

Subject-verb agreement in English¹
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Abstract

The paper rejects the standard view according to which every tensed verb in English agrees with its subject in person and number. It argues that person is irrelevant to all verbs except *BE*, and that past-tense verbs and modals (other than *BE*) have no number agreement features. It discusses agreement mismatches which reflect the subject's meaning, but rejects the idea that subject-verb agreement may be a semantic rule; it proposes instead a new feature 'agreement-number'. This extra number feature applies only to the subject of a tensed verb and by default has the same value as the subject's ordinary number, while also allowing various kinds of mismatch (for *I* and *you*, and for cases of 'semantic' agreement). It also offers analyses of agreement with non-nominal subjects and dummy *there*, and shows how the analysis for standard English generalises easily to a range of variations found in non-standard dialects. The theoretical basis for the analysis is Word Grammar, whose main advantage is that features are free to be assigned by rule because they are not used in classification.

1 The standard view and some problems

1.1 The standard view

One view of subject-verb agreement in English is that it works in just the same way as in languages such as French and German: both verbs and their subjects are classified in terms of a 3 x 2 paradigm in which three persons and two numbers are distinguished, and agreement ensures that a verb has the same person and number as its subject. The major difference between English and other languages lies in the morphology, of which English has very little. This view is so widespread as to deserve the title 'the standard view'. It is presented in theory-oriented introductory textbooks (Haegeman 1994:112, Radford 1997:172) and in descriptive textbooks (Huddleston 1984:62, 1988:39) and reference grammars (Quirk et al 1985:755,765, Greenbaum 1996:237). With very few exceptions (which we discuss below), every description of English assumes that every finite (present or past) verb has a person and a number, just as in French. Even if noun paradigms with a full set of Latin cases are out of fashion, paradigms for verbs like the one in Table 1 are not.

number: person	singular	plural
1	love	love
2	love	love
3	loves	love

Table 1

At the same time we all know that this is a particularly messy area of grammar. The mess is distributed roughly equally between the verbs and their subjects. As we shall see below, some verbs show limited agreement while others show none at all, giving patterns like the following:

- (1) (a) *Heloves* her. They *love* her.
 (b) He/They *loved* her.
 (c) He/They *must* love her.

What is messy about subjects is that some trigger the 'wrong' agreement:

- (2) (a) Five pounds *is*/**are* a lot of money.
 (b) His family *are*/**is* (all) overweight.

These examples show that a plural subject (*five pounds*) may combine with a singular verb, and a singular subject (*his family*) with a plural verb. The latter pattern is especially popular in British English¹.

The conflict between *is* and *five pounds* cannot be resolved by re-classifying the latter as singular; this is correct for some nouns with the suffix *-s*, such as *news* and *linguistics*, but cannot be right for *pounds* because it selects *these* rather than *this* (compare *this*/**these news/linguistics* with *these*/**this pounds*). Similarly, there is no doubt that *his family* is singular, because *family* selects *this*: *this*/**these family*. More generally, *pounds* combines with the same range of determiners (including no determiner at all) as all other plural nouns,

while *family* selects the singular range of determiners. The fundamental problem, therefore, is that the two different constructions which are sensitive to a noun's 'number' lead to conflicting classifications: *pounds* 'looks' plural to its determiner, but singular to its verb. This produces a problem of terminology, so I shall reserve the term *number* for the first of these contrasts: the number of *pounds* is plural because it takes plural-type determiners and also because it carries the plural suffix. The problem, then, is that English verbs do not always agree with their subject's number; the complications lie between the verb and its subject, rather than between the noun and its determiner.

Descriptive grammars generally recognise the complications in full, often going into great detail about exceptional cases. However, these grammars simply describe the mess without trying to fit it into the overall structure of English. This is a pity, because the mess is part of the structure and needs to be accommodated rather than simply left in footnotes². As for the theory-oriented accounts, these do even worse because they simply ignore the complications, which means that readers are not even alerted to the existence of a problem. If this gap is simply a matter of detail which can be sorted out later, all well and good; but quite fundamental issues may be at stake, in which case it is high time to confront the facts. In other areas of grammar such as extraction or adverb placement we are used to the idea that the details are crucial to choosing between radically different grammars for English. The same principle must surely apply here, and until we have tried to work through all the details we cannot tell how important they are.

