

Predicative Case Agreement with Quantifier Phrases in Polish

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In Polish, as in other languages, predicative Adjective Phrases (APs) usually agree in case with the NP/DP (henceforth: NP) they are predicated of, as in (1)–(3).¹

- (1) $\overbrace{\text{Janek}}^{\text{John}_{nom}}$ $\overbrace{\text{jest miły.}}^{\text{is nice}_{nom}}$
 'John is nice.'
- (2) $\overbrace{\text{Pamiętam go}}^{\text{I remember him}_{acc}}$ $\overbrace{\text{miłego.}}^{\text{nice}_{acc}}$
 'I remember him as nice.'
- (3) $\overbrace{[\text{Kilka drzew}]}^{\text{a few}_{nom?/acc?} \text{ trees}_{gen}}$ $\overbrace{\text{było wyrwane z ziemi.}}^{\text{was}_{3rd, sg, neut} \text{ torn}_{nom?/acc?} \text{ from earth}}$
 'A few trees were uprooted.'

In (1), the primary predicative AP agrees with the nominative NP *Janek*, in (2), the secondary predicative AP agrees with the accusative NP *go*, and in (3), the primary predicative AP agrees with the accusative Quantifier Phrase (QP) *kilka drzew*.

What is unexpected and puzzling for most theories of case and predication, though, is the possibility of the predicative AP agreeing with the genitive NP *within* the accusative QP, as in (4), to be compared with (3).

¹Another possibility is for the predicative AP or NP to occur in the instrumental, so-called 'instrumental of predication'. See Przepiórkowski 2000a on case and predication in Polish in general, and on the distribution of these two ways of case marking of a predicative AP or NP in particular.

- (4) [Kilka drzew] było wyrwanych z ziemi.
a few_{acc} trees_{gen} was_{3rd,sg,neut} torn_{gen} from earth

'A few trees were uprooted.'

To the best of my knowledge, this optionality of predicative case agreement with QPs has not been analyzed or even discussed in the generative / formal linguistic literature so far. Cases such as (4) constitute a challenge for many contemporary syntactic theories, which assume strict locality of mechanisms responsible for case marking, cf., e.g., the locality of feature checking in Minimalism (Chomsky 1995) and the locality of subcategorization in Head-driven Phrase Structure Grammar (HPSG; Pollard and Sag 1994).

The aim of this paper is to provide a solution to this puzzle. First, section 1 presents some background assumptions and mentions previous analyses of similar (but crucially different) data in Russian. Then, section 2 develops an analysis of data such as (3)–(4), cast in relatively pre-theoretical terms, and section 3 formalizes aspects of this analysis in HPSG. Finally, section 4 discusses some apparent alternatives to the analysis of sections 2–3, showing that neither of them can be sustained.

1 Some background

I assumed above that the QPs in (3)–(4) are i) subjects of predicative copular constructions, ii) that they are indeed headed by the quantifier, and iii) that the quantifier (and, hence, the whole QP) bears the accusative case. Assumption i) is easy to justify: such QPs, although apparently not marked as nominative, are subjects according to a number of criteria, including their ability to bind subject-oriented anaphors and to control participial clauses (Dziwirek 1994, Przepiórkowski 1999).

The main argument for assumption ii) is distributional: sentences such as (3)–(4) are grammatical (although they are elliptical) when the quantifier occurs in the absence of the genitive NP, but not when the genitive NP occurs in the absence of the quantifier.² Although assumption ii) is widely accepted in Polish linguistics (e.g., Saloni 1976, Saloni and Świdziński 1985, Kopcińska 1997, Przepiórkowski 1999), our puzzle does not crucially hinge on it: if Polish QPs were headed by nouns (and, hence, genitive), predicative APs in the accusative, as in (3), would have to be explained.

