

# ARG-ST on Phrases Headed by Semantically Vacuous Words: Evidence from Polish

Adam Przepiórkowski  
adamp@ling.ohio-state.edu

22 July 2000

- **a controversy:** should ARG-ST be present **only on *words*** as assumed in various HPSG analyses (Pollard and Sag, 1994; Miller and Sag, 1997; Abeillé *et al.*, 1998; Bouma *et al.*, 1999), or should it be present **also on *phrases***, as assumed in various other HPSG analyses (Grover, 1995; Frank, 1994; Frank and Reyle, 1995; Calcagno and Pollard, 1997; Abeillé and Godard, 2000; Baxter, 1999; Meurers, 1999)?
  - ARG-ST on *words* only because this leads to more restrictive grammars (words cannot select their arguments on the basis of the argument structure of these arguments' heads);
  - ARG-ST also on *phrases* because this seems necessary (under some additional assumptions) to analyze phenomenon X (e.g., X = French causatives, case assignment in German verb clusters, scope and word order in German, etc.);
- **the aim of this paper:** to suggest that it is an empirical issue, to what extent ARG-ST should be present on *phrases*;<sup>1</sup>
- **the structure of the argument:**
  - look closely at one language (Polish);
  - try to identify environments where the presence of ARG-ST on *phrases* seems necessary;
  - try to find an alternative analysis (and fail);
  - try to uniformly characterize these environments;
  - claim that this uniform feature of these environments is what triggers the presence of ARG-ST on *phrases*;
  - otherwise *phrases* do *not* inherit ARG-ST from their daughters.

---

<sup>1</sup>This claim is implicit in Abeillé and Godard (2000, n. 9), where it is suggested that ARG-ST should be present on *words* and a small subset of *phrases*, namely, *lite phrases*.

- **outline of the paper:**

- phenomenon 1: predicative modification of numeral phrases;
- phenomenon 2: raising across prepositions;
- an attempt at a uniform characterization of these two phenomena.

## 1 Raising across Prepositions

- (1) Uważałem go za szczerego / studenta.  
 I considered him<sub>acc</sub> as sincere<sub>acc</sub> / student<sub>acc</sub>  
 ‘I considered him to be sincere / to be a student.’
- (2) Miałem go za szczerego / studenta.  
 I had him<sub>acc</sub> as sincere<sub>acc</sub> / student<sub>acc</sub>  
 ‘I took him to be sincere / to be a student.’

**Assumption 1** (potentially controversial): the PP[*za*] in (1)–(2) is headed by a 1-argument *non*-predicative (‘case-marking’) preposition, although its argument (*szczerego / studenta* above) is a predicative phrase.

**Assumption 2** (uncontroversial): the verbs *uważać* and *mieć* in (1)–(2) are raising verbs: the subject of the argument of *za* (i.e., the subject of *szczerego / studenta* in (1)–(2)) must be structure-shared with the object of the verb (i.e., with *go* in (1)–(2)).

**Then:** the structure of (1) must be as in Figure 1 (p. 3), and *not* as in Figure 2 (p. 4).

This effect can be achieved if these raising verbs have lexical entries as schematically represented in (3).

$$(3) \left[ \begin{array}{l} \textit{word} \\ \text{PHON } \textit{uważać} / \textit{mieć} \\ \text{ARG-ST } \langle \text{NP } \boxed{1}, \boxed{0}, \text{PP} \left[ \begin{array}{l} \text{PFORM } \textit{za} \\ \text{ARG-ST } \langle \left[ \begin{array}{l} \text{SUBJ } \langle \boxed{0} \rangle \\ \text{CONT } \boxed{2} \end{array} \right] \rangle \end{array} \right] \rangle \\ \text{CONT } \left[ \begin{array}{l} \textit{consider} \\ \text{CONSIDERER } \boxed{1} \\ \text{SOA-ARG } \boxed{2} \end{array} \right] \end{array} \right]$$

Note that in (3) the verb can look into the argument structure of its PP complement and *must* do so in order to raise the subject of the NP/AP inside this PP to its object position.

Assumption 2 above (*uważać*, etc. as raising verbs) is uncontroversial (e.g., Tajsner (1990)). Assumption 1 will be defended below.