There is no doubt that this area of grammar is complex, but the question is about exactly where the complexity is and how best it should be handled. What is uncontroversial is the division between verb-based and subject-based complexity. Where there is room for debate is in the analysis of each area. In each case the grammatical tradition excludes the complexity from the syntax, allowing a very simple syntactic rule of agreement: "verbs agree with their subjects in person and number". Verb-based complexities are assigned to the morphology by assuming massive syncretism - syncretism for all person/number cells in the past tense, and syncretism for 5/6 cells in the present. On the other hand, subject-based complexities, when they are not ignored completely, are recognised as an awkward exception where syntactic agreement is simply suspended in favour of a semantic agreement. In no case are the two kinds of complexity seen as related to one another.

The purpose of the present paper is to offer an alternative to the standard view in which the mess is confronted in total, but handled more elegantly and insightfully than in the standard view. In this alternative view, most of the complexity turns out to be located in the syntax. The key to the analysis is a theoretical claim, that morpho-syntactic features such as Number may be assigned by rule rather than automatically projected from lexical categories such as Noun and Verb. Some tensed verbs (but not all) have a number, but none except *BE*³ have a person; and a verb's number is only indirectly related to the number of its subject, thanks to a mediating feature 'agreement-number'. The analysis (unlike the standard view) requires no syncretism in the morphology, and no agreement (as such) in the semantics.

1.2 Is it really agreement?

It is possible to question the very foundations of the standard view by arguing that the relation between the verb and its subject is not really syntactic 'agreement' at all. This position has actually been adopted in two separate analyses, so we start by considering it and rejecting it.

One of these analyses is in Hudson (1990:225-9), which raises two objections to the standard view. The first is that the verb and its subject have a completely different range of

features, so the restrictions they impose on each other cannot be 'agreement' as such. The contrast between *dog* and *dogs* cannot be the same as that between *bark* and *barks* because they have nothing in common either in terms of morphology (indeed the morphology of a 'singular' noun is that of a 'plural' verb) or in terms of syntax or meaning (a plural noun refers to a set of individuals, but a 'plural' verb does not refer to a set of events). If it is agreement, it is fundamentally different from the agreement found, say, between a Latin noun and adjective which are both classified in terms of the same set of features for gender, number and case, with similar morphological and semantic consequences for nouns and for adjectives; for example, in *amici boni*, 'goodfriends', the adjective *boni* can be used on its own to refer to a group of good people, just as *amici* refers to a group of people who are friends.

This objection is easily answered. All it means is that nouns and verbs have a different feature (in the sense of 'attribute') - say 'number' for nouns but 'subject-number' for verbs. But there is no reason in principle why different features should have a different range of values. On the contrary, if values range over '+' and '-', then all features have the same range of values; and it is easy to think of non-linguistic examples of attributes with the same range (e.g. 'length' and 'breadth'). The generalisations of morphology, syntax and semantics are sensitive to features as well as to their values, so it does not matter if the value 'plural' for a verb's subject-number and for a noun's number trigger different morphology and semantics.

The second objection is that the machinery of agreement can be replaced by default inheritance. Suppose the verb concerned was *BARK* and the noun *DOG*. If *bark* is the default form of *BARK*, according to the proposed analysis the problem is simply to prevent it from occurring with *dog*. This can be done by a rule which demands *barks* when the subject is singular (the details of the rule are not important); being more specific than the general default rule, this blocks *bark*. This analysis correctly generates *Dogs bark* and *(The) dog barks*, while blocking **(The) dog bark*; but it ignores the need to block **Dogs barks*. This could be done by a second rule, but that would miss the point that the verb and its subject co-vary; in general, where two words co-vary there is no alternative to an agreement rule. The proposed analysis in terms of default inheritance is simply wrong.

The other attempt to build a non-agreement analysis for the English data argues that the apparent agreement is actually to be explained semantically as the result of two separate selections made independently by the verb and by its subject. The most thorough study on these lines is Reid (1991), but the same approach has been suggested in Pollard and Sag (1994:67-88) and a number of earlier works cited there. The idea is that the forms *barks* and *bark* have different meanings, because they are used to describe different events (with one or more than one 'barker'), so it follows automatically that *barks* can only be used with *(The) dog* and *bark* only with *dogs*. This analysis has the great attraction of accommodating examples like those in (2) where the choice of verb forms follows the meaning and not the syntax.

However, the analysis seems to throw the baby out with the bath-water: by denying that the co-variation has any basis in syntax, it is unable to explain patterns that are straightforwardly syntactic but semantically arbitrary. Take obligatorily plural nouns like *scissors* and *scales* ('pluralia tantum') which trigger plural agreement even though they refer to a single individual object:

(3) These scissors/scales are/*is broken.

