

**Evidence from Polish:
Predication from within a PP and
Case assignment with Numeral Phrases**
Przepiorkowski (2000)

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Bob Levine and Detmar Meurers (Ohio State University)
Scandinavian Summer School on Constraint-Based Grammar
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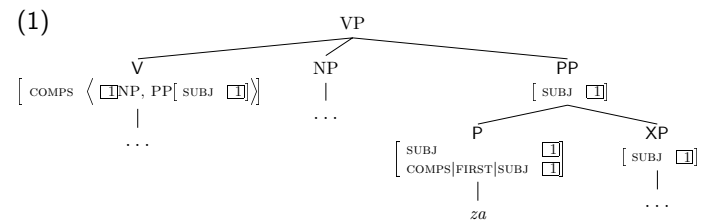
Major claims

- Data from Polish strongly support the presence of ARG-ST specifications on phrasal categories.
- The presence of a ARG-ST specification on phrasal signs may vary from language to language;
- and within a single language, a non-null ARG-ST specification may be present in one class of phrases and absent in another.
- The propagation of ARG-ST specifications through phrasal signs is no less restrictive than allowing lexical complements, which gives access to the valence of such complements (or, equivalently, the ARG-ST lists of these complements).

The structure of the argument

Argument 1

- Certain raising verbs in Polish select PPs whose predicate-phrasal daughters structure-share their SUBJ specifications with the SYNSEM values of the selecting verbs' object NP complements.
- The linkage between this NP complement and the SUBJ specification the P's predicative complement would be simple to state by familiar devices if the P in such cases could be analyzed as a raising item itself, i.e., if



were the relevant structure;

- but this is precluded for two reasons:
 - raising prepositions are two-place predicates, which countenance a certain pattern of anaphora that nonraising prepositions, which are one-place selectors, do not, and the Ps in the relevant Polish constructions pattern with one-, not two-place selectors.

- If *za* were a raising preposition, i.e. the head of a predicative PP, such PPs would display the distribution of other predicative categories, but they do not. Therefore they are optimally analyzed as nonpredicative (one-place) predicates, and cannot support the transfer of information exhibited in (1).

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Inferences

- In both cases, information about one constituent that must be accessible to another constituent is formally inaccessible because of the removal of the necessary information from the relevant valence list as part of ordinary phrasal combinatorics.
- Therefore some record of the required information must persist up the relevant level of phrasal structure, and this information, in Przepiórkowski's view, can only be obtained from the ARG-ST list, assuming that the standard HPSG feature-matching principles are left intact.

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Argument 2

Case matching between quantifier phrases and the predicate adjectives that agree with them requires that both heads and valents in such phrases be visible to these adjectives, but such visibility is precluded by the HPSG saturation mechanism.

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Predication from within a PP

Data:

(2) Uważałem go za szczerego.
I considered him_{acc} as sincere_{acc}
'I considered him to be sincere.'

Uważałem go za studenta.
I considered him_{acc} as student_{acc}
'I considered him to be a student.'

Analysis:

- *uważać* (*consider*): object-to-subject raising verb

But *za* cannot be a raising preposition as in (2).

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Why *za* is not a raising preposition

- In Polish anaphors can only be bound by subjects;
- nonetheless, examples such as the following are permitted:

(3) Nie można przecieź położyć książki_i na sobie_{??i} samej
 Not may but lay book_{fem} on self Emph_{fem}
 'But it is impossible to lay a book on itself.'

Nie można przecieź położyć książki_i na niej_{??i} samej
 Not may but lay book_{fem} on her Emph_{fem}
 'But it is impossible to lay a book_i on it_i.'

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Why *za* is not a raising preposition (cont'd)

- In both post-copula and exclamative contexts (analogous to English examples such as *Rocco in danger?! What a horrible thought!*), PPs can appear freely, but only if they are predicative, e.g., *w domu*:

(5) Janek jest w domu/*za szczerego
 John is at home/as sincere
 'John is at home/*as sincere'

- But as (5) shows, *za szczerego* cannot appear in postcopula position (nor can it appear as a predicate in exclamatives).
- These facts preclude not only treating *za* as a predicative (i.e., two place) head, but also as treating it as a marker, since in that case *za szczerego* would be an AP and the head of this AP.
- *szczerego*, is itself predicative.

It follows that *za* must be a nonpredicative (one-place) selecting head.

