

The agreement hierarchy

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INTRODUCTION

Consideration of the problem of alternative agreement forms (§ 1) leads us to postulate a hierarchy of agreement positions (§ 2) which allows us to make predictions as to the possibility and relative frequency of semantic as compared to syntactic agreement. The hierarchy is justified by data from a variety of languages which permit alternative agreements (§ 3). Confirming evidence comes from a study of the instances where agreement in case and person is required in different languages (§ 4). The status of the hierarchy and the type of prediction it makes are discussed. It is suggested that the hierarchy determines the main divisions of a measure called SYNTACTIC DISTANCE and that other factors (word order, distance between controller and agreeing element, depth of stacking) determine relative degrees of distance within these main divisions (§ 5). The basic claim of the paper is that as syntactic distance increases so does the likelihood of semantic agreement.¹

1. THE PROBLEM

Certain items permit alternative agreement forms, but not in all syntactic positions:

- (1) The committee has decided.
- (2) The committee have decided.
- (3) This committee sat late.
- (4) *These committee sat late.

The agreement shown in (1) is often termed 'syntactic', that in (2), 'semantic'. The latter term is not wholly satisfactory for, as (4) shows, 'semantic agreement' is restricted by the syntactic environment (cf. Perlmutter, 1972). Nevertheless we will retain the term 'semantic agreement' for agreement which cannot be

[1] I am grateful to all the following for their comments on earlier versions of this paper: N. E. Collinge, Bernard Comrie, John England, Linda Jackson, Anne Judge, Edith Moravczik, John Payne, Ljubomir Popović, Andrew Radford, and Roland Sussex. While I have resisted the temptation to arrange them into an agreement hierarchy, none of them should be taken to agree – even loosely – with all of this paper. A version was read at the Spring Meeting of the Linguistics Association of Great Britain, 1978.

Though (7) represents normal usage, examples with a masculine pronoun do occur:

- (8) Sa Majesté fut inquiète (fem.), et de nouveau il (masc.) envoya La Varenne à son ministre.
(J. & J. Tharaud, quoted by Grevisse, 1964: 405)
His Majesty was worried, and again he sent La Varenne to his minister.

The conflict of gender is even sharper with German *Mädchen* which means 'girl' yet is of neuter gender. Determiners and attributive adjectives show neuter agreement, as does the relative pronoun; the predicate is not marked for gender.

- (9) Das (neut.) Mädchen, das (neut.) ich gesehen habe . . .
The girl that I have seen . . .

The pronoun used in referring to *Mädchen* will be *sie* – 'she'; formerly the neuter *es* was used but now *sie* is usual.

The personal pronoun is again the only form taking semantic agreement with Russian *para* 'couple'.

- (10) . . . byla (fem. sing.) izjaščnaja (fem. sing.) vlyublennaja (fem. sing.) para, za kotoroj (fem. sing.) vse s ljubopytstvom sledili . . .
(Bunin, *Gospodin iz San-Francisko*)
. . . (there) was an elegant loving couple, after which all with curiosity watched . . .

While the attribute, predicate and relative are all feminine singular, the personal pronoun must be *oni* 'they' (*ona* 'she' would refer just to the woman).

The next two agreement problems, from Latin and Serbo-Croat, are less usual and also less discrete. In Latin, a predicate noun may interfere with normal agreement, taking the place of the usual controller. The attributive is not normally affected – strict syntactic agreement operates here; however, a copular verb may agree with such a noun rather than with the subject (11); the relative frequently takes such agreement (12) and the personal pronoun always does (13): in the latter position strict agreement is impossible.

- (11) Amantium irae (pl.) amoris integratio (sing.) est (sing.).
(Terence, quoted by Kennedy, 1955: 117)
The quarrels of lovers are the renewal of love.
(12) Thebae (fem. pl.), quod (neut. sing.) Boeotiae caput (neut. sing.) est.
(Livy, quoted by Kennedy, 1955: 156)
Thebes, which is the capital of Boeotia.
(13) Ea (fem. sing.) (*Id – neut. sing.) vera est pietas.
(Mountford, 1938: 64)
That is true piety.

This Latin evidence is particularly important as it shows alternative agreements of a quite different type to those discussed up to this point, yet it fits perfectly with the agreement hierarchy.

In Serbo-Croat, the problem concerns a survival of the dual number. The numerals two, three and four require a special form of the noun (dual survival) and the attributive adjective agrees with it:²

- (14) ova dva dobra (dual) čoveka.
these two good men.

This form may be used in the predicate but so may the plural:

- (15) ova dva čoveka su dobra (dual)/dobri (pl.).
these two men are good.

The relative pronoun normally stands in the plural (*koji*), indeed informants claim this is obligatory; however, dual forms do occur:

- (16) . . . ta nepuna dva sata koja (dual) je provela u crkvi.
(Andrić, *Mara Milosnica*)
. . . those incomplete two hours which she spent in church.

Reference to such phrases can only be with the plural form *oni* (not **ona*). Statistics from modern texts are available for the two positions where alternatives are possible (Sand, 1971: 55-56, 63): in predicate position dual agreement was found in 309 examples out of 376 (82 per cent) while the relative showed dual agreement in 12 examples out of 32 (38 per cent). Thus the requirement that semantic agreement be at least as likely in the position to the right as it is in the position to the left is met.

