are compared)

<table>
<thead>
<tr>
<th>ENGLISH</th>
<th>( \text{BE}_1 ) (exist.)</th>
<th>( \text{BE}_2 ) (cop.)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>TENSE</strong></td>
<td><strong>Positive</strong></td>
<td><strong>Negative</strong></td>
</tr>
<tr>
<td>PRES.</td>
<td>is / are</td>
<td>not are not</td>
</tr>
<tr>
<td>PAST</td>
<td>was / were</td>
<td>not were not</td>
</tr>
<tr>
<td>FUT</td>
<td>will be</td>
<td>will not be</td>
</tr>
</tbody>
</table>

**POLISH**

<table>
<thead>
<tr>
<th><strong>TENSE</strong></th>
<th><strong>Positive</strong></th>
<th><strong>Negative</strong></th>
<th><strong>Positive</strong></th>
<th><strong>Negative</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>PRES.</td>
<td>jest / sa</td>
<td>nie ma</td>
<td>jest / sa</td>
<td>nie jest / nie ma</td>
</tr>
<tr>
<td>PAST</td>
<td>był / -a, -o</td>
<td>nie było</td>
<td>był / -a, -o</td>
<td>nie był / -a, -o</td>
</tr>
<tr>
<td>FUT</td>
<td>będzie / będziesz</td>
<td>nie będzie / nie będziesz</td>
<td>będzie / będziesz</td>
<td>nie będzie / nie będziesz</td>
</tr>
</tbody>
</table>

The impersonal form of the verb is usually identical with the third person form (the morphological neutralization of the category of person). In Slavic languages there is also a tendency to mark the impersonal use of the verb as neutral (Irvić 1985). In Polish the form bylo has a neutral ending.

Let us compare some other impersonal constructions in English and Polish:

49. E. It thunders.
   P. Grzm..

50. E. It rained.
   P. Padali.

51. E. It was dark.
   P. Było ciemno.

In Polish all sentences with impersonal verbs are subjectless sentences, i.e. the grammatical subject congruent with the verb is not allowed or in some cases where it is allowed, it is a tautological word which adds no information, e.g.

52. Grzmot grzm.

Occasionally in some Polish dialects the formal subject to, owo, ono occurs (Koneczna 1985: 93).

In English always the formal subject it occurs. It is called formal because it has no lexical meaning and because it is introduced transformationally. Whatever the origin of this it is, it can be treated as some kind of proform for the unspecified subject. The English it and there have similar functions and are of similar origin. They both correspond to zero in Polish. We can say that whenever the unspecified subject is deleted in Polish, it is replaced with a proform in English.

The fact that there and expletive it are similar is pointed out in all traditional grammars. It is also observed by Allan (1971) who claims that there / there occurring in existential sentences has much in common with expletive it:

"Like there, expletive it submits to some of the transformations that may be carried out on subjects, but not others; in fact it appears to submit to just those transformations to which there also submits."

(Allan 1971: 8).

In the same article Allan raised the problem that there unlike regular subjects does not submit to the cleft transformation. His examples are:

53. Sam is in the garden.
54. It is Sam who is the man in the garden.
55. There is a lion in the garden.

but not

56. *It is there, that is a lion in the garden.

It is very likely that the unacceptability of this sentence is related to the unspecified character of there because indefinite pronouns also do not easily occur in this position, e.g.:

57. Someone lost his watch.
58. *It was someone who lost his watch.
59. Something was on the table.
60. *It was something that was on the table.

Based on the discussion of existential and copulative sentences presented in this paper we propose the following derivation of existential sentences of the basic type.
This analysis does not explain however, why the proform of the unspecified subject in existential sentences in English is there. The linguistic literature on the subject does not solve the problem of the origin of this there either. The most widely accepted opinion is that there in existential sentences is a proform of the Locative copied in the sentence initial position. Thus according to Fillmore (1968) verbless sentences with the following array of cases [O, I] can have either the objective case in the function of the subject or the locative case. If the locative case is chosen the noun in this case is copied in the sentence initial position and the first copy is replaced with an appropriate proform which for adverbials of place is there.

A similar reasoning is presented by Lyons (1968) who treats existential sentences as belonging to a special type of locative sentence. For the derivation of these existential sentences in which no adverbial of place occurs he proposes the dummy locative, (e.g., somewhere) in the deep structure. This dummy locative is then copied in subject position and pronominalized as there.

Susumu Kuno (1971) goes further and gives the arguments that the deep structure word order in existential sentences is

Locative - V_{exist} - NP_{adver}

The treatment of there as deriving from the underlying locative is based on the surface structure observation that there in existential sentences is almost identical in form with the pronominalized adverb of place (except that phonetically there is a weak form of the adverbial there). There are however some difficulties and unexplained problems connected with this interpretation. As Thorne (1971) points out this analysis makes it difficult to see how existential sentences differ from deictic sentences, because sentences such as 62:

62. There is a God.

are treated as almost equivalent to 63:

63. God is there.

Susumu Kuno wonders how to solve the problem of the number agreement in existential sentences. His tentative proposal is that the number of the subject is copied to the sentence initial locative.

Allen (1971) rejects Fillmore's and Lyons theory on distributional grounds. He argues that there₁ (existential there) and there₂ (adverbial there) do not have the same functions in language. For instance, only there₂ may replace locatives and therefore only there₂ can be coresidential with them.

There are strong etymological bases to treat there as a pronominal counterpart of adverbials of place. Whether this is also true of existential there is another problem.
Our analysis avoids some of the problems connected with the "Locative" interpretation. The question why the pronom for the unspecified subject is there is still unanswered. Actually this question contains two more specific questions:

1) Why is this pronom different form it?

and 2) If it has to be different, why has it the same form as the pronounized adverb of place?

The word there from the etymological point of view consists of the demonstrative base and the adverbial ending. It is interesting however that in Old English there were cases when it was not used adverbially. There could be used as corresponding with modern English that in words like thereof, thereafter, thereby, wherever, etc. In Old English these words consisted of two words - a demonstrative pær and a preposition. Hence OE pær abutan = about that, OE pær after = after that, etc. This could mean that there does not necessarily have the adverbial meaning and function.

One more argument against the "Locative" interpretation is that other languages in which existence is not expressed by the word be itself do not employ their regular pronounized adverbial of place, but a different word:

French: Il y a, y for existential there

German: Da sind, da for existential there

do für adverbial there

and that many languages have no trace of any adverbial of place in existential sentences as is the case with Polish.

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