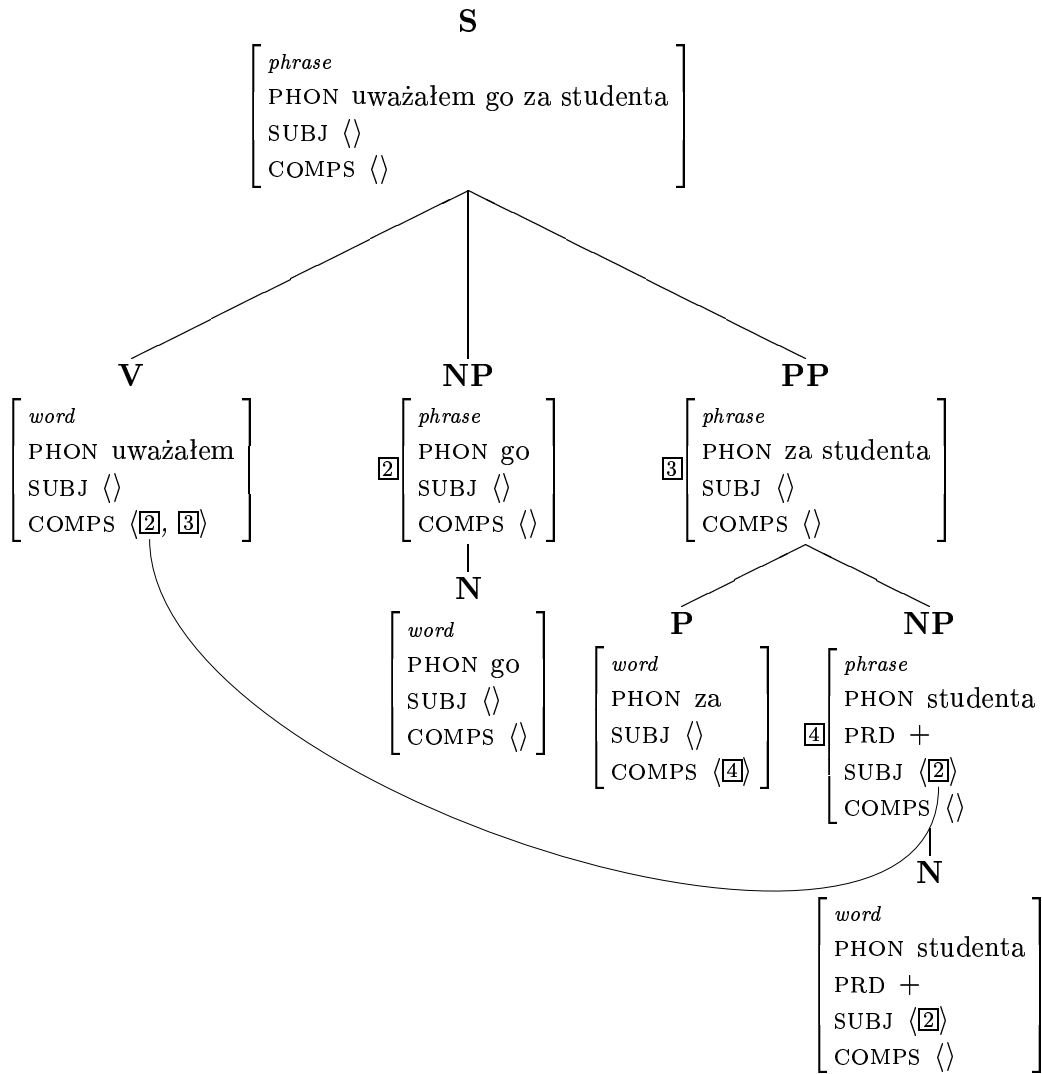
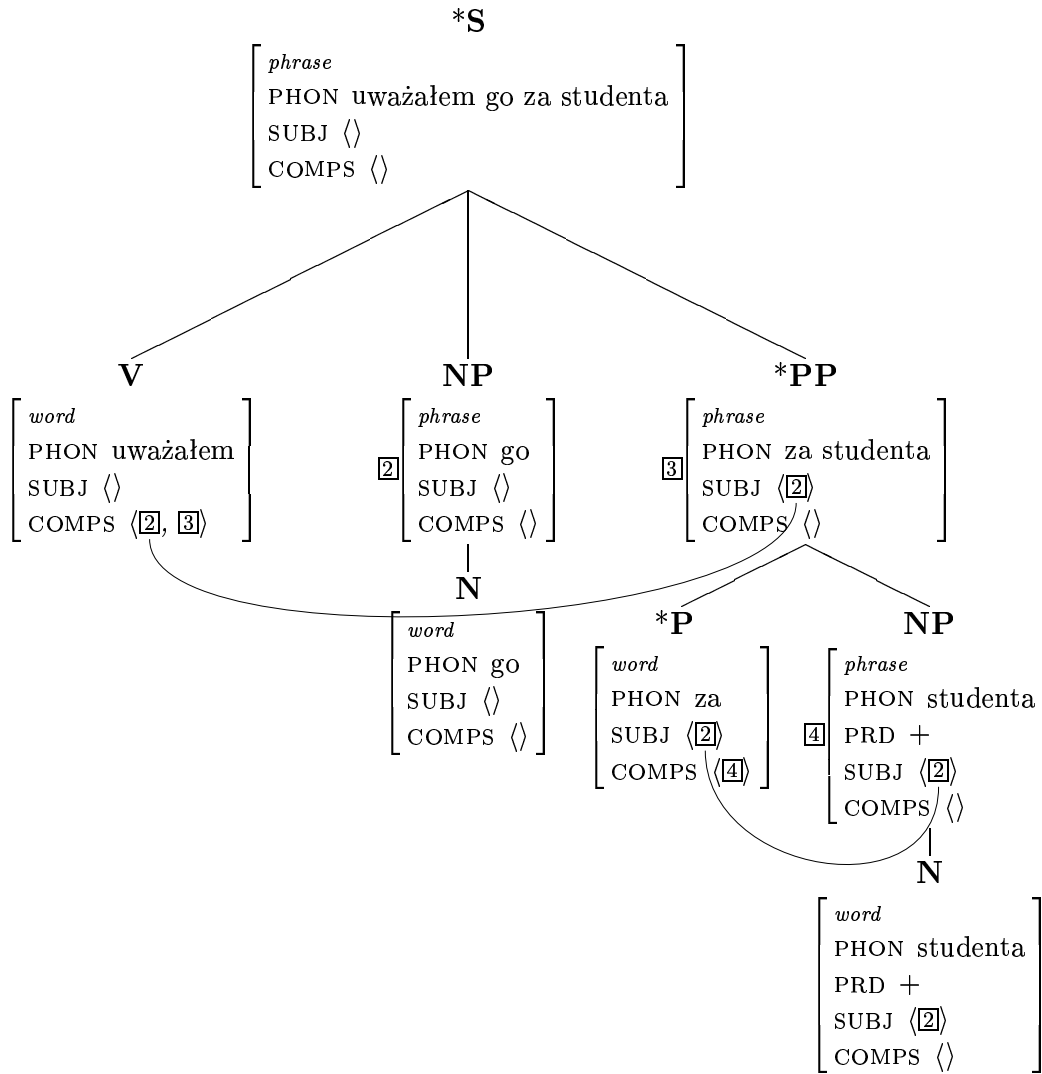