Finally, assumption iii), controversial because of the possible nominative / accusative syncretism of such quantifiers, has repeatedly been made in the literature since Małecko 1863 (cf., e.g., Szober 1928, Schenker 1971 and Franks 1994, 1995), and it is exhaustively argued for in Przepiórkowski 1996, 1999, mainly on the basis of agreement of such quantifiers with accusative, but not nominative APs (both attributive and predicative), and on the basis of non-agreement between such subject QPs and the verb (as in some other languages, e.g., Icelandic, Polish verbs always agree with nominative subjects, but not with other subjects).

Although such predicative case agreement optionality has apparently not been discussed in the literature so far, similar optionality involving attributive adjectives in Russian, illustrated here with the analogous Polish (5), was considered by Babby (1987, 1988) and Franks (1994, 1995).

²In fact, the issue of headedness in Polish QPs is much more complex. For example, assuming Zwicky's 1993 fine-grained analysis of headedness in terms of three different but usually coinciding notions, namely, *head*, *functor* and *base*, quantifiers are clearly *functors*, arguably *heads*, but they probably should be classified as *non-bases*, while the NPs are *bases*, but they are *non-functors* and they give conflicting results in terms of criteria for *headedness* (they may be targets of case agreement with predicative APs, as we have seen above, but they also have Phrase rank instead of Word rank). Thus, also according to Zwicky's classification, quantifiers have more (and clearer) head-like properties than their NP dependents.

are genitive when the quantifier bears the accusative case, and agree in case with the quantifier in other cases, e.g., in dative and in instrumental:

- (6) Pomagałem pięknym pięciu kobietom / *kobiet.
I helped beautiful_{dat} five_{dat} women_{dat} / women_{gen}
'I was helping five beautiful women.'
- (7) Kierowałem pięcioma fabrykami / *fabryk.
I managed five_{ins} factories_{ins} / factories_{gen}
'I've run five factories.'

A mixed agreement / non-agreement pattern is also exhibited by possessive specifiers, which agree in case with the possessor head in case they are realized as pronominals, and occur in the genitive otherwise, cf. (8)–(9), and by subjects of finite verbs, which agree (in person, number, and sometimes in gender) with the verb when they bear the nominative case, as most subject NPs and some subject QPs (those headed by so-called paucal numerals) do, but not when they bear the accusative case (or no case at all, as in case of sentential subjects), cf. (10)–(11).

- (8) książka Tomka / z książką Tomka (non-agreement)
book_{nom} Tom_{gen} / with book_{ins} Tom_{gen}
'Tom's book / with Tom's book'
- (9) moja książka / z moją książką (agreement)
my_{nom} book_{nom} / with my_{ins} book_{ins}
- (10) Trzej faceci przyszli. (agreement)
three_{nom} guys_{nom} came_{3rd,pl,masc}
'Three guys came.'
- (11) Pięciu facetów przyszło. (non-agreement)
five_{acc} guys_{gen} came_{3rd,sg,neut}
'Five guys came.'

Recognizing the inconclusiveness of this evidence, I will nevertheless assume below that NPs combining with quantifiers in Polish are their specifiers.⁴

2.2 Q and its NP specifier are co-indexed

For the purposes of this paper, I understand *index* roughly in the sense of HPSG, i.e., as a bundle of features *gender*, *number* and *person*, playing some role in semantic interpretation. For example, in HPSG binding is assumed to consist in the binder and the bindee sharing the same index (cf. Pollard and Sag 1994, ch.6). Since *index* is relevant to interpretation, two referential NPs referring to different entities bear different *index* values (even though they might have the same *gender*, *number* and *person* values). Thus, *index* as construed here corresponds to the conflation of index and *ö*-features of the Government and Binding theory.