Serbo-Croat is also specially interesting when we consider agreement with conjoined nouns. When plural nouns of different genders are conjoined in Serbo-Croat, agreement may be with the nearest or it may be masculine (NB not neuter) plural. In attributive position agreement must be with the nearest noun (17); this is more frequent in the predicate and with the relative; thus examples like (18) and (20) outweigh (19) and (21). The anaphoric pronoun must, however, be masculine plural:

- (17) najsvirepije (fem. pl.) (*najsvirepiji - masc. pl.) kazne (fem. pl.) i mučenja (neut. pl.).

(Andrić, *Travnička Hronika*)

the cruellest punishments and tortures.

[2] There are many problems connected with agreement with quantified expressions which are not raised here as, unlike the Serbo-Croat example, it is often not clear whether it is the quantifier or the noun which controls different agreements. The related problem of 'default' agreement with elements which are treated as not being specified for the features required is also left out of account. It is hoped to return to these areas at a later date; meanwhile a preliminary discussion is given in Corbett (1979).

- (18) Toj službi su bile (fem. pl.) posvećene (fem. pl.) njene misli (fem. pl.) i njena osećanja (neut. pl.) . . .

(Andrić, *Travnička Hronika*)

To this job were devoted her thoughts and her feelings . . .

- (19) Sve njegove molbe (fem. pl.) i uveranja (neut. pl.) nisu pomagali (masc. pl.) ništa.

(Andrić, *Anikina Vremena*)

All his prayers and assurances did not help at all.

- (20) U svetlosti filozofskih istina (fem. pl.) i verskih nadahnuća (neut. pl.), koja (neut. pl.) su se manjala . . .

(Andrić, *Travnička Hronika*)

In the light of philosophical truths and religious inspirations, which changed . . .

- (21) Dok sve one mučne sumnje (fem. pl.) i kolebanja (neut. pl.), koje (masc. pl. acc.) je pobeda raspršila . . .

(Andrić, *Travnička Hronika*)

While all those painful doubts and hesitations, which victory dispersed

. . .

The more familiar problem of agreement with singular conjoined nouns provides confirmation for our thesis. We shall restrict ourselves to English and Russian.

English conjoined expressions provide good evidence to support our hierarchy. There are several complicating factors (see Morgan, 1972) of which we shall consider only the animate/inanimate distinction. With conjoined inanimate nouns, the attributive must be singular while the predicate and relative pronouns can be of either number; for some speakers this is also true of the personal pronoun:

- (22) This (*These) frost and freezing fog . . .
 (23) Frost and freezing fog has affected most of the country today.
 (BBC News, 3 December 1976. *have* also possible).
 (24) Frost and freezing fog, which has/have affected most of the country today, caused particular havoc in the north.
 (25) They (?It) will be with us again tomorrow.

Agreements with conjoined animate nouns show a shift in favour of semantic agreement. The singular is still required in attributive position (26). In the predicate, the plural is normally required (26) except when the predicate precedes the subject (27). The relative and personal pronouns require semantic (plural) agreement (27, 28).

- (26) This (*These) man and woman were (*was) squatting in a castle.
 (27) There was (?were) a witch and wizard who were (*was) living in the moat.

- (28) So they (*he, *she, **it) phoned the council.
(continuation of (27), normal intonation).

In Russian the position is broadly similar, with the interesting difference that a plural attributive modifier is possible:

- (29) Ja berus'za sledujuščix (pl) ženixa i nevestu.
(Ardov, *Tak ono i byvaet*)
I set about the following fiancé and fiancée.

This form of agreement is unusual; Drejzin (1966, quoted by Crockett, 1976: 162) found only 8 plural attributives out of 74 (11 per cent) in written texts. It is the first instance of a choice in attributive position. In predicate position the plural predominates: Graudina *et al* (1976: 31) found 96 per cent plural agreement (753 examples) in newspaper texts. Statistics are not available for the relative pronoun though here the singular is certainly rare. The plural personal pronoun is also the norm.

Still on Russian data, we should consider titles. These are almost all obsolete; they were of neuter gender and, unlike French titles, favoured semantic agreement:

- (30) ... ego vysokoblagorodie prikazal (masc.) vaše (neut.) blagorodie otvesti v ostrog ...
(Puškin, *Kapitanskaja dočka*)
... His Worship ordered (me) to take Your Honour to gaol ...

Only the attributive (*vaše*) shows neuter agreement; the predicate shows masculine agreement and reference would be with the pronoun *on* 'he'. (Offers of relative pronouns will be gratefully received.) Further respect could be shown by using plural forms with titles – in the predicate or with the pronoun but not in attributive position. Thus in (30) above the verb could be *prikazali* (plural), reference could be with *oni* 'they', but the attribute must be singular (**vaši* (pl.) *blagorodie*).

Spanish titles are similar to Russian titles in gender agreement; the attributive adjective takes syntactic (feminine) agreement (31), while semantic agreement applies in the other positions (32, 33); I am indebted to J. England for the data:

- (31) Su Majestad suprema (fem.).
His Supreme Majesty.
(32) Su Majestad está contento (masc.).
His Majesty is happy.
(33) A su Majestad suprema, el cual (masc.) está muy contento aquí en Valencia, le recibieron con muchos aplausos. Él (masc.) se mostró muy emocionado.

His Supreme Majesty, who is very happy here in Valencia, (they) received with much applause. He showed himself very moved.