Figure 1: The structure of (1)

Figure 2: *Not* the structure of (1)

## (Im)Possible Alternatives

**Za as a 2-Argument Preposition (cf. Figure 2)** In English, there is a difference in binding between a 1-argument preposition and a 2-argument preposition (Wechsler, 1997). Similar difference in Polish:

- (4) Nie można przecież położyć książki<sub>i</sub> na sobie<sub>?i</sub> samej / na niej<sub>??i</sub> samej.  
 not may but lay book<sub>fem</sub> on Self Emph<sub>fem</sub> / on her Emph<sub>fem</sub>  
 ‘But it is impossible to lay a book on itself.’
- (5) Mówiłem jej<sub>i</sub> o sobie<sub>\*i</sub> samej / o niej<sub>i</sub> samej.  
 I talked her about Self Emph<sub>fem</sub> / about her Emph<sub>fem</sub>  
 ‘I talked to her about herself.’

The preposition *za* as used in (1) clearly patterns with 1-argument prepositions, such as *o* in (5).

- (6) (Nie pomyliłem się,) uważałem go<sub>i</sub> za siebie<sub>\*i</sub> samego / za niego<sub>i</sub>  
 I wasn’t confused, considered<sub>1st,sg,masc</sub> him<sub>acc</sub> as Self Emph<sub>masc</sub> / as him  
 samego.  
 Emph<sub>masc</sub>  
 ‘(I wasn’t confused,) I really considered him as himself.’

Despite pragmatic weirdness of (6), the coindexation between *go* and the pronoun *niego* is interpretable, while the coindexation between *go* and the anaphor *siebie* is completely uninterpretable.

**Za as a Marker** According to this analysis, the PP[*za*] is really a predicative AP/NP[MARKING *za*].

Two problems:

1. If *za* is a marker, then the whole *za*-phrase is a predicative phrase, just as the unmarked AP/NP. If so, the *za*-phrase should be able to occur in environments which allow any predicative phrases, such as complements of copula or exclamatives. (7)–(8) show that this prediction is false:

- (7) Janek jest szczerzy / prezydentem / w domu... / \*za szczerzego.  
 John<sub>nom</sub> is sincere<sub>nom</sub> / president<sub>ins</sub> / at home... / as sincere  
 ‘John is sincere / the president / at home... / \*as sincere.’

- (8) Janek szczery! / Wałęsa prezydentem! / Krokodyl w klatce! / Obiad o dziesiątej!  
 John sincere<sub>nom</sub> / Wałęsa president<sub>ins</sub> / crocodile in cage / dinner at ten  
 / \*Janek za szczerego! (Też pomysł!)  
 / John as sincere also idea  
 ‘John (being) sincere! / Wałęsa (as) the president! / A crocodile in a cage! / Dinner at 10! \*John as sincere! What an idea!

The copula in (7) could, in principle, impose an idiosyncratic constraint to the effect that its complement cannot be marked with *za*.