Reid considers the problem raised by examples like *scissors* (ibid:74-5), and argues that scissors are in fact conceptually plural (because of the two blades); Pollard and Sag take the same view (1994:87), as does Wierzbicka (1991). However, it is hard to see how this kind of

explanation would apply to *scales* (given the way bathroom scales are designed). In any case there is a real danger of circularity if the verb's supposed meaning can only be identified by looking at its form, especially given the apparently arbitrary variation among languages (with German treating scissors as singular, for example). Similar problems arise when the subject is *I* or *you*: the verb form has to be 'plural' in spite of the clear singularity of the subjects.

Examples like these suggest that at least some of the co-variation is purely syntactic. One possibility is that there are two parallel agreement systems, one syntactic and the other semantic, as suggested by Sadock (1991:12-14); after all, meaning is so obviously relevant in some examples that the agreement must be 'semantic'. However agreement can be sensitive to meaning without therefore being semantic in Sadock's sense of being stated in terms of semantic structure. It would be semantic only if the relevant elements could be identified satisfactorily in the semantic structure. The elements are very easy to identify in syntactic structure, as a tensed verb and its subject; but these have no easy equivalents in semantic structure. The semantic equivalent of 'subject' is hard to identify because of passivization and the variety of semantic roles available to subjects, and the problem is at least as serious for 'tensed verb'. Reid attempts to provide semantic definitions for both these categories (1991:171-4), but the fact remains that it is very much easier to identify the terms of the agreement relationship in syntactic structure than in semantic structure.

The conclusion seems to be, therefore, that the agreement rule is a syntactic rule even though it is to some extent sensitive to the subject's meaning⁴. To that extent, therefore, the standard view is vindicated and we can use the standard name for the pattern: Subject-Verb Agreement (SVA).

1.3 Troublesome verbs

The standard view faces two other objections which will be harder to answer. The first is that for many verbs there is no morphological evidence for agreement, and there is some syntactic evidence against it. As far as Standard English is concerned the facts are well known and uncontroversial. Agreement is found only in present-tense verbs and in the past tense of *BE*; and among present-tense verbs, it is not found in any modal verbs except the modal *BE*. Thus:

- (4) (a) She *loves* you. They *love* you.
 (b) She/they *must* love you.
 (c) She *is* to do it. They *are* to do it.
 (d) She *was* here. They *were* here.

If every tensed verb carries person and number features there is massive syncretism since these features have no effect at all on the morphology of any past-tense verb (except *BE*) or of any modal verb (again except *BE*).

Syncretism in itself is not an objection, because there are cases where it is clearly the result of a correct analysis. For example, there is good evidence for systematic syncretism between perfect participle and passive participle:

- (5) (a) She has *visited* him.
 (b) She was *visited*.

The evidence is that each of these ways of using *visited* shows a different combination of syntactic and semantic characteristics: 'perfect tense' semantics plus normal argument linking in (a), and tenseless semantics plus 'passive' argument linking in (b). If only one inflectional category is recognised it is (arguably) impossible (and not just difficult) to distinguish these two groups of characteristics; therefore there must be two distinct categories; therefore there is syncretism.

However the syncretism produced by the standard view of SVA is not like this, because there is no clear evidence for it. Take past-tense verbs, for example. It is normally assumed that SVA applies to all tensed verbs, but it would be very easy to write a grammar of English in which SVA applied only to present-tense verbs; this would leave a small problem for *was* and *were*, but this one contrast is not sufficient to justify a contrast for all other verbs. Indeed the analysis offered below takes precisely this approach, so to the extent that the analysis works, we can be sure that syncretism is not, in fact, essential. It may be forced by theoretical assumptions - e.g. by the Minimalist decision that an 'Agreement Phrase' is needed for every tensed verb (Radford 1997:424) - but these assumptions do not count as evidence for the syncretism, and the lack of independent evidence for the latter must count as a weakness in the theoretical assumption.

Nor can we use Universal Grammar as evidence for the standard view even if we accept the existence of Universal Grammar. Suppose we argue that English must distinguish three persons and two numbers because this is clearly true of French and Italian, so it must be part of Universal Grammar. If Universal Grammar includes all features which are distinguished by any languages then we should include far more categories than person and number: gender (found in Arabic and many other languages), obviation, Bantu-type noun-classes, and possibly others (Corbett 1994). This seems a most unpromising avenue to explore.