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- Therefore prepositions such as *na* must be understood as taking both subject and complement valents, with (as AP asserts) a raising relation between the complement of *położyć*, allowing the unrealized subject structure-shared with the higher object to bind the object complement of *na*.
- But *za* does not pattern like *na*, but rather like nonpredicative Ps:

(4) Uważałem go_i za siebie_{*i} samego.
 considered him_{acc} as self Emph_{masc}
 'I really considered him as himself'

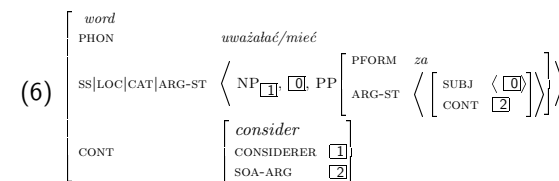
Uważałem go_i za niego_i samego.
 considered him_{acc} as him Emph_{masc}
 'I really considered him as himself.'

- Therefore *za* is a one-place, nonraising preposition.

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AP's solution

The most straightforward way of dealing with such [raising verb complement] environments is to allow the ARG-ST of the preposition *za* to percolate up to the PP[*za*]; once this is allowed, verbs like *uważać* and *mieć* (and other similar verbs) may have lexical entries such as [(6)]...:



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Case assignment with Numeral Phrases

- In Polish, predicate adjectives agree with their subject NPs,
- *except* when the subject is a quantifier/numeral phrase:

(7) [Kilka drzew] było [wyrwane z ziemi]
 a few_{acc} trees_{gen} was_{3rd.sg.neut} torn_{acc} from earth
 'A few tree were uprooted'

(8) [Kilka drzew] było [wyrwane z ziemi]
 a few_{acc} trees_{gen} was_{3rd.sg.neut} torn_{gen} from earth
 'A few tree were uprooted'

- In Polish, there is good evidence that the accusative head of the Numeral/quantifier Phrase is the head. How then can the predicate adjective in (8) gain access to information about the case of the saturating complement?

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Is there an alternative?

- Could this agreement pattern reflect a combination of true agreement with a kind of default assignment of genitive case to the adjective if the true agreement option isn't taken?
 - No, because if this were a general pattern, it would falsely predict that *any* nominative NP subject could take a predicate adjective with genitive case marking, a prediction contradicted as a matter of course in simple cases such as **Janek*[nom] *jest milego*[gen] 'John is nice', etc.
- Could this agreement pattern then reflect an automatic assignment of genitive to the predicate adjective if true agreement *with a Numeral/Quantifier Phrase* isn't effected?

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The mechanism of case agreement

- (9) a.
$$\left[\begin{array}{l} \text{word} \\ \text{PHON} \end{array} \quad \begin{array}{l} \text{być} \\ \text{SUBJ} \end{array} \begin{array}{l} \boxed{1} \\ \text{COMPS} \end{array} \left\langle \begin{array}{l} \text{XP} \left[\begin{array}{l} \text{PRD} \\ \text{SUBJ} \end{array} \right] + \boxed{1} \end{array} \right\rangle \right] \right]$$
- b.
$$\left[\begin{array}{l} \text{category} \\ \text{HEAD} \end{array} \left[\begin{array}{l} \text{PRD} \\ \text{CASE} \end{array} \right] \begin{array}{l} + \\ \boxed{1} \end{array} \right] \supset \boxed{1} = \boxed{2}$$

$$\left[\begin{array}{l} \text{VAL|SUBJ} \\ \text{HEAD|CASE} \end{array} \left[\begin{array}{l} \text{HEAD|CASE} \\ \text{CASE} \end{array} \right] \boxed{2} \right]$$
- c.
$$\left[\begin{array}{l} \text{category} \\ \text{HEAD} \end{array} \left[\begin{array}{l} \text{PRD} \\ \text{CASE} \end{array} \right] \begin{array}{l} + \\ \boxed{1} \end{array} \right] \supset \left[\boxed{1} = \boxed{2} \vee \left[\boxed{1} = \boxed{3} \right] \right]$$

$$\left[\begin{array}{l} \text{VAL|SUBJ} \\ \text{HEAD|CASE} \end{array} \left\langle \begin{array}{l} \text{HEAD|CASE} \\ \text{ARG-ST} \end{array} \left[\begin{array}{l} \text{CASE} \\ \text{NP} \end{array} \right] \boxed{2} \right] \right]$$

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- No, because in certain registers of Polish, the numerals from *dwa* 'two' to *cztery* 'four' do not allow the 'default' nonagreement genitive assignment: *(Te)*[acc] *cztery*[acc] *tygodnie*[acc] *było mordercze*[acc]/**morderczych*[gen] '(These) four weeks were murderous.'