**But:**

- (9) such a constraint would violate the otherwise overwhelming generalization that the copula may combine with any predicative complement;  
 (10) it is not clear that such a constraint could be imposed in case of (8), where there is no overt copula and no obvious reason to posit a phonologically empty one.

2. Prepositions assign case, markers do not. In (1)–(2), *za* clearly assigns the accusative to the predicative AP/NP.

Why *clearly*? Two alternatives:

- the accusative is the result of agreement with the accusative NP *go*;
- the accusative is assigned by the verb.

Both alternatives are falsified by the genitive of negation (obligatory case shift of a verb’s arguments from accusative to genitive when the verb is negated):

- (11) Nie uważałem jej za szczerą / \*szczerej / studentkę / \*studentki.  
 not I considered her<sub>gen</sub> as sincere<sub>acc</sub> / sincere<sub>gen</sub> / student<sub>acc</sub> / student<sub>gen</sub>  
 ‘I didn’t consider her to be sincere / to be a student.’

**PP[*za*] as a Thematic Predicate** Thematic predicates in the sense of Wechsler (1997) (see also Verspoor (1997, ch.3)) are syntactically optional while PP[*za*] is syntactically obligatory.

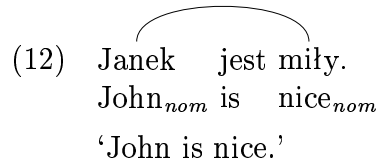
More seriously, for this alternative to work, the verb *uważać* ‘consider’ would have to assign a role to its object, but this would contradict the main property of raising verbs, i.e., that they do not assign a role to the raised argument.

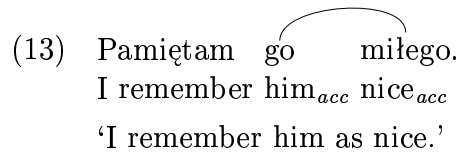
Finally, analysing the PP[*za*] as a thematic predicate would predict only coindexation of the subject of the predicative AP with the object of the verb, instead of the expected full structure-sharing of *synsem* characteristic for raising.

See Przepiórkowski (2000a) for a more complete analysis of constructions such as (1)–(2).

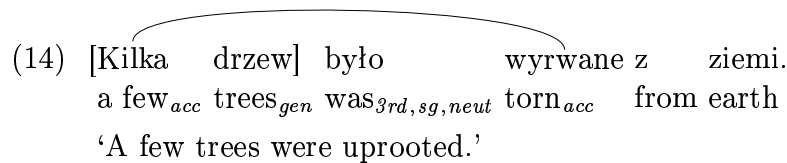
## 2 Predicative Modification of Numeral Phrases

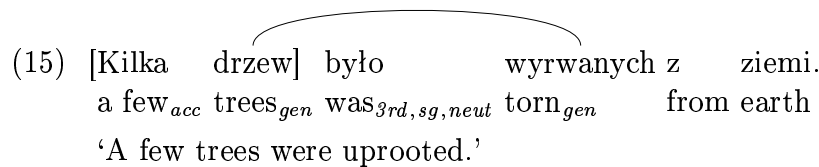
In Polish, as in other languages, predicative nominals agree in case with the phrase they are predicated of:<sup>2</sup>

- (12)   
 Janek jest miły.  
 John<sub>nom</sub> is nice<sub>nom</sub>  
 ‘John is nice.’

- (13)   
 Pamiętam go miłego.  
 I remember him<sub>acc</sub> nice<sub>acc</sub>  
 ‘I remember him as nice.’

But in case of predication of a class of quantifier / numeral phrases, the predicate may agree either with the accusative quantifier head or with the genitive NP:

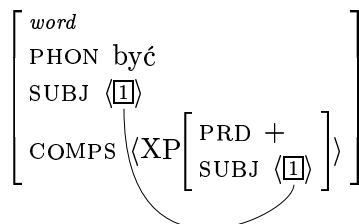
- (14)   
 [Kilka drzew] było wyrwane z ziemi.  
 a few<sub>acc</sub> trees<sub>gen</sub> was<sub>3rd, sg, neut</sub> torn<sub>acc</sub> from earth  
 ‘A few trees were uprooted.’

- (15)   
 [Kilka drzew] było wyrwanych z ziemi.  
 a few<sub>acc</sub> trees<sub>gen</sub> was<sub>3rd, sg, neut</sub> torn<sub>gen</sub> from earth  
 ‘A few trees were uprooted.’

(15) is unexpected.