Our final, 'most semantic' example is again from Russian. *Vrač* 'doctor' is originally masculine in gender, an unfortunate state of affairs in view of the female dominance of the profession. When *vrač* refers to a woman, following reference will be with *ona* 'she'. The relative may be masculine or, more usually, feminine. The form of the predicate has given rise to fierce disputes; both masculine and feminine forms are used. Recently feminine agreements have penetrated to attributive position though the majority of speakers retain the masculine here.

There is, therefore, an option at every position except the anaphoric pronoun. However, it should be emphasized that this is an area in flux and that informants typically do not accept all the variants – for example, an informant who found either relative acceptable rejected the use of a feminine attributive adjective. The forms are as follows:

- (34) Ivanova – xorošij (masc.)/xorošaja (fem.) vrač.
Ivanova is a good doctor.
- (35) Vrač prišel (masc.)/prišla (fem.).
The doctor came.
- (36) Tat'jana Ivanovna – vrač, kotoryj (masc.)/kotoraja (fem.) zaveduet ètim korpusom.
Tat'jana Ivanovna is the doctor who is in charge of this ward.
- (37) Ja segodnja byl u vrača. – Čto ona (fem.) skazala?
I have been to the doctor's today – What did she say?

There is considerable evidence available as to the relative use of these forms. A survey carried out in the early sixties included sentences (34) and (35) in a questionnaire, and the results are presented in detail (apart from the small percentage of 'don't knows') by Kitajgorodskaja (1976); for a recent discussion see Comrie and Stone (1978: Ch. 6). Nearly 4000 informants gave the form they would use, referring to a woman, for these two sentences. Table 1 shows results according to age.

The use of semantic agreement in the predicate is much more frequent than in attributive position. Table 2 classifies informants according to area of 'longest stay'.

As in Table 1 we see a good correlation between judgment on sentences (34) and (35). This clear pattern in the variation between speakers confirms the view that agreement is a 'squishy' phenomenon (see Ross, 1975 and references there). Table 3 shows a break-down according to professional grouping.

The reluctance of writers and journalists (the smallest group with only 63 respondents) to use semantic agreement, and the protestations of horror on the part of some writers (recorded in Mučnik, 1971: 231) appear rather amusing

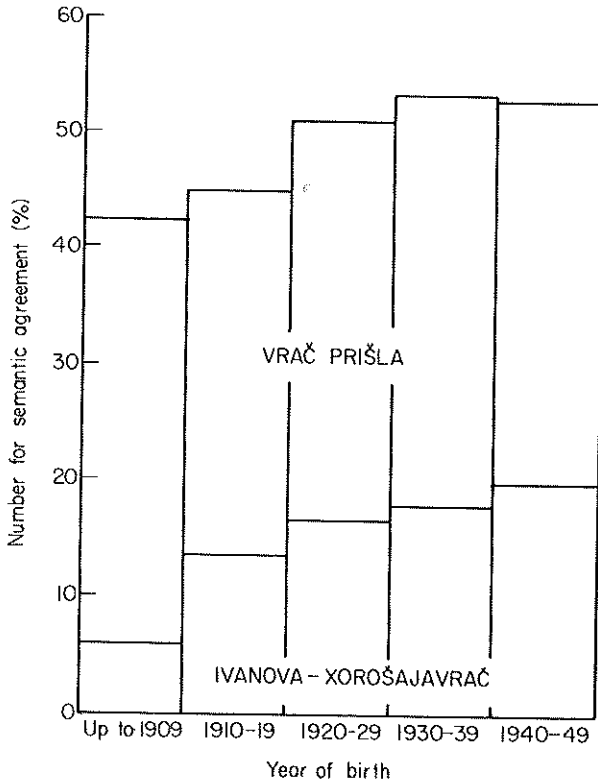


Table 1

in the light of Graudina *et al*'s (1976: 96-101) record of what actually occurs in the press. In predicate position, with all words like *vrač* (not only *vrač* itself) they found semantic agreement in 96 per cent of the cases (total 241). In attributive position they found semantic agreement in 31 per cent of the cases (total 42). The two sets of figures are not directly comparable as the first concerns only the word *vrač* out of context while the second is for a set of similar items in contexts including those with feminine names (which increase the likelihood of semantic agreement). Nevertheless, it seems that informants were conservative in their judgments. Even if we reject their judgments completely, the textual data fit our hierarchy perfectly.

Unfortunately neither source considered the use of the relative pronoun. However, Janko-Trinickaja (1966: 193-194), who studied women's journals of the twenties, reports more use of semantic agreement with the relative pronoun than in the predicate (but she gives no figures and all the examples she quotes