What is special about Polish QPs is that the head quantifier and the specifier NP seem to be co-indexed. How do we know that? The values of features *gender* and *number* are clear in case of true NPs, but not in case of quantifiers: although many quantifiers have different forms depending on whether they combine with masculine or feminine NPs (cf. (12)–(13) below), it is not clear whether this should count as evidence for the quantifiers themselves being masculine

⁴This issue is actually irrelevant for the HPSG analysis of section 3: whether a quantified NP is a specifier or not, it is the sole dependent of the quantifier and, thus, it is the initial element of this quantifier's ARG-ST.

or feminine, and it is even less clear whether they are plural or singular (or perhaps *numberless*). However, since quantifiers head QP subjects (and, hence, share *index* values with them), and binding involves co-indexation, values of *gender* and *number* of a quantifier could be read off an anaphor bound by the QP headed by that quantifier. Although Polish anaphors do not morphologically realize these features, their emphatic modifiers do:

(12) Pięciu facetów zobaczyło siebie samych w lustrze.
 five_{acc} guys_{gen} saw_{3rd, sg, neut} Self Emph_{pl, masc} in mirror
 ‘Five guys saw themselves in a mirror.’

(13) Pięć kobiet zobaczyło siebie same w lustrze.
 five_{acc} women_{gen} saw_{3rd, sg, neut} Self Emph_{pl, fem} in mirror
 ‘Five women saw themselves in a mirror.’

Now, since the emphatic modifier *samych* in (12) is plural masculine, so is the anaphor *siebie* and, hence, the QP *pięciu facetów* must have plural *number* and masculine *gender* (by co-indexing between the binder and the anaphor). This in turn means that the quantifier *pięciu* has a plural masculine *index* (by sharing of *index* along the projection path). So, the *index* (more carefully, *gender* and *number* values within that *index*) of the quantifier is the same as the *index* of the NP, which is visibly plural masculine. Via similar reasoning, both the quantifier and the NP in (13) have the same *index* values, namely plural feminine.

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

2.3 Co-indexing extends the domain of agreement

The major claim of this paper is that it is exactly this co-indexing between the quantifier and its NP specifier that extends the domain of agreement and is thus responsible for the optionality witnessed in (3)–(4) and in (5) above, whatever ultimately the exact mechanism relating this co-indexing to the agreement domain extension turns out to be.

Evidence for this claim is provided by constructions which differ minimally from QPs in not involving co-indexing between the head and its specifier: if the hypothesis above is correct, such constructions should not allow for the optionality of predicative (or attributive) case agreement.

One such similar construction is that involving a head noun and a genitive possessive specifier: since the head noun and the possessor are not co-referential, they bear different *index* values. As (14) below shows, predicative AP may agree only with the nominative head, and not with the genitive possessor, just as predicted by the considerations above.

(14) Książka_i Tomka_j jest ciekawa / *ciekawego.
 book_{nom} Tom_{gen} is interesting_{nom} / interesting_{gen}
 ‘Tom’s book is interesting.’

A rather idiosyncratic construction which differs from QPs even more minimally is the construction of the form *coś* ‘something’ + genitive AP, e.g., *coś miłego* ‘something:NOM nice:GEN’. Just as in case of QPs illustrated above, this construction exhibits a mixed agreement / non-agreement pattern, with the AP occurring in the genitive case only when the head *coś* bears the nominative / accusative case;⁵ in other cases the AP agrees with *coś*:

⁵Because of case syncretism, it is not clear whether *coś* may correspond to both the nominative and the accusative case, or whether it bears only the accusative case, as QPs seem to.

- (15) Widziałem coś ciekawego / *ciekawe.
 saw_{1st,sg,masc} something_{acc} interesting_{gen} / interesting_{acc}
 'I saw something interesting.'
- (16) Przyglądałem się czemuś ciekawemu / *ciekawego.
 looked-at_{1st,sg,masc} RM something_{dat} interesting_{dat} / interesting_{gen}
 'I was looking at something interesting.'

QPs and *coś* + genitive AP are apparently the only constructions in Polish that exhibit this 'agreement in oblique cases / non-agreement in direct cases' behavior. Nevertheless, adopting the common assumption that APs do not bear *indices*, these two constructions differ in that only the former involves co-indexation, i.e., only the former should allow optionality of case agreement. This prediction is confirmed:

- (17) Coś_i ciekawego będzie mile widziane / *widzianego.
 something_{nom/acc} interesting_{gen} will be nicely seen_{nom/acc} / seen_{gen}
 'Something interesting will be well-received.'