**Assumption 1** (uncontroversial): in predication, the subject of the predicate is identified with the (*synsem* of) the phrase being predicated of, e.g.:

- (16) The predicative copula *być* (schematic and simplified):



**Assumption 2** (uncontroversial): predicative case agreement (as in (12)–(14) above) is really agreement between the predicate and *its* subject:

<sup>2</sup>I ignore here so-called ‘instrumental of predication’; cf. Przepiórkowski (1999).

$$(17) \left[ \begin{array}{l} \text{HEAD} \left[ \begin{array}{l} \text{PRD } + \\ \text{CASE } \boxed{2} \end{array} \right] \\ \text{SUBJ } \langle \left[ \text{HEAD} | \text{CASE } \boxed{2} \right] \rangle \end{array} \right]$$

This follows from locality and non-configurationality of case marking (cf. Przepiórkowski (1999)).

**Then:** in (15),

- the genitive predicative phrase *wyrwanych z ziemi* agrees with the genitive NP *drzew* in the sense that
- it agrees with its SUBJECT element, i.e.,
- it agrees with the *synsem* of the QP *kilka drzew*.

**But** the *synsem* of the QP *kilka drzew* does not contain anything genitive! **Unless**, that is, the quantifier's ARG-ST percolates to the QP — then the *synsem* of the genitive NP *drzew* is present within the *synsem* of the QP *kilka drzew*, namely, in its ARG-ST:

(18) *synsem* of the QP *kilka drzew*:

$$\left[ \begin{array}{l} \textit{synsem} \\ \dots | \text{CAT} \left[ \text{VAL} \left[ \text{SUBJ } \langle \rangle \right] \right] \end{array} \right] \quad \text{vs.} \quad \left[ \begin{array}{l} \textit{synsem} \\ \dots | \text{CAT} \left[ \text{VAL} \left[ \begin{array}{l} \text{SUBJ } \langle \rangle \\ \text{COMPS } \langle \rangle \end{array} \right] \right] \\ \text{ARG-ST } \langle \text{NP}[\text{CASE } \textit{gen}] \rangle \end{array} \right]$$

So, if ARG-ST is present on the QP, then predicative agreement with that QP could be defined as either agreement with the QP's CASE or agreement with CASE of QP's argument.

Ugly, but 1) preserves the locality assumptions above and 2) Slavic numeral / quantifier phrases *are known* to be ugly! (Corbett, 1978; Franks, 1994; Przepiórkowski, 1999)

See Appendix B for a sketch of the analysis of such constructions.

## (Im)Possible Alternatives

**Genitive of Predication** According to this alternative, the genitive case on the predicate in (15) is not the result of agreement at all, but rather a 'non-agreeing' option, like the 'instrumental of predication' in Slavic.

Wrong prediction: (19)–(20) below, to be compared with (12)–(13) above, should be grammatical.

- (19) \*Janek jest miłego.  
 John<sub>nom</sub> is nice<sub>gen</sub>  
 'John is nice.'



- (20) \*Pamiętam ją miłą.  
 I remember her<sub>acc</sub> nice<sub>gen</sub>  
 ‘I remember her as nice.’

A refinement: such a ‘genitive of predication’ is restricted to numeral subjects. Doesn’t work either:

- (21) %(Te) cztery tygodnie było mordercze / \*morderczych.  
 these<sub>acc</sub> four<sub>acc</sub> weeks<sub>acc</sub> was murderous<sub>acc</sub> / murderous<sub>gen</sub>  
 ‘These four weeks were murderous.’

**QPs as QP/NP Ambiguous** Assume that there is a structural ambiguity of numeral phrases: they could be headed either by the accusative numeral, in which case they would occur with accusative predicates, as in (14), or by the genitive noun, in which case they would occur with genitive predicates, as in (15).

Fact: attributive modifiers show the same case agreement ambiguities as predicative modifiers.

Wrong prediction: when such an QP/NP is modified both by an attributive adjective and by a predicative adjective, these adjectives should be either both accusative (in case the QP/NP is headed by the numeral) or both genitive (in case it is headed by the noun).

- (22) a. Leniwe siedem kotów było śpiących.  
 lazy<sub>acc</sub> seven<sub>acc</sub> cats<sub>gen</sub> was sleepy<sub>gen</sub>  
 ‘Seven lazy cats were sleepy.’  
 b. Leniwych siedem kotów było śpiące.  
 lazy<sub>gen</sub> seven<sub>acc</sub> cats<sub>gen</sub> was sleepy<sub>acc</sub>  
 ‘Seven lazy cats were sleepy.’

**QPs as Q+NP Appositions** In Polish, appositions always agree in case, so the quantifier and the NP should have the same case. They don’t.

**QPs as Bi-Headed** According to this hypothesis, QPs are simultaneously headed by the quantifier and by the noun, and both case values are available for agreement.

A technical problem: it is not clear how bi-headedness could be formalized in such a way that both heads contribute their case values. (Previous analyses of bi-headedness assume that different heads of a construction contribute *different* sets of features or, when two heads do attempt to contribute values of the same feature, only one of them wins and the other one is suppressed.)

An empirical problem: if such bi-headed QPs were accusative and genitive at the same time, they should be able to occur in both accusative and genitive environments. This prediction is false: QPs headed by accusative quantifiers cannot occur in genitive environments.

