

## The puzzling syntax of Polish cardinal numeral expressions

Katarzyna Miechowicz-Mathiasen

School of English, Adam Mickiewicz University

mikasia@ifa.amu.edu.pl

In this talk, I present an analysis of Polish (simple and complex) cardinal numerals and address the puzzling issues intrinsic to the Polish numeral system. I show that while cardinal numerals 1-4 are adjectival (and have been so since Proto-Slavic), higher numerals 5<, which were once nominal in Proto-Slavic/Old Polish, have been reanalysed as lexicalisations of the functional head Num of NumP, i.e. have undergone numeralisation and have thus become a separate grammatical (functional) category: numeral (with own declension). Numerals 1-4 are adjectives and constitute specifiers of NumP. I propose an analysis of numeralisation which is based on grammaticalisation (Roberts & Roussou 2003) and on Panagiotidis' (2002) proposal for pronominal structure in which every pronoun has a noun within, as well as the semantic work by Ionin & Matushansky (2006). In particular, I propose that there is a noun in every NumP (this turns out to be of vital importance in complex numerals). I exemplify numeralisation with the numeral *tysiąc* 'thousand' which already began undergoing this process, i.e. it allows both nominal and numeral uses with their respective declensions (under certain conditions). I present examples with distributive *po* which in Polish marks nominal arguments with Locative case and numeral expression with Accusative (Przepiórkowski 2006, 2008).

- (1) a. Ojciec dał nam po \*tysiąc /tysiącu.  
 father<sub>NOM</sub> gave<sub>3.SG.M</sub> us<sub>DAT</sub> po \*thousand<sub>ACC</sub>/thousand<sub>LOC</sub>  
 'Father gave us a thousand each.'
- b. Ojciec dał nam po tysiąc /tysiącu złotych.  
 father<sub>NOM</sub> gave<sub>3.SG.M</sub> us<sub>DAT</sub> po thousand<sub>ACC</sub>/thousand<sub>LOC</sub> zlotys<sub>GEN</sub>  
 'Father gave us a thousand zlotys each.'
- c. Ojciec dał nam po dwa tysiące /\*dwóch tysiącach złotych.  
 father<sub>NOM</sub> gave<sub>3.SG.M</sub> us<sub>DAT</sub> po two<sub>ACC</sub> thousand<sub>ACC</sub>/\*two<sub>LOC</sub> thousand<sub>LOC</sub> zlotys<sub>GEN</sub>  
 'Father gave us two thousand each.'

- (2) a. nominal *tysiąc*      b. numeral *tysiąc*      c. numeral *tysiąc*
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- Diagram (a) shows a NumP structure where the head Num is *tysiąc* and the NP complement contains the noun *tysiąc*.  
 Diagram (b) shows a NumP structure where the head Num is *tysiąc* and the NP complement contains the noun *złotych*.  
 Diagram (c) shows a DP structure where the head D is *nas* and the NumP complement has head Num *tysiąc* and NP complement *e*.

With reference to Greenberg's (1978) and Ionin & Matushansky's (2006) work, I propose a structure of complex numerals involving selection (with hierarchical structure) in multiplication and conjunctions in additions. Since each NumP has a noun within, to derive the final ordering I follow Ionin & Matushansky in assuming Right Node Raising of the counted noun (Postal 1974). This analysis is further supported by the selectional properties of such prepositions as distributive *po* exemplified above, as well as Left Branch Extraction facts (Ross 1967).

To account for the Accusative Hypothesis (a descriptive fact about numeral expressions with cardinals 5< according to which they are intrinsically Accusative), I propose an analysis in which they are introduced by a (null) light preposition. This P is an instance of a defective (interpretable) tense head (*iT*) (in the sense of Pesetsky & Torrego's (2004) proposal where all case is a reflection of tense, and Ps instantiate tense), which I argue to be the source of the said Accusative. To support this, I follow up on Pesetsky & Torrego's analysis of

unaccusatives (which are argued to involve a defective T head) and I give examples of Russian Accusative Unaccusatives (Lavine & Freidin 2002) and Polish –no/-to constructions in which a defective T head checks Accusative case. By analogy, such a head is proposed to be responsible for the Accusative case of the numerals. I further argue that the existence of such light Ps must be assumed and additionally motivate it with evidence from Polish overt light Ps such as *około* ‘around/about’ (which itself checks structural Genitive) and *ponad* ‘over’ (which checks structural Accusative), and with reference to the existence of an overt light preposition in Serbo-Croatian. The structural case checked by *około/ponad* is always trumped by the more marked lexical cases (this is different with the Serbo-Croatian light P).

- (3) a. Czekałam około godziny/minuty/tygodnia. → structural Genitive  
 waited<sub>1.SG.IMP</sub> around hour<sub>GEN</sub>/minute<sub>GEN</sub>/week<sub>GEN</sub>  
 ‘I’ve waited about an hour/minute/week.’ (originally checked by *około*)
- b. Pomogli około pięciu tysiącom Polaków. → Dative  
 helped<sub>3.PL</sub> around five<sub>DAT</sub> thousands<sub>DAT</sub> Poles<sub>GEN</sub>  
 ‘They helped around five thousand Poles.’
- c. Nie było około pięciu tysięcy Polaków. → Genitive of negation  
 not were<sub>3.SG.N</sub> around five<sub>GEN</sub> thousands<sub>GEN</sub> Poles<sub>GEN</sub>  
 ‘There were around five thousand Poles absent/missing.’
- d. Opiekują się około pięcioma tysiącami Polaków. → Instrumental  
 care<sub>3.PL</sub> self around five<sub>INSTR</sub> thousands<sub>INSTR</sub> Poles<sub>GEN</sub>  
 ‘They are taking care of around five thousand Poles.’
- (4) a. \*Jovan je rukovodio pet fabrika. → lexical Genitive  
 Jovan aux<sub>3.SG</sub> managed five factories<sub>GEN</sub> (Franks 2002: 167)  
 ‘Jovan managed five factories.’
- b. Jovan je rukovodio sa pet fabrika.  
 Jovan aux<sub>3.SG</sub> managed with five factories<sub>GEN</sub>  
 ‘Jovan managed five factories.’
- c. Jovan je rukovodio jednom fabrikom. → (the light P is unavailable with  
 Jovan aux<sub>3.SG</sub> managed one<sub>INST</sub> factory<sub>INST</sub> adjectival numerals: they are not  
 ‘Jovan managed one factory.’ lexicalisations of Num0, hence are  
 not selected by it; they do not check  
 Genitive of quantification)
- d.\* Jovan je rukovodio sa jednom fabrikom.  
 Jovan aux<sub>3.SG</sub> managed with one factory  
 ‘Jovan managed one factory.’

I also account for the case changes (or lack thereof) within numeral expressions through reference to Case Hierarchy (Blake 1994) and case-inclusion analyses (Caha 2009). Lastly, I show how the numeral expressions remain nominal (DPs) despite being introduced via a preposition with reference to Matushansky’s (2006) proposal of head movement and m(orphological)-merger, which again finds support in Coordinate Structure Constraint and Left branch Extraction facts.

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