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Other alternatives

- Could Polish have ambiguous headedness in numeral/QPs, so that a given such phrase has a structural description in which the accusative numeral/Q is the head and another in which the genitive nominal is head, giving rise to two different patterns of agreement with 'the' head?
 - No, because when an attributive adjective appears within the numeral/QP subject, these two can be either accusative or genitive, so if the alternation in case in adjectives generally were the result of ambiguous headedness, it would follow that depending on whether the numeral/Q or the nominal were the head, *both* adjectives—the attributive and the adjectival—should reflect identical case values, a prediction that fails:

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- Could Num/QPs be *doubly* headed, so that agreement with the subject is forced, but the case value of the subject is simultaneously genitive and accusative and the form that agreement takes is unforced?
 - No, because apart from the serious technical problem of implementing such a suggestion in a way that makes formal sense, the proposal appears to predict that Num/QPs should be able to appear indifferently in accusative and genitive environments, whereas in fact such Num/QPs headed by accusative quantifiers cannot appear in environments which require a genitive constituent.

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(10) Leniwe siedem kotów było śpiących.

lazy_{acc} seven_{acc} cats_{acc} were sleepy_{gen}

'Seven lazy cats were sleepy.'

Leniwych siedem kotów było śpiące.

lazy_{gen} seven_{acc} cats_{acc} were sleepy_{acc}

'Seven lazy cats were sleepy.'

Hence the choice must really be free, rather than determined.

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Adam's proposal: final form

- AP concludes from the preceding that the only solution which fits the facts is that the ARG-ST value of lexical heads must be visible on phrasal projections of those heads;
- but he also believes that this visibility can be limited to a highly restricted class of cases, and explicitly takes this restriction to limit acceptably the increase in expressiveness that allowing ARG-ST to appear on phrases confers on the theory.

(11) The value of the ARG-ST [attribute] on a headed phrase is structure-shared with the value of ARG-ST on its head daughter if the head daughter is semantically vacuous, and is the empty list otherwise.

(12) A sign is *semantically vacuous* iff its CONT is structure-shared with that of one of its arguments

(p. 278.)

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Subsidiary claim: numerals and quantifiers in Polish are semantically vacuous

- In order for a non-null ARG-ST value to appear on the Num/QP so as to make the case value of the nominal argument of the head visible to the predicate adjective, it must follow from (11 and (12) that Num/Qs have no CONTENT distinct from their nominal complement.

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Adam's answers to the guiding questions

Which properties need to be accessible?

- PPs: whatever participates in raising (case, index, . . .)
- numeral phrases: case

How far and when are they visible?

- Entire head domain

Theoretical interpretation:

- Which representation and percolation mechanisms make the properties visible?
 - ARG-ST

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- Evidence for this point:
 - the standard analysis of Num/QPs in Polish is that the Num/Q heads the phrase;
 - emphatic reflexives reveal agreement in sentences with Num/QP subjects reveal agreement for number and gender between the reflexive phrase and the subject, which is what would be entailed by coindexation as per the binding theory;
 - therefore the index of the head of the phrase, the Num/Q, must be the same as that of the reflexive phrase;
 - but the index value of the reflexive appears to covary with the form of the nominal complement in the subject phrase;
 - therefore, it follows that the index of the Num/Q and its nominal complement covary and must be assumed to be shared,
 - implying that the two share CONT type, viz., *nom-obj*,
 - and since the quantification force of the quantifier is associated with a value of a feature NEW-QS which is distinct from CONT,
 - the putatively simplest account of the facts takes the CONT of quantifiers to be identical to that of their nominal arguments and their quantificational semantics to be due entirely to the specification of a different attribute,
- confirming the subsidiary claim.

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- For semantically vacuous heads, the ARG-ST value of a phrase is identified with that of the head daughter; else it is the empty list.
- How is the obliqueness relation used once it is visible?
 - Dedicated principles or lexical entries (cannot be the ordinary ones, since arg-st is not always present).