- (23) Bałem się tych kilku drzew / \*kilka drzew.  
 feared RM these<sub>gen</sub> a few<sub>gen</sub> trees<sub>gen</sub> / a few<sub>acc</sub> trees<sub>gen</sub>  
 ‘I was afraid of (these) several trees.’

### 3 ARG-ST on Phrases with Semantically Vacuous Heads

Desideratum: Constrain the presence of ARG-ST on *phrases* to those cases where this presence is really necessary.

Problem: How to uniformly characterize prepositional phrases of section 1 and numeral phrases of section 2?

A tentative proposal: only ARG-ST of *semantically vacuous* heads ‘percolates’ to phrases (in Polish).<sup>3</sup>

- (24) ARG-ST on *Phrases* (Polish):

The value of the ARG-ST on a headed phrase is structure-shared with the value of ARG-ST of its head daughter if the head daughter is semantically vacuous, and it is the empty list otherwise.

- (25) A sign is *semantically vacuous* iff its CONT value is structure-shared with that of one of its arguments. (Pollard and Yoo, 1998; Przepiórkowski, 1997, 1998)

The class of semantically vacuous words is very limited.

Typical examples of semantically vacuous words: non-predicative (‘case-assigning’) prepositions (Pollard and Sag, 1994, pp. 255, 347ff.), predicative copula (Pollard and Sag, 1994, p. 147), and English *to* and the auxiliary *be* (Pollard and Yoo, 1998).

Since *za* is a non-predicative preposition, the presence of its ARG-ST on its projections is predicted by (24). What about numeral phrases, though? *Can* they be classified as semantically vacuous (from a technical point of view)? If so, *should* they be so analyzed (from an empirical point of view)?

**Can Numerals be Semantically Vacuous?** According to the analysis of quantification in Przepiórkowski (1997, 1998) (which builds on Pollard and Yoo (1998) and Manning *et al.* (1999)), quantifiers are introduced as values of the attribute NEW-QS (appropriate for *word*) and collected into the QSTORE value via general principles. If so, technically, it is plausible to analyse quantifier words as introducing the *quant* value *only* in NEW-QS and sharing (the rest of) their CONTENT value with that of their NP argument, as in (26).

<sup>3</sup>See Appendix A for an RSRL formalization of (24)–(25).

$$(26) \left[ \begin{array}{l} \text{word} \\ \text{PHON pięć} \\ \text{SS|LOC} \left[ \begin{array}{l} \text{CONT } \boxed{0} \\ \text{CAT|ARG-ST } \langle \boxed{0} \rangle \end{array} \right] \\ \text{NEW-QS } \{5(\boxed{0})\} \end{array} \right]$$

### ***Should Numerals Share Their* CONTENT *Value with That of Their Argument?***

There is evidence that, in Polish, the numeral and its NP argument share at least INDEX values. Note that this argument implies in particular that the CONTENT value of numerals must be *nom-obj* and not *quant.* defended here.

(27) Pięciu facetów zobaczyło siebie samych w lustrze.  
 five<sub>acc</sub> guys<sub>gen</sub> saw<sub>3rd,sg,neut</sub> Self Emph<sub>pl,masc</sub> in mirror  
 ‘Five guys saw themselves in a mirror.’

(28) Pięć kobiet zobaczyło siebie same w lustrze.  
 five<sub>acc</sub> women<sub>gen</sub> saw<sub>3rd,sg,neut</sub> Self Emph<sub>pl,fem</sub> in mirror  
 ‘Five women saw themselves in a mirror.’

The argument: Binding involves co-indexation. Thus the index of the QP in (27)–(28) is the same as the index of the anaphor *siebie*. The index of the anaphor *siebie* in (27) is masculine plural, as evidenced by the morphology of the emphatic modifier of the anaphor, *samych*. This means that the index of the QP and the index of the quantifier *pięciu* in (27) is masculine plural, the same as the index of the NP *facetów*.

By the same reasoning, the index of the quantifier *pięć* in (28) is *feminine plural*, the same as the index of the NP *kobiet*.

Since the *index* of the quantifier and that of its NP argument systematically co-vary, I assume that the quantifier and the NP actually agree in *index*, i.e., that they share their INDEX values.

Since 1) the CONTENT of the quantifier and of its NP argument are both *nom-obj* and 2) they have the same INDEX value, and 3) the quantifier does not introduce any meaning apart from the quantificational force captured in NEW-QS, it makes sense to postulate that the quantifier and the NP share their CONTENT values.

## 4 Summary

In this paper, I have:

- argued that ‘ARG-ST on *phrases*’ is not an ‘all or nothing’ issue;

- identified two environments in Polish which call for the presence of ARG-ST on *phrases*;
- shown that no alternatives to such ‘ARG-ST on *phrases*’ analyses are in sight;
- tentatively linked the presence of ARG-ST on *phrases* to the semantic vacuity of these environments.