Because of the otherwise close parallelism between QPs and *coś* + genitive AP constructions in Polish, I view this difference in terms of both co-indexation and case agreement as relatively strong evidence for the central claim of this paper, stated at the outset of this subsection.

3 Formalization in HPSG

In this section I provide an analysis of predicative case agreement based on the considerations of the previous section and implemented in Head-driven Phrase Structure Grammar (Pollard and Sag 1994), a comprehensive and formal constraint-based linguistic theory.⁶ In particular, I will rely here on the underlying logic for HPSG presented in Richter et al. 1999 and Richter 2000.

HPSG allows for a particularly simple implementation of this analysis, which consists in two parts: the first part states that both predicative and attributive modification involves case agreement (assuming that the modifier and its argument are both case-bearing elements), while the second part defines case agreement in such a way that the co-indexation between a head and its specifier extends the domain of case agreement to the specifier, as discussed above.

Figure 1 describes the principle responsible for attributive case agreement, while Figure 2 describes predicative case agreement.⁷

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

Figure 1: Attributive case agreement

Both principles are encoded as implicational constraints: all objects satisfying (being described by) the left hand side of a constraint must satisfy its right hand side. Thus, in case of attributive case agreement, a *head* object corresponding to a modifier (see the MOD feature), such that both this *head* object and the modified phrase's *head* have CASE features, must satisfy

⁶See Przepiórkowski 2000b for an accessible tutorial on HPSG.

⁷These principles are simplified for expository purposes. See Przepiórkowski 1999 for full versions and for discussion.

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

Figure 2: Predicative case agreement

the right hand side of the implication, i.e., its CASE value (indicated here by the boxed 1) and the modified phrase's LOCAL value (cf. the boxed 2) must stand in the case-agreement relation.

Similarly, the constraint in Figure 2 says that, for any *category* object corresponding to a cased predicate (cf. PRD +), such that its subject has a CASE feature, the CASE value of this predicate and the LOCAL value of its subject (i.e., the phrase being predicated of) must again stand in the case-agreement relation.

This much has to be said in any HPSG treatment of case agreement, and the most straightforward way to proceed further would be to define case-agreement as identity of respective CASE values of the modifier and the phrase being modified (predicated of). However, as discussed in the previous section, we have to loosen this relation a little, and this is done in Figure 3.

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

Figure 3: Definition of case agreement

Now, the description in Figure 3 does not correspond to an implicational constraint, but rather defines what it means for two objects to stand in a certain relation, namely, in the case-agreement relation. What it says is that a *case* object (i.e., a value of the CASE feature) and a *local* object (a value of the LOCAL feature) stand in this relation if either the value of the CASE feature of the *local* object is simply the *case* object, or the value of the CASE feature of *the first argument of the local object* is the *case* object and, additionally, the INDEX value of this first argument is the same as the INDEX value of the *local* object.

It should be clear that the first disjunct corresponds to the standard situation where case agreement of two objects simply means identification of their own case values. It is the second disjunct that is responsible for the 'extended case agreement', as in, e.g., (4) above, where case agreement is realized as the agreement between one object's case value and the case value of the second object's first argument (i.e., specifier in the sense of section 2; cf. note 3). Note that the second disjunct forces the identity of INDEX values of the *local* object (corresponding to the modified phrase) and its first argument (specifier). This means that, in case the phrase's specifier does not bear an index, or has a different index than this phrase, the second disjunct will necessarily be false, so that case agreement is defined by the first disjunct, which corresponds to the standard case agreement. This achieves the effect of the optionality of case agreement being contingent upon co-indexation between the head and the specifier.

4 Some (im)possible alternatives

Since it is not clear why exactly co-indexation of a head X of an XP and its specifier should make this specifier available for the purpose of agreement of another phrase YP with XP, it is

worthwhile to look for another, perhaps more elegant analysis of the optional case agreement data (3)–(4) and (5). This section considers a number of such putative elegant alternatives and shows that neither of them can be sustained.