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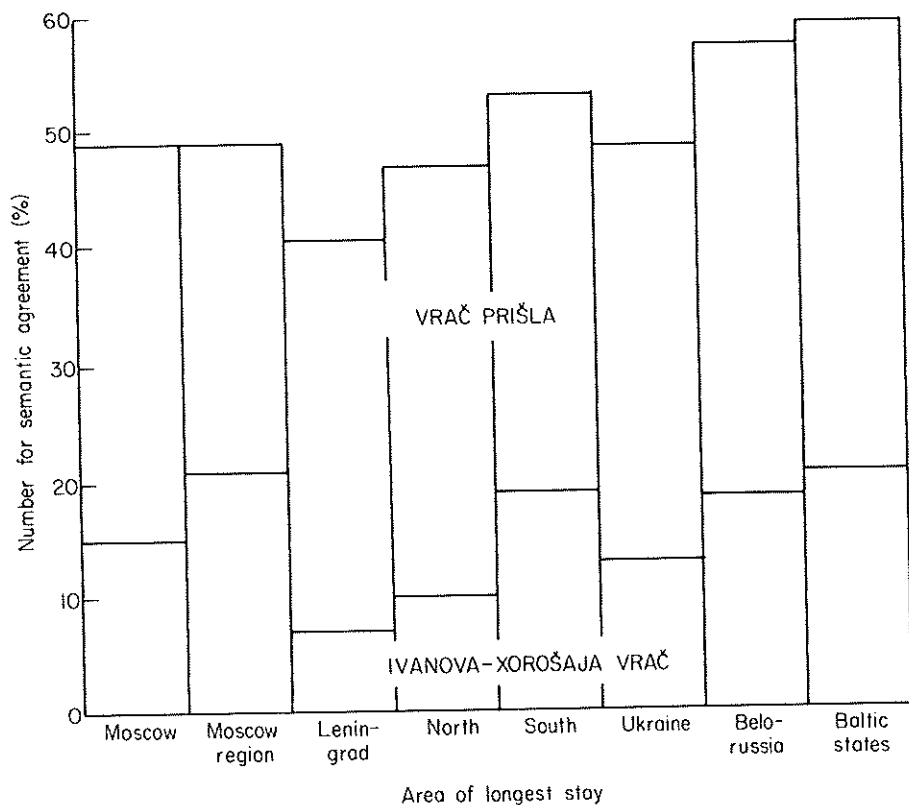


Table 2

show feminine agreement). It appears, therefore, that agreement with nouns like *vrač* provides particularly strong evidence in favour of the hierarchy.

The data discussed so far are summarized in Table 4. It can be seen that our two conditions are fulfilled: syntactic agreement decreases monotonically from left to right; when there is a choice in two adjacent positions, semantic agreement is at least as likely (in fact, more likely) in the position on the right.³

[3] The only conflicting claim I have seen is made by Moravcsik (1978:339-340). She quotes evidence given by Alexandre, who reports that in Lingala relative pronouns take class agreement, while verbs and anaphoric pronouns agree according to the animacy of the subject noun. Moravcsik, therefore, opposes noun phrase internal constituents to noun phrase external constituents (verbs and anaphoric pronouns), the latter class being more likely to show semantic agreement. However, Talmy Givón points out (personal communication) that the original data are a mixture which proves nothing satisfactorily as two of the sentences involve object relativization (which suppresses subject agreement).

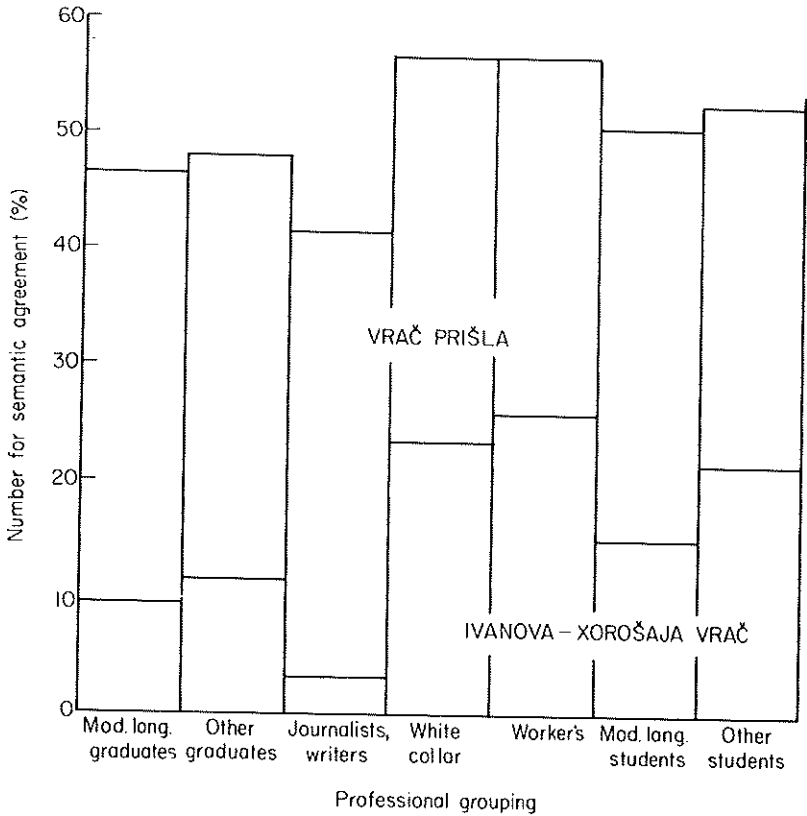


Table 3

We have concentrated on areas which concern the complete hierarchy. There are also data which provide evidence for segments of it:

- (38) The intention was to join the Royal Yacht *which* (*who) had gone out before, and then make most of the tour on *her* (BBC).