Since semantically vacuous environments are extremely rare, the resulting grammar is not less restrictive than, say, a grammar which allows a verb to subcategorize for a lexical argument (and, hence, have access to this argument’s ARG-ST), a possibility often taken advantage of in HPSG analyses of complex predicates in various languages.

## A ARG-ST on Phrases — RSRL Formalization

Technically, I assume the presence of the *list(synsem)*-valued ARG-ST attribute on all *category* objects, and formalize (24)–(25) within RSRL (Richter *et al.*, 1999; Richter, 2000) as follows:

$$(29) \quad \forall x [ x \approx : \text{HEAD-DTR} \rightarrow \\ [ [\text{sem-empty}(x) \rightarrow : \text{SS LOC CAT ARG-ST} \approx x \text{SS LOC CAT ARG-ST}] \\ \wedge [ \neg \text{sem-empty}(x) \rightarrow : \text{SS LOC CAT ARG-ST} \sim \text{elist} ] ] ]$$

$$(30) \quad \text{sem-empty}(x) \stackrel{\forall}{\iff} \\ \exists y \exists z [ \\ y \approx x \text{SS LOC CAT ARG-ST} \\ \wedge \text{member}(z, y) \\ \wedge z \text{LOC CONT} \approx x \text{SS LOC CONT} ]$$

(See Richter *et al.* (1999) or Richter (2000) for the definition of `member`, as used in (30).)

## B Predicative Case Agreement with Quantifier Phrases

Full analysis is given in Przepiórkowski (1999, 2000b). The analysis encodes the observation that case agreement between a phrase XP and its modifier YP normally means the identity of XP’s and YP’s CASE values, but — in case XP is a numeral phrase — it might also mean the identity of CASE values of YP and XP’s first *argument*.

In Przepiórkowski (2000b), I extensively argue for linking this case agreement optionality when QPs are involved to the fact that quantifiers share indices with their NP arguments. On this basis, I propose the following case agreement principles (assuming RSRL as the underlying logic):

(31) Attributive case agreement:

$$\left[ \begin{array}{l} \text{head} \\ \text{CASE } \boxed{1} \\ \text{MOD|LOC } \boxed{2} \left[ \text{CAT|HEAD|CASE } \boxed{0} \right] \end{array} \right] \rightarrow \text{case-agreement}(\boxed{1}, \boxed{2})$$

(32) Predicative case agreement:

$$\left[ \begin{array}{l} \text{category} \\ \text{HEAD} \left[ \begin{array}{l} \text{CASE } \boxed{1} \\ \text{PRD } + \end{array} \right] \\ \text{SUBJ} \left\langle \left[ \text{LOC } \boxed{2} \left[ \text{CAT|HEAD|CASE } \boxed{0} \right] \right] \right\rangle \end{array} \right] \rightarrow \text{case-agreement}(\boxed{1}, \boxed{2})$$

(33) Definition of case agreement:

$$\text{case-agreement}(\boxed{1} \text{case}, \boxed{2} \text{local}) \leftrightarrow \left( \boxed{2} = \left[ \text{CAT|HEAD|CASE } \boxed{1} \right] \vee \boxed{2} = \left[ \begin{array}{l} \text{CAT|ARG-ST} \left\langle \left[ \begin{array}{l} \text{CASE } \boxed{1} \\ \text{INDEX } \boxed{3} \end{array} \right], \dots \right\rangle \\ \text{CONT|INDEX } \boxed{3} \end{array} \right] \right)$$

Note that these principles preserve the overwhelming generalization that case marking is a local / non-configurational phenomenon.

## References

- Abeillé, A. and Godard, D. (2000). French word order and lexical weight. In R. D. Borsley, editor, *The Nature and Function of Syntactic Categories*, volume 32 of *Syntax and Semantics*, pages 325–360. Academic Press, San Diego.
- Abeillé, A., Godard, D., and Sag, I. A. (1998). Two kinds of composition in French complex predicates. In E. Hinrichs, A. Kathol, and T. Nakazawa, editors, *Complex Predicates in Nonderivational Syntax*, volume 30 of *Syntax and Semantics*, pages 1–41. Academic Press, New York.
- Baxter, D. P. (1999). *English Goal Infinitives*. Ph.D. thesis, University of Illinois at Urbana-Champaign.
- Bouma, G., Malouf, R., and Sag, I. (1999). Satisfying constraints on extraction and adjunction. To appear in *Natural Language and Linguistic Theory*.
- Calcagno, M. and Pollard, C. (1997). Argument structure, structural case, and French causatives. Paper delivered during the 4th International Conference on HPSG, 18–20 July 1997, Ithaca, New York.
- Corbett, G. (1978). Numerous squishes and squishy numerals in Slavonic. In B. Comrie, editor, *Classification of Grammatical Categories*, pages 43–73. Linguistic Research, Inc., Edmonton.