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Some open questions about AP's proposal

- How is the pattern exhibited in data such as *(Te)[acc] cztery[acc] tygodnie[acc] było mordercze[acc]/*morderczych[gen]* '(These) four weeks were murderous', already discussed, any less a problem for the ARG-ST percolation mechanism that AP proposes than for the nonagreement option solution he uses this data to challenge?
 - The problem of this data for the nonagreement/default genitive approach is that it shows the restriction of the default genitive assignment pattern to Num/QPs to be insufficient. Thus an extra restriction would have to be introduced to maintain this alternative.
 - But the statement of agreement in (9) would *also* have to be subject to an extra restriction to handle this same class of cases. As stated, (9) incorrectly includes the Num/QPs headed by the exceptional numerals in the range of cases that are predicted to show the accusative/genitive case alternation
- Hence AP's argument does not succeed in disposing of this alternative interpretation of the Polish case agreement facts involving predicate adjectives.

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- AP's comment:

Another possible restriction has been proposed by Ivan Sag (p.c.), who notes that cross-linguistically, arguments that must be visible outside the immediate phrases in which they are realized are usually subjects, so—instead of making the whole ARG-ST available on phrases—it should suffice to make the subjects available, perhaps by requiring that SUBJ be a head feature... This proposal cannot be directly applied to the data considered above because, in cases of long raising across a preposition, the COMPLEMENT of a preposition must be visible at the PP. While this proposal might be modified in terms of *the first argument on* ARG-ST instead of *the subject*, the solution proposed below is more restrictive than such a modification and thus should be preferred.

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A second question: why not SUBJECT?

- Both of the cases AP discusses could be handled solely by making the least oblique complement of the selecting head visible at the phrasal level, along the lines of Detmar's SUBJECT feature which I have also adapted to my treatment of TOUGH complement structure, or Bender & Flickinger's use of Kathol's AGR feature. The AGR feature proposed in Kathol (1999) offers very strong, completely independent motivation for controlled extracausal percolation of information about subject arguments out of clauses. Given the range and depth of the support Kathol (1999) provides for this limited nonlocality on the basis of a complex web of agreement patterns, what reason would there for projecting instead the whole ARG-ST list?

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AGR: SUBJ or least oblique?

Adam's comment carries the implication that even though one *could* redefine Sag's 'designated argument' in terms of least-obliqueness rather than subjecthood, it would be somewhat stipulative to do so, a kind of special-purpose add-on. But notice that Kathol's proposal will naturally be couched in terms of the notion 'least oblique' if recent arguments by Tony Warner are correct that inverted subjects in interrogative and other constructions do not match SUBJ specifications but rather correspond to least-oblique COMPS specifications, with SUBJ taking the empty list in such cases as its value. Similar arguments have been made by Borsley for nonfinite (VSO) clause structure in Welsh, based on cliticization patterns. If these arguments are correct, then Kathol's AGR hypothesis effectively demands reformulation as a relationship between MORSYN specifications of the verb on the one hand and its least oblique ARG-ST element, rather than

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its *SUBJ* element. Thus the discussion requires the indicated reformulation in any case, and, to the extent that Kathol's work motivates an *AGR* feature in the first place, the appeal to 'least oblique' argument for the relevant Polish data is independently motivated.

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- Therefore, a claimed restriction of a valence-based feature's distribution to contexts depending on the semantic contentfulness of its source is not restrictive in any theoretically nontrivial sense. It allows the grammar to spread information about dependents of a head throughout a head domain subject to an essentially *arbitrary* condition.

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What is restrictiveness?

My take on Adam's restrictiveness claim:

- AP's solution, discussed at length to this point, ties the percolation of non-null *ARG-ST* on a phrasal category to the semantic contentfulness of its head.
- But there is no functional or logical connection between the semantic contentfulness of a head and its list of arguments. Contentful things such as attributive adjectival modifiers have empty *ARG-ST* lists on most analyses I'm familiar with; contentless things such as auxiliary *do* have at least two elements on their *ARG-ST* lists corresponding to non-null *SUBJ* and *COMPS* values.

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The crystal analogy

Hypothesis 1: The number of faces a crystal displays will be correlated with its color.

Hypothesis 2: The number of faces a crystal displays will be correlated with the number of syllables in its geological name in English.

Which of these hypotheses incorporates a genuinely restrictive account of crystal formation?

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A third question: *are* quantifiers semantically vacuous?

- Suppose that the nominal is the semantic head of the Num/QP, as adverbs in Pollard and Sag (1994) are the semantic head of the VP;
- then the *CONT* of the Num/QP will be that of the semantic head, including the *INDEX* value;
- in which case there is no equation of the *CONT* type of the num/Q syntactic head and the type of its nominal complement;
- and the conclusion that num/Qs share their content with their nominal argument no longer follows.

Where do these considerations leave the claim that only percolation of *ARG-ST* to heads is a defensible solution to the problem posed by the Polish data?

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References

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