

# A unified LFG analysis of homonymous distributive elements in Polish

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# Problems



## Empirically:

- (at least) **two functional elements** in Polish,
- with the **same form** (*po*),
- and the **same semantics** (distributive, similar to *each*),
- but **different syntax** (external and internal).

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- Dałem im *po* jabłku.  
gave-I them.DAT *PO* apple.LOC  
'I gave them an apple each.'
- Dałem im *po dwa* jabłka.  
gave-I them.DAT *PO* two.ACC apples.ACC  
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Two elements *po*:

- *po* + NP[LOC]: preposition,
- *po* + NumP[ACC]: another (same?) preposition?



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- (roughly) structural case positions,
- i.e.: accusative, genitive of negation and nominative.

For example, for *po* + NP[LOC]:

- Dałem im jabłko / po jabłku.  
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'I gave them an apple (each).'
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- Kierowaliśmy firmą / \*po firmie.  
manage company.INST / PO company.LOC  
'We ran a company (\*each).'



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# External syntax 2



Similarly for *po* + NumP[ACC]:

- Dałem im dwa jabłka / po dwa jabłka.  
 gave-I them.DAT two.ACC apples.ACC / PO two.ACC apples.ACC  
 'I gave them two apples (each).'
- Nie dałem im dwóch jabłek / po dwa jabłka /  
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# Internal syntax 1



First approximation – two prepositions *po*:

- *po* + NP[**LOC**],
- *po* + NumP[**ACC**].

Problem – different behaviour in the subject position:

- Po książce leżało / \*leżała na stole.  
 po book.**LOC** lay.N.**SG** / lay.F.**SG** on table  
 'A book was lying on each table.'
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## Digression: Polish subjects



### Generalisations:

- subject–verb (SV) agreement:
  - only with nominative subjects,
  - otherwise 3.N.SG features expected on the verb;
- non-nominative subjects, e.g.:
  - sentential, infinitival,
  - prepositional,
  - accusative numeral phrases:
    - high numerals (5 and upwards),
    - paucal numerals – only some human-masculine (M1) forms.

### Illustration of the last point:

- Dwóch facetów przyszło. / Dwaj faceci przyszli.  
 two.ACC guys.GEN came.N.SG / two.NOM guys.NOM came.M1.PL  
 'Two guys came.'

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## Internal syntax 2



(Examples repeated from two slides back.)

Compatible with the PP treatment of *po* + NP[LOC]:

- Po książce leżało / \*leżała na stole.  
PO book.LOC lay.N.SG / lay.F.SG on table  
'A book was lying on each table.'

SV agreement below calls for explanation:

- Po dwie książki \*leżało / leżały na stole.  
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'Two books were lying on each table.'

Problem:

- the subject *po*-phrase cannot be a PP,
- it must be nominative.

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Such SV agreement only with *po*-phrases containing those numerals which take nominative case in the subject position.

Contrast (first example repeated):

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- Po pięć książek leżało / \*leżały na stole.  
 po five.ACC books.GEN lay.N.SG / lay.F.PL on table  
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# Internal syntax 4



Is (this) *po* simply transparent to case assignment (rather than assigning the accusative)? Contrast (both repeated):

- Nie dałem im dwóch jabłek / po dwa jabłka.  
not gave-I them.DAT two.GEN apples.GEN / PO two.ACC apples.ACC  
'I didn't give them two apples (each).'

Here *po* assigns the accusative (not transparent to the genitive of negation) – could be a preposition.

- Dwie książki / Po dwie książki leżały na stole.  
two.NOM books.NOM / PO two.ACC/NOM? books.ACC/NOM? lay.F.PL on table  
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# Internal syntax 5



Summary so far:

- two types of *po*-phrases, both occurring in structural case positions:
  - *po* + NP[**LOC**]
  - *po* + NumP[**ACC**] (subjects: *po* + NumP[**NOM**]?)
- the former – a PP,
- the latter:
  - given the right numeral – agrees with the verb when in subject position,
  - and the NumP there could be analysed as nominative (case syncretism);
  - but the NumP remains accusative in genitive-of-negation positions.