- Frank, A. (1994). Verb second by underspecification. In H. Trost, editor, *KONVENS'94*, pages 121–130, Vienna.
- Frank, A. and Reyle, U. (1995). Principle based semantics for HPSG. In *7th Conference of the European Chapter of the Association for Computational Linguistics*, pages 9–16, University College Dublin, Belfield, Dublin, Ireland. Association for Computational Linguistics.
- Franks, S. (1994). Parametric properties of numeral phrases in Slavic. *Natural Language and Linguistic Theory*, **12**(4), 597–674.
- Grover, C. (1995). *Rethinking Some Empty Categories: Missing Objects and Parasitic Gaps in HPSG*. Ph.D. thesis, University of Essex.
- Manning, C. D., Sag, I. A., and Iida, M. (1999). The lexical integrity of Japanese causatives. In R. D. Levine and G. Green, editors, *Studies in Contemporary Phrase Structure Grammar*, pages 39–79. Cambridge University Press, Cambridge.
- Meurers, W. D. (1999). *Lexical Generalizations in the Syntax of German Non-Finite Constructions*. Ph.D. thesis, Universität Tübingen.
- Miller, P. H. and Sag, I. A. (1997). French clitic movement without clitics or movement. *Natural Language and Linguistic Theory*, **15**, 573–639.
- Pollard, C. and Sag, I. A. (1994). *Head-driven Phrase Structure Grammar*. Chicago University Press / CSLI Publications, Chicago.
- Pollard, C. and Yoo, E. J. (1998). A unified theory of scope for quantifiers and *wh*-phrases. *Journal of Linguistics*, **34**, 415–445.
- Przepiórkowski, A. (1997). Quantifiers, adjuncts as complements, and scope ambiguities. To appear in *Journal of Linguistics*. Draft of December 2, 1997. Available from: <http://www.ling.ohio-state.edu/~adamp/Drafts/>.
- Przepiórkowski, A. (1998). ‘A Unified Theory of Scope’ revisited: Quantifier retrieval without spurious ambiguities. In G. Bouma, G.-J. M. Kruijff, and R. T. Oehrle, editors, *Proceedings of the Joint Conference on Formal Grammar, Head-Driven Phrase Structure Grammar, and Categorical Grammar, 14–16 August 1998, Saarbrücken*, pages 185–195.
- Przepiórkowski, A. (1999). *Case Assignment and the Complement-Adjunct Dichotomy: A Non-Configurational Constraint-Based Approach*. Ph.D. thesis, Universität Tübingen, Germany. <http://www.ling.ohio-state.edu/~adamp/Dissertation/>.
- Przepiórkowski, A. (2000a). Case agreement in Polish predicates. To appear in S. Franks, L. Gabriele and T. King, eds., *Annual Workshop on Formal Approaches to Slavic Linguistics: The Bloomington Meeting 2000*, Michigan Slavic Publications, Ann Arbor. Available from: <http://www.ling.ohio-state.edu/~adamp/Papers/2000-fasl/>.

- Przepiórkowski, A. (2000b). Predicative case agreement with Quantifier Phrases in Polish. Submitted to the proceedings of the Chicago Linguistic Society. Available from: <http://www.ling.ohio-state.edu/~adamp/Papers/2000-unc/>.
- Richter, F. (2000). *A Mathematical Formalism for Linguistic Theories with an Application in Head-Driven Phrase Structure Grammar*. Ph.D. thesis, Universität Tübingen. April 28, 2000.
- Richter, F., Sailer, M., and Penn, G. (1999). A formal interpretation of relations and quantification in HPSG. In G. Bouma, E. Hinrichs, G.-J. M. Kruijff, and R. T. Oehrle, editors, *Constraints and Resources in Natural Language Syntax and Semantics*, pages 281–298. CSLI Publications, Stanford.
- Tajsner, P. (1990). *Case Marking in English and Polish: A Government and Binding Study*. Ph.D. thesis, Uniwersytet im. Adama Mickiewicza, Poznań.
- Verspoor, C. M. (1997). *Contextually-Dependent Lexical Semantics*. Ph.D. thesis, University of Edinburgh, Edinburgh, Scotland.
- Wechsler, S. (1997). Prepositional phrases from the twilight zone. *Nordic Journal of Linguistics*, **20**, 127–154.

Ohio State University  
Department of Linguistics  
222 Oxley Hall  
1712 Neil Ave.  
Columbus OH 43210

and

Polish Academy of Sciences  
Institute of Computer Science  
ul. Ordonia 21  
01-237 Warszawa  
Poland

email: [adamp@ling.ohio-state.edu](mailto:adamp@ling.ohio-state.edu)

URL: <http://www.ipipan.waw.pl/mmggroup/ap.html>