It seems, then, that there is no positive empirical evidence in favour of the standard view that agreement distinctions apply to all verbs regardless of whether or not the distinctions are manifested in the morphology. But we can push the argument further by considering two items of evidence against it. The first item concerns the use of syncretism as an explanatory mechanism, while the second concerns a detail of agreement.

Suppose syncretism is in fact responsible for the lack of morphological distinctions for agreement, as claimed by the standard view. In this case we can expect the syncretism to show the same kinds of vagaries that we find in other languages, with different kinds of syncretism in different paradigms. In a 2 x 3 paradigm there are numerous possible groupings of cells which could be syncretised, so an analysis in terms of morphology excludes nothing; and yet the fact is that the pattern is the same for all verbs, however irregular: with the single (and minor) exception of *BE*, no verb has any distinction in the past, and the only form which is ever distinguished in the present is the third-person singular. This is odd if the relevant mechanism is syncretism, but it would be natural if the syntax assigns no agreement to past tense verbs and only one contrast to present-tense verbs, as in the analysis that will be proposed below.

The second piece of empirical evidence against the standard view concerns number conflict in agreement. According to the standard view, the past-tense form *won* has a syntactic number even though morphological syncretism makes the number invisible, so any number conflict which affects present-tense verbs should affect past-tense verbs in just the same way. But this prediction is false. Feature conflicts that arise in the present tense vanish in the past. If a singular and plural subject are coordinated by *or*, the result is at best uncomfortable⁵ in the present, but unproblematic in the past:

- (6) (a) Either the girls or their mother always *won*.
 (b) Either the girls or their mother always *?win/?wins*.

Whatever we may think of the alternatives in (b), it seems clear that (a) is much better. The conflict arises in (b) because each subject requires the verb to have a different number, so why does the same conflict not arise in (a)? If *won* really did have a number, the conflict

should be impossible to resolve because no word can have two distinct values for the same feature. The fact that both values trigger the same morphological form in (a) should be irrelevant; and yet (a) is completely grammatical, which suggests that there is, in fact, no feature conflict at all - in other words, that *won* has no 'number' feature.

It could be objected that the supposed feature conflict can be resolved, as suggested by Pullum and Zwicky (1986), by a general principle which allows feature conflict provided it can be resolved phonologically. However, this does not seem right because there are other cases where the conflict persists even when it is phonologically 'resolved'. For example, it is impossible to resolve the conflict between past and present even when the two have the same form:

- (7) (a) They *left* at 7.00 yesterday and they *leave* at 7.00 tomorrow.
 (b) *They *left/leave* at 7.00 yesterday and tomorrow.
 (c) *They *set* out at 7.00 yesterday and tomorrow.

In my judgement (c) is just as bad as (b), although there is no morphological conflict. This is easy to explain if we assume that a single verb cannot have both past and present tense, and also that *set* is ambiguous between past and present - i.e. that there is genuine syncretism. But if syncretism leads to feature conflict in this case, why not in (6a), where *won* is supposed to be ambiguous between singular and plural?

The evidence suggests, therefore, that *won* has no subject-number feature at all, rather than that it is ambiguous between singular and plural. We could have made a similar case for modal verbs on the basis of examples like the following:

- (8) Either the girls or their mother will win.

Here again there seems to be no feature conflict, which is easy to explain if *will* has no number.

The conclusion is that agreement features only apply to verbs whose morphology reflects the features overtly, so past-tense verbs and modal verbs have no agreement features. However we must also remember *BE*, which is another troublesome verb. The trouble with *BE* is that it shows more agreement distinctions than other verbs: it distinguishes singular and plural in the past tense (*was, were*), and it distinguishes *I* from other 'non-3s' forms in the present (*am, are*). The existence of these distinctions in *BE* does not mean that we have to apply the same distinctions to all other verbs; in fact, the evidence produced above shows that this is not so. Nevertheless, the verb *BE* must be integrated into the same grammar as the other verbs, so we shall have to account for its peculiarities.

1.4 Troublesome subjects

The other source of problems for the standard view is the subject, though as mentioned earlier, these problems are always recognised in descriptive grammars. The earliest and still in some ways the most perceptive generative study is by Morgan, whose conclusion is that SVA is 'far from superficial, that in fact SVA is a tough nut for any theory to crack'(1972:278). We can divide the problems into two groups according to whether they involve 'person' or 'number'.