Here we find personification possible with the personal pronoun but not with the relative pronoun. In Finnish (Karlsson, 1968) a singular predicate is normal with plural proper nouns like *Yhdysvallat* 'the United States', *Filippiinit* 'the Philippines'. Singular adjectives are increasing in attributive position but plural (syntactically agreeing) adjectives are also found there. Similarly, N. E. Collinge informs me (personal communication) that American schoolchildren are taught that *United States* is singular except in the phrase *these United States*. T. Moore points out (personal communication) that *someone* requires a singular predicate

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| | <i>attributive</i> | <i>predicate</i> | <i>relative pronoun</i> | <i>personal pronoun</i> |
|----------------------------------|--------------------|------------------|-------------------------|-------------------------|
| French titles | f | f | f | f/(M) |
| <i>Mädchen</i> | n | n.a. | n | F |
| Russ. <i>para</i> | s | s | s | PL |
| Latin ag. with <i>head/pred.</i> | h | h/PRED | h/PRED | PRED |
| S-C dual noun | d | d/(PL) | (d)/PL | PL |
| Conjoined. nouns: | | | | |
| 1. S-C (pl.) | nearer | nearer/(M) | nearer/(M) | M |
| 2. Eng. (inan.) | s | s/PL | [s/PL] | (s)/PL |
| 3. Eng. (an.) | s | s/PL | [PL] | PL |
| 4. Russian | s/(PL) | (s)/PL | (s)/PL | PL |
| <i>Committee</i> ⁴ | s | s/PL | [s/PL] | s/PL |
| Russian titles: | | | | |
| 1. gender | n | M | ? | M |
| 2. number | s | s/PL | ? | s/PL |
| Spanish titles | f | M | M | M |
| <i>vrač</i> (female) | m/(F) | m/F | (m)/F | F |

Capitals indicate semantic or loose agreement.

() indicates a less frequent variant.

[] means that number is inferred from the predicate of the relative clause.

Table 4

and relative pronoun but the plural personal pronoun *they* may be used to refer to it.

There is strong evidence for distinguishing four positions on the hierarchy. There is also some evidence in favour of splitting adnominal adjectives into two groups, thus creating a fifth position. As noted earlier, dual nouns in Serbo-Croat require dual agreement of the attribute. Attributive phrases can be distinguished from ordinary attributes by being postposed, by the usual presence of a complement, by being separated from the noun by a pause and potentially being moved away from the noun ((39) below). Such phrases allow either dual or plural agreements, as in the predicate:

- (39) Tri tela, oslabljena (dual) neradom, stalno ili zapaljena (dual) alkoholom ili mučena (dual) potrebom za njim, dišu i prividno miruju, opružena (dual) u travoj i toploj senci.

(Andrić, *Travnička Hronika*)

[4] Nixon (1972) investigated agreement with nouns of this type in a corpus of 100,000 words of newspaper text. He found plural subject-verb agreement in 12.2 per cent of the cases (total 181 examples) and plural pronominal agreement in 27.4 per cent of the cases (106 examples). Possessives were included as well as personal pronouns.

Three bodies, weakened by idleness, permanently either frenzied with alcohol or tormented by the need for it, breathe and apparently are still, sprawled in the grass and in the warm shade.

(40) . . . dva visoka i crna čoveka, slični (pl.) kao braća.

(Andrić, *Travnička Hronika*)

. . . two tall and dark men, alike as brothers.

There is evidence that a similar fifth position must be distinguished for agreement purposes in Russian (Crockett, 1976: 202-207; Corbett, forthcoming). We leave the question open as to whether such a requirement is unusual and whether further positions can be identified.

So far we have considered specific agreement phenomena, involving particular lexical items or particular constructions in individual languages. We have been mainly concerned with the 'classic' agreement categories of gender and number. There is also evidence of a more general nature, concerned with case and person, to which we now turn.

4. TYPOLOGICAL DATA

In this section we shall be concerned not with the form of agreement shown in particular instances, but rather with the question of whether agreement is required or not in different syntactic positions in various languages. Let us first look at the distribution of case agreement as given in Table 5.

| | <i>attributive</i> | <i>predicate</i> | <i>relative pronoun</i> | <i>personal pronoun</i> |
|---------|--------------------|------------------|-----------------------------|-----------------------------|
| Russian | + | ± | - | - |
| German | + | + | - | - |
| Latin | + | + | ± | - |

NB + indicates 'agrees when the element is capable of showing case'.
± indicates 'may or may not agree when capable of showing case'.

Table 5

In German, the 'typical' pattern, attributives agree with the noun in case, and the predicate, when capable of showing case (i.e. when it is a noun) agrees with the subject. The relative and personal pronouns do not agree in case - their case is determined by their rôle within their own clause.

In Russian, and several other Slavonic languages, the predicate, even when it shows case, need not agree with its subject: it may stand in the instrumental case, e.g.:

- (41) on (nom.) byl učitelem (inst.).
he was a teacher.

Similarly in Finnish, the predicate may stand in the nominative or the essive (Whitney, 1956: 26, 130).

Latin varies from German in the other direction. The predicate always agrees with its subject in case, even when the subject does not stand in the nominative:

- (42) Vobis (dat.) necesse est fortibus viris (dat.) esse.
(Livy, quoted by Green, 1918: 159)

You must be brave men.

Furthermore, the relative pronoun may be attracted into the case of its antecedent:

- (43) Hoc confirmamus illo augurio (abl.) quo (abl.) diximus.
(Cicero, quoted by Green, 1918: 155)
This we confirm by the augury which we have mentioned.

In this example the relative *quo* agrees in case with its antecedent even though it functions as the object of *diximus* and as such 'ought' to be in the accusative, i.e. *quod*. This construction is also common in Classical Greek.

The significance of these data is that each of the language types found requires agreement in case for a greater or lesser portion of the hierarchy and so gives independent support for its validity. Let us now turn to agreement in person (Table 6).

| | <i>attributive</i> | <i>predicate</i> | <i>relative pronoun</i> | <i>personal pronoun</i> |
|---------|--------------------|------------------|-----------------------------|-----------------------------|
| Spanish | n.a. | ± | ± | — |
| English | n.a. | + | ± | — |
| Latin | n.a. | + | + | — |
| French | n.a. | + | + | ± |

Here again + indicates 'agrees when possible'.