4.1 Genitive of predication

One putative alternative would be to say that the genitive on the predicative AP in (4) is not a result of agreement at all, but rather a ‘non-agreeing’ option; according to such an analysis, the predicate may either agree with the phrase it is predicated of or occur in the genitive case.

This analysis would make the wrong prediction that also in ordinary cases of predicative case agreement, such as, e.g., (1) above, it should be possible to replace the agreeing AP, *mily*, with the genitive *milego*. A refinement of this alternative, i.e., that such a ‘genitive of predication’ is restricted to quantifier subjects would not work either: in colloquial Polish, the paucal numerals *dwa* ‘two’ to *cztery* ‘four’, which have all the syntactic properties of quantifiers (e.g., triggering the 3rd person singular neuter ‘default’ agreement features on the verb) but combine with an agreeing (i.e., accusative) NP specifier, do not occur with a genitive predicate, contrary to what this alternative would predict:

- (18) % (Te) cztery tygodnie było mordercze / *morderczych.
 these_{acc} four_{acc} weeks_{acc} was murderous_{acc} / murderous_{gen}
 ‘These four weeks were murderous.’

4.2 QPs as QP/NP-ambiguous

Another alternative would posit a structural ambiguity of quantifier phrases: they could be headed either by the accusative quantifier, in which case they would occur with accusative predicates, as in (3), or by the genitive noun, in which case they would occur with genitive predicates, as in (4).

However, since attributive adjectives modifying QPs show the same case optionality as predicative adjectives, this analysis would make the following prediction: when such a 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 quantifier) or both genitive (in case it is headed by the noun). This prediction is false; cf. (19)–(20) below, from Kopcińska 1997.

- (19) Leniwe siedem kotów było śpiących.
 lazy_{acc} seven_{acc} cats_{gen} was sleepy_{gen}
 ‘Seven lazy cats were sleepy.’
- (20) Leniwych siedem kotów było śpiące.
 lazy_{gen} seven_{acc} cats_{gen} was sleepy_{acc}
 ‘Seven lazy cats were sleepy.’

4.3 QPs as bi-headed

Yet another, rather far-fetched alternative would be that Polish QPs are bi-headed, i.e., that they are *simultaneously* headed by the quantifier and by the noun. The QP would then be, in some sense, accusative and genitive at the same time, and agreeing APs could pick any of these values for the purpose of case agreement. This would account not only for our initial data (3)–(4) and (5), but also for (19)–(20), problematic for the previous alternative.⁸

⁸This alternative would be in line with Zwicky’s 1993 remarks on multiple headedness: “Being H [i.e., *head*; A.P.] means that both constituents are morphosyntactic loci with respect to agreement with... external material” (p.310).

One problem with this analysis is technical: it is not clear how the idea of bi-headedness could be formalized in such a way that both heads contribute their case values; to the best of my knowledge, all previous analyses of bi-headed constructions 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.

Another problem is empirical: if such bi-headed QPs are accusative and genitive at the same time, they should probably be able to occur not only in accusative environments, but also in genitive environments. This prediction is, however, false; as (21) below shows, a different form of the quantifier must be used when a genitive phrase is required.

- (21) Bałem się tych pięciu dni / *pięć dni.
feared RM these_{gen} five_{gen} days_{gen} / five_{acc} days_{gen}
'I was afraid of (these) five days.'

5 Conclusion

In this paper, I have looked at case agreement between predicative phrases and a class of Quantifier Phrases in Polish, perplexing for current syntactic theories because of its optionality: a predicative phrase may agree either with the quantifier or with its NP dependent. I have tried to identify the condition on which such optionality is allowed and I have argued that this condition is co-indexation between the quantifier and the NP: I have shown that, in Polish, QPs involve such co-indexation, and that similar constructions which do not involve such co-indexation do not allow for optionality of case agreement. I have formalized this analysis in HPSG and argued against three apparent alternatives to this analysis.