# Analysis 1



## Analysis of $po + \text{NumP}[\text{ACC}]$ .

One possibility:

- assume 2 elements  $po$  in this construction (i.e., 3 altogether):
  - prepositional  $po + \text{NumP}[\text{ACC}]$  in accusative and genitive of negation positions,
  - adnumeral modifier  $po + \text{NumP}[\text{NOM}]$  in nominative positions;
- we'll need such a (very restricted) adnumeral modifier  $po$  anyway,
- but here we'll try to give a more unified analysis.

Here:

- $po$  as a weak(ish) head (Tseng, 2002; Abeillé, 2003, 2006),
- takes over (morpho)syntactic features of its NumP object,
- apart from case – bears independent structural case,
- contributes semantics (same as the other  $po$ ).

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Lexical entries of the two elements *po* – using the mechanism of *restriction* (Kaplan and Wedekind, 1993):

PO P @PODIST(...)  
 (↑ OBJ CASE) = LOC

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PODIST(...) = (↑ PRED) = 'PO(OBJ)'  
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How this works:

- the whole *po*-phrase is just like the NumP[ACC],
- including number, gender and the type of numeral,
- but – instead of the accusative – it receives independent structural case: nominative, accusative or genitive.

The three structural case positions (based on previous examples):

- Dałem im po dwa jabłka.  
gave-I them.DAT PO.ACC two.ACC apples.ACC  
'I gave them two apples each.'
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Case assigned to the *po*-subject as if it were assigned to the numeral phrase alone (examples repeated).

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 po.NOM two.ACC books.ACC lay.F.PL on table  
 'Two books were lying on each table.'

Nominative – assigned to a paucal non-human-masculine numeral.

- Po pięć książek leżało na stole.  
 po.ACC five.ACC books.GEN lay.N.SG on table  
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Accusative – assigned to a high numeral.



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# Another *po*? 1



Attested examples, but often judged as marginal or even unacceptable:

- Broń została przekazana po dwóch osobom z  
 weapon AUX transferred.PASS PO two.DAT person.DAT.PL from  
 każdego ugrupowania.  
 each group  
 'The weapon was handed in to two people from each group.'
- Do Senatu wybierani są po dwaj senatorzy z  
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In these examples:

- in the former: dative position, dative NumP,
- in the latter: subject position, unambiguously nominative NumP (paucal human-masculine).

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# Another *po*? 2



This seems to call for another (but much more restricted) lexical entry:

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AdNUM @PODIST(...)  
 {(↑ CASE) = DAT | (↑ CASE) = NOM}  
 ↑ \ PRED \ OBJ = (↑ OBJ) \ PRED \ OBJ  
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## C-structure 1



C-structure rules for the three elements *po*:

- *po* + NP[LOC] – the usual PP rules,
- AdNum *po* elements:

$$\text{NumP} \rightarrow \text{AdNum} \quad \text{Num} \quad \text{NP}$$

$$\downarrow = \uparrow \quad (\uparrow \text{OBJ}) = \downarrow \quad (\uparrow \text{OBJ OBJ}) = \downarrow$$

- contrast with the usual NumP rule:

$$\text{NumP} \rightarrow \text{AdjP}^* \quad \text{Num} \quad \text{NP}$$

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## C-structure 2



Apparently the adnumeral *po* blocks adjectives (but judgements vary):

- Dał każdemu po 2 smaczne jabłka.  
gave each one po 2 tasty apples  
'He gave each of them 2 tasty apples.'
- ?Dał każdemu po smaczne 2 jabłka.  
gave each one po tasty 2 apples

Contrast with prepositions:

- Posłał go po 2 smaczne jabłka.  
sent him for 2 tasty apples  
'He sent him to fetch 2 tasty apples.'
- Posłał go po smaczne 2 jabłka.  
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# Conclusions



**In this talk** we presented:

- arguments for the existence of up to 3 different functional elements,
- with the same form ( $po$ ) and semantics (distributive),
- and an analysis avoiding missed generalisations:
  - via use of templates,
  - and a uniform analysis of all elements  $po$  as OBJ-taking,
  - crucially relying on the notion of weak heads borrowed from HPSG.

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  - via use of templates,
  - and a uniform analysis of all elements  $po$  as OBJ-taking,
  - crucially relying on the notion of weak heads borrowed from HPSG.

**Thank you for your attention!**

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