Table 6

Consider first the Latin situation. We find no element able to agree in person when in attributive position. The predicate shows agreement in person; the relative pronoun transmits it to the verb in its clause and agrees in this limited sense (this is the limit of agreement of all the other relatives in the table). English differs in allowing agreement in person not to be carried into the relative clause:

- (44) It's me who speaks French (Morgan, 1972: 283).

Spanish goes further in allowing syntactic agreement in person to be broken not only in the relative clause:

- (45) nosotros somos los que hacemos (1st pl.)/hacen (3rd pl.).
 (Harmer & Norton, 1957: 385)
 It is we (lit.: we are those) who are doing it.

but also in the predicate:

- (46) ¡Qué desgraciadas somos (1st pl.) las mujeres!
 (G. Martínez Sierra, quoted by Harmer & Norton, 1957: 270)
 How unfortunate (we) women are!

Here we find semantic agreement instead of the expected syntactic agreement (third person plural). Finally French deviates from Latin in the other direction in allowing even the personal pronoun to agree syntactically: reference to a title like *Votre Majesté* could be *elle* (3rd sing.) as in (7) as well as *vous* (2nd pl.); for further examples see Grevisse (1964: 433).

The data in this section show that the hierarchy proposed is applicable not only to the options of syntactic or semantic agreement but also to the question of whether agreement is required or not in different syntactic positions. These data thus provide supporting evidence to the more particular agreement data given in § 3.

5. THE STATUS OF THE HIERARCHY

The data presented show that our hierarchy covers a variety of apparently disparate phenomena. We must now consider whether it has independent status or is simply a derivative of some other measure (§ 5.1), the sort of predictions it makes (§ 5.2), and how it relates to the other factors which influence agreement (§ 5.3).

5.1. The hierarchy seems to match our notions of syntactic structure. In traditional terms, attributive agreement represents agreement within the simple phrase, predicative agreement goes beyond the phrase but is restricted to the clause, the agreement of the relative pronoun goes beyond the clause but is restricted to the sentence, while the personal pronoun is not restricted to the sentence of the item controlling agreement. Thus the points on the hierarchy represent increasing syntactic distance from the controller.

We might expect to be able to derive the hierarchy from some more general principle but this turns out to be impossible. One contender is Comrie's measure for the closeness of nodes (1973: 252):

A node X is closer to a node Y than to a node Z if and only if the lowest node

dominating both X and Y is dominated by the lowest node dominating both X and Z.

This predicts that the relative pronoun would be closer to its head than the predicate to the subject, and so it is not applicable here.

Another possibility is the notion of command. There are four theoretically possible relationships between a controller A and an agreeing element B:

- (i) A commands B, B commands A.
- (ii) A commands B, B does not command A.
- (iii) A does not command B, B commands A.
- (iv) A does not command B, B does not command A.

Of these possibilities (iii) does not occur in agreement configurations (as pointed out by Ross, 1967: 185). The remaining three appear to represent increasing distance: (iv) covers the personal pronoun, (ii) the relative, while (i) includes both attributive and predicative positions. Thus command isolates two of the positions of the hierarchy but fails to separate two other positions.

Ross' notion of primacy, which combines command and word order (Ross, 1973: 200-202) might solve this problem. However, as attributive and predicative positions are equal in terms of command, the leftmost would automatically have primacy (and therefore take syntactic agreement). Thus a predicate preceding attribute and noun should take syntactic agreement rather than the attribute. This does not occur. As we shall see below, word order does affect agreement but only within divisions of the hierarchy (i.e. a preposed predicate is more likely to show syntactic agreement than a postposed predicate). More generally, primacy operates at sentence level while the hierarchy operates at corpus level. Finally, Fauconnier's closeness constraint (1971: 144) also does not distinguish between attributive and predicative positions.

We therefore conclude that the degrees of syntactic distance specified by the hierarchy cannot be specified by other available measures and so the hierarchy is an independent feature of natural languages. It remains to be seen whether further positions on the hierarchy can be justified and whether some new measure can be found which would automatically distinguish the positions we have established. In the meantime we have solid evidence on which to base our present hierarchy.

5.2. Given that the hierarchy is indeed independent, we must now ask in what respects it is predictive. It was claimed in § 2, that no agreement controller can permit semantic agreement at a given point on the hierarchy but not at a second position further to the right (at a position of greater syntactic distance); we shall call this the *ABSOLUTE* requirement of the hierarchy. It was further claimed that, if alternative agreements are possible in two contiguous positions on the hierarchy,

semantic agreement will be at least as frequent (normally more frequent) in the position to the right; this is the RELATIVE requirement of the hierarchy. These requirements lead us to predict that a large number of theoretically possible agreement systems do not occur in natural languages. Thus the hierarchy makes testable predictions in the realm of language universals.

From the absolute prediction it follows that if semantic agreement is possible in one position only, it will be the personal pronoun which allows it (as in the instance of French titles). This leads to the diachronic prediction to be made from hierarchy – namely that semantic agreement will first affect the rightmost position and then spread leftwards. As an example of how this can occur consider first the following Russian exchange:

- (46) Tat'jana Ivanovna – novyj vrač. – Kak ona (fem.) rabotaet?
Tat'jana Ivanovna is the new doctor – How does she work?