The last question I would like to briefly address here is, why are such constructions involving optionality of predicative case agreement so rare? One reason may be that constructions in which the head and its specifier 1) are co-indexed and 2) bear different cases are very rare, and only in case both conditions hold can the optionality of case agreement be observed.

Another possible reason is more theoretical. The HPSG analysis adduced in section 3 implicitly relies on the presence of information about a head's dependents on this head's phrasal projections — this is because what is modified (or predicated of) is a phrase, not a word, and yet the principle in Figure 3 requires that (the *local* object being part of) this modified element have the ARG-ST feature. This implicit assumption is very controversial within HPSG theorizing: although a number of works assume the presence of ARG-ST on phrases, other works voice their reservation about this assumption on the basis of locality concerns.

I argue elsewhere (Przepiórkowski 2000c) that this should not be considered as an 'all or nothing' issue, but should rather be treated as an empirical question: what kinds of phrases, if any, 'inherit' their lexical daughters' argument structures? It seems that, cross-linguistically, only very restricted kinds of phrases inherit the ARG-ST information from their heads: in French, they would include what Abeillé and Godard (2000) call *lite phrases* (cf. Abeillé and Godard 2000, n.9), while in Polish, they would be phrases headed by words which are semantically vacuous, in the sense defined in Przepiórkowski 2000c. (Crucially, quantifiers are semantically vacuous in that sense.)

If these considerations are on the right track, then the exceptionality of ARG-ST on phrases provides one more reason for the exceptionality of optional case agreement of the kind discussed in this paper: if a phrase does *not* bear the feature ARG-ST, then the second disjunct in the definition of case-agreement in Figure 3 is false, so the only option left is the standard case agreement defined by the first disjunct.

In summary, the analysis provided in this paper not only accounts for the optionality of predicative and attributive case agreement in Polish, but also explains why such optionality is cross-linguistically extremely rare.

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Empirical and theoretical problems: Polish nouns phrases with higher (5&up) numerals and This accounts for the case and agreement morphology on modifiers preceding numerals/quantifiers in Polish ((6)-(7), (9)-(10)). In this case, T cannot have its \bar{I} -features valued as both the predicative adjective and the quantified subject have a valued feature of case (GQ), and T's agreement features are interpreted at PF by default as [3, sg, neu]. The analysis offered here thus provides support for Agree as a primitive syntactic operation and for morphological case and agreement as reflexes of abstract case and agreement.

References Bošković, 2006. Case and agreement with Genitive of Quantification in Russian. In C. Boeckx (ed.), *Agreement systems*. In logic, a quantifier is an operator that specifies how many individuals in the domain of discourse satisfy an open formula. For instance, the universal quantifier, in the first order formula, expresses that everything in the domain satisfies the property denoted by. . On the other hand, the existential quantifier, in the formula, expresses that there is something in the domain which satisfies that property. A formula where a quantifier takes widest scope is called a quantified formula. A quantified Examine quantity phrase agreement with head noun of phrase or the phrase: singular and plural verb agreement: some of, all of, none of, either, a number of, the number of, etc. Each is included in a group of quantifiers that are singular in agreement with the verb. Both can be a determiner, a quantity noun or the head of a quantity phrase. . Both is included in a group of quantifiers that are plural in agreement with the verb. Most is a quantity noun or the head of a quantity phrase. Most is included in a group of quantifiers in which the verb agrees with the noun in the prep. phrase or "closest noun". (singular or plural). DETERMINER. Each kid knows the answer. Predicate agreement with conjoined noun phrases. Case of modifier in phrases with 'two', 'three', 'four'. The notion of 'short term morphosyntactic change' can be used to characterise changes in the use of forms in a short period of time even when the forms themselves have changed relatively little. The Short Term Morphosyntactic Change (STMC) Databases explore change in six different morphosyntactic phenomena in Russian over a 200 year period from 1801-2000. Predicates whose agreement controller is a quantified expression may take either singular or plural agreement. Predicate agreement with quantified expressions shows significant variability synchronically, determined by the quantifier type, the word order, and the lexical semantics of the noun and of the verb.