The pronoun *ona* could be taken to refer either to *Tat'jana Ivanovna* or to *novyj vrač*; a problem of little import as the same person is involved. Syntactically, however, this brings about a position where the gender of *vrač* is not absolutely clear. An option introduced in the personal pronoun can then spread leftwards. This is documented in Table 3 where the advance of semantic agreement through the century is clear, with the predicate advancing well ahead of attributive position. It is interesting to note that this account is an echo of Givón's view of agreement. Givón claims (1976) that verbal agreement paradigms always arise from anaphoric pronoun paradigms. The changes we have discussed operate over a much shorter time scale but retrace the path from personal pronoun to verbal predicate (and finally to attribute). Penetration to the attribute comes through the nominative case: semantic agreement with *vrač* is possible only in the nominative case and Karlsson (1968: 126) reports that semantic agreement is more common in the nominative than other cases in the Finnish examples discussed. Of course, it is precisely nominative attributes which occur in the same sentences as predicates agreeing semantically with the same controller.

5.3. The agreement hierarchy is certainly not the only factor which determines agreement. In this section we explore the notion that the agreement hierarchy sets the main divisions of syntactic distance while other factors may determine lesser degrees of syntactic distance within those main divisions.

One such factor is word order. We predict that when word order affects agreement it will be agreeing elements before the controller which are syntactically nearer than those after it. As with the hierarchy itself the effect may be absolute or relative – that is, word order may specify the agreement to be used or it may favour one type of agreement statistically. We have already seen an example of word order specifying agreement in the case of English conjoined animate nouns (26, 27). We noted that syntactic or semantic agreement is possible

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in the predicate and the requirements of the hierarchy are met. The choice is determined by the word order: syntactic agreement is possible only before the controller (see Moravcsik, 1978: 341, for another example from Arabic). Before leaving the English examples it is worth noting that when animacy affects agreement, it is always that animate controllers favour semantic agreement. Our proposal represents a considerable extension to Greenberg's Universal no. 33 (Greenberg, 1963: 94). First, we are not limiting the influence of word order to predicates (cf. (56), (58) below). Secondly, we include consideration of the relative frequencies of different agreement forms. Various investigators concerned with agreement choices – usually in the predicate – have noted that syntactic agreement is more likely when the agreeing element precedes its controller (e.g. Crockett, 1976: 209). Statistics are given by England (1976), who investigated predicate agreement with conjoined nouns in Spanish of the 13th to 15th centuries. In each century, in each of the categories he investigated (animate, inanimate concrete and inanimate abstract nouns), preposed predicates show semantic (plural) agreement much less frequently than postposed predicates. Total occurrences for all periods and categories are given in Table 7.

| | <i>predicate-subject</i> | <i>subject-predicate</i> | <i>total</i> |
|--------------------------------|--------------------------|--------------------------|--------------|
| Singular agreement (syntactic) | 323 | 179 | 502 |
| Plural agreement (syntactic) | 234 | 352 | 586 |
| Proportion of plural agreement | 42% | 66% | 54% |

Table 7

Statistics are also available (derived from Sand, 1971: 57–60) for the dual/plural opposition in Serbo-Croat predicates already discussed (Table 8).

| | <i>predicate-subject</i> | <i>subject-predicate</i> | <i>total</i> |
|--------------------------------|--------------------------|--------------------------|--------------|
| Dual agreement (syntactic) | 161 | 148 | 309 |
| Plural agreement (syntactic) | 6 | 61 | 67 |
| Proportion of plural agreement | 4% | 29% | 18% |

Table 8

We have seen that, within a given range of syntactic distance as determined by the agreement hierarchy, word order can affect agreement, either to specify or to favour a given form (in either case the agreeing element following the controller

There is a typo in Tables 7 and 8. Plural agreement should be Plural agreement (semantic). GGC

is syntactically further from the controller and so the likelihood of semantic agreement will be increased).

Another factor which several researchers have noted is the actual distance between agreeing element and controller. We predict that when actual distance has an effect it will always be to favour semantic agreement for elements further removed from the controller (the examples found have all been of the relative rather than absolute type). While most have been content to note the trend, Nixon (1972: 152) gives revealing statistics, based on a 100,000 word corpus, of pronoun choice with nouns like *committee* (Table 9).

| <i>interval length</i> (in words) | <i>probability of</i> <i>singular pronoun</i> |
|--------------------------------------|--|
| 0-9 | 0.8 |
| 10-19 | 0.74 |
| 20-29 | 0.68 |
| 30-39 | 0.67 |
| 40(+) | 0.4 |

Table 9

As predicted, the further the pronoun from the controller, the more likely semantic agreement.

The predictions that can be made on the basis of word order and real distance are at corpus level: given sets of sentences which are equivalent as far as the agreement hierarchy is concerned (i.e. the same position is represented in each) any effect of greater syntactic distance in terms of word order (agreeing element following controller) or real distance will be to favour (absolutely or relatively) semantic agreement.

The last measure of syntactic distance proposed concerns stacking. If a single controller has stacked agreeing elements for which alternative forms are permitted, then if the language allows different agreements with a single controller, it will always be elements stacked further from the controller which show semantic agreement. Recall that Russian *vrač* 'doctor', referring to a woman, permits masculine or feminine attributes. The following example was recorded from speech by Skoblikova (1971: 183):

- (48) *xorošaja* (fem.) *zubnoj* (masc.) *vrač*.
good tooth doctor (i.e. good dentist).

Here *zubnoj* agrees directly with the noun, while *xorošaja* agrees with the phrase *zubnoj vrač*. The opposite pair of agreements give a quite ungrammatical phrase:

- (49) **xorošij* (masc.) *zubnaja* (fem.) *vrač*.
good dentist.

Stacking is related to real distance, as layers of stacking are reflected in distance from the head. The two must be distinguished for, unlike the other measures discussed, stacking only applies when there are two agreeing elements within the same sentence. Stacking may therefore be seen as the least general measure of syntactic distance.

The wider question of the occurrence of more than one agreeing element with a controller within a single sentence has received little attention. It appears that individual languages may or may not limit the options available. We predict that any such constraint will take the form of disallowing a combination of semantic agreement of the nearer element and syntactic agreement of the further. The last controller discussed, Russian *vrač*, provides an example of such a constraint. It permits syntactic or semantic agreement of both attribute and predicate. As we have seen, semantic agreement is more frequent in the predicate and so the requirements of the agreement hierarchy are fulfilled. Given an attribute and predicate in the same sentence, there should be four possible sentences (though not of equal frequency of occurrence) – for example, four possible translations of the sentence: ‘the new woman-doctor said . . .’:

- (50) *novyj* (masc.) *vrač skazal* (masc.)
- (51) *novyj* (masc.) *vrač skazala* (fem.)
- (52) **novaja* (fem.) *vrač skazal* (masc.)
- (53) *novaja* (fem.) *vrač skazala* (fem.)

Sentences like (52) are ungrammatical as noted by Švedova (1970: 555). Thus Russian has a constraint of the type described, disallowing semantic attributive agreement and syntactic predicate agreement (both allowed separately) within a single sentence.

We have extended the notion of syntactic distance from the main divisions of the hierarchy to include the subsidiary divisions made by word order, actual distance and stacking. We have noted that the predictions made may be absolute or relative; the basic regularity we have observed is that the likelihood of semantic agreement increases with syntactic distance. The predictions made apply at the corpus level; constraints on multiple agreements within a single sentence may hold in individual languages – if so, they will not permit semantic agreement in the nearer position to be combined with syntactic agreement in the further position.

As a coda to this section let us examine how the different measures of syntactic distance operate to determine a particularly unusual set of agreements. French *gens* ‘people’ was originally feminine; masculine agreements are now obligatory for the personal pronoun (54), relative pronoun (55) and predicate (54) (all data from Grevisse, 1964: 193–195):

- (54) Plus telles (fem.) gens sont pleins (masc.), moins ils (masc.) sont importuns.

(La Fontaine)

The more such people are full, the less they are tiresome.

- (55) J'écris pour ces petites (fem.) gens d'entre lesquels (masc.) je suis sorti.

(Duhamel)

I write for these little people from among whom I have come.

Only nominal modifiers show alternative agreements: thus the requirements of the agreement hierarchy are fulfilled. The sentences above, and (56) below, show feminine agreement in prenominal position; in postnominal position (56) shows masculine agreement:

- (56) Mes amis étaient de vieilles (fem.) bonnes (fem.) gens pleins (masc.) de saveur antique et fruste.

(Henriot)

My friends were old good people full of an old and rough savour.

Examples like (56) are further evidence in favour of a fifth position in the hierarchy, for attributive phrases of this type can be moved in front of the head without affecting the agreement:

- (57) Instruits (masc.) par l'expérience, les vieilles (fem.) gens sont soupçonneux (masc.)

(*Dictionnaire de l'Académie française*)

Taught by experience, old people are suspicious.

For ordinary attributive modifiers the agreement does depend on word order: preposed adjectives are feminine (*vieilles* in (57) above) while postposed adjectives are masculine:

- (58) Tous les gens querelleurs (masc.)

(La Fontaine)

All the quarrelsome people.

Only preposed adjectives can be feminine – this conforms to our word order measure as elements preceding the controller are syntactically closer to the controller than those following. There is a further complication: not all adjectives distinguish gender – for example, *honnêtes* 'honest' is both the masculine and feminine plural form. Only when the adjective immediately preceding the noun is clearly marked as feminine do adjectives further forward take feminine agreement.

- (59) Quels bons (masc.) et honnêtes gens!
What good and honest people!

As *honnêtes* is not marked as feminine, *bons* appears in the masculine form (*quels*

is also masculine but the difference in this case is purely orthographic). The motivation is to avoid the situation where the nearer modifier could be taken to be masculine (showing semantic agreement) and the further feminine. The rule operates whether the modifiers are conjoined or stacked: in (56) above we have stacked modifiers – the nearer (*bonnes*) is unambiguously feminine and so the further (*vieilles*) is also feminine. There is the suspicion that a transitional stage may have been artificially preserved by grammarians; nevertheless, French *gens* provides further evidence for the agreement hierarchy and for the other measures of syntactic distance proposed.

CONCLUSION

In our discussion, inevitably, we have had to leave certain problems untouched and in some areas we have raised more questions than we have answered. However, we have established that agreement is not a discrete phenomenon, rather that some items 'agree more' than others. The further an element stands from its controller in terms of syntactic distance, the more likely is semantic agreement. The agreement hierarchy provides the primary measure for this distance; other factors can be called into play when two elements stand at the same point on the hierarchy. We have seen that the notion of syntactic distance provides an explanation for many facts about agreement – including some unexpected ones – and makes new predictions, which, it is hoped, will form a fruitful basis for further work.

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