Starting with 'person', this category is problematic for one simple reason: it does no work, so it cannot justify its place in a grammar. Unlike number, it is never mentioned on its own - that is, a grammar of English makes no generalisations about, say, 'first person', but always combines person with number. This in itself is suspicious. Worse still, the categories 'first person' and 'second person' pick out only three lexemes: *I/me, we/us* and *you*. Thus 'first singular' labels *I/me* uniquely, 'first plural' *we/us* and 'second' *you*. If these category labels

pick out just one lexical item each, they are redundant because they can be replaced by lexical names: `the lexeme *I/me*', or more simply, `*I/me*'. Indeed, it is even easier than this because the grammar does not need to pick out *we/us*, which is a straightforward plural nominal which takes the expected plural agreement. So the only words that need special treatment by the agreement rules are *I* and *you*. It is also worth observing that SVA refers to these lexemes as such, regardless of whether they match the traditional 'person' meanings (speaker; addressee but not speaker; neither speaker nor addressee). In particular, *you* need not refer to the addressee, as it may be used to mean 'one', an indefinite person. In examples like the following its referent must be female, but such examples can easily be addressed to males:

(9) You need help when you're having a baby.

In short, a grammar of English would work just as well without the category 'person', and would be slightly simpler.

It is possible to object to this conclusion, of course. One objection (raised by a reviewer) involves reflexive pronouns. Without the feature Person, how can we require reflexive pronouns to agree in person as well as number with their antecedents (giving *I ... myself*, *you ... yourself* and so on)? This objection loses its force when we remember that the agreement goes well beyond person and number. In English, it also involves sex (*Mary ... herself*, but *John ... himself*) and whatever distinguishes *ONE*⁶ from other 'third-person' pronouns (*one ... oneself*). In French, it involves the contrast of politeness between *TU* and *VOUS*, and in German between *DU*, *SIE* and *IHR*. It is not at all obvious that the traditional categories of number and person are relevant to these cases of agreement. What is much clearer is the relevance of individual lexemes. A first approximation to a rule would be as follows:

(10) a. If the antecedent is a personal pronoun, lexeme P, then the anaphor must also be a form of P.

b. Otherwise, the anaphor must agree with its antecedent in terms of whatever grammatical and semantic features are relevant (typically gender and number).

Notice that in traditional analyses person applied only to pronouns, so if these are handled by a 'lexeme-agreement' rule no role is left for person.

The conclusion, therefore, is that nouns and pronouns do not have a person feature in English; the same conclusion may apply to other languages as well, but in this paper we are concerned with English. The only possible role for person in SVA would be to distinguish the pronoun lexemes *I* and *YOU* from other singular nominals, but we can do this just as easily by referring to these specific lexemes:

(11) a. If the subject is *I* or *YOU*, a present-tense verb-form is plural.

b. If the subject is *I*, the verb *BE* has a non-plural form (*am*, *was*).

The following sections will introduce a more formal version of these rules.

The problem with 'number' is quite different. There is no doubt that English nominals have number, such that *dog* is singular and *dogs* plural; as we have already observed, number is highly relevant to the determiner system, and also provides an important link between morphology and semantics which is indispensable for handling irregularities such as *sheep*, *police* and *news*. The problem is that this number does not always match that of the verb. A singular verb may have a plural subject, and a plural verb may have a singular subject.

(12) (a) Two *drops* *deodorizes* anything in your house.

(b) The Parsons *family* *were* great letter writers.

The examples are from Reid (1991:193-4), which is a particularly thorough and sensitive

treatment of this complication. As mentioned in note 1, the second pattern is more popular in British than in American English. The plural verb in (b) could perhaps be explained as a special characteristic of *BE* (agreement with its complement), but the same is not true of any of the following examples from Greenbaum (1996:240):

- (13) a The Argentine *team are* in possession now inside their own half.
 b The *public have* been fair.
 c The *enemy have* brought forward their elephant ...

It is true that, as a first approximation, a plural verb is used when the subject's referent is conceptualised as a 'plurality' (e.g. a family viewed as individuals), and a singular verb when it is conceptualised as a single individual (e.g. a family seen as a single entity).

However this is only part of the story, since as we saw earlier, arbitrary syntactic number (e.g. *scales*) takes absolute priority, as does the syntax of *I* and *you*. Moreover, as Reid shows, the same subject phrase may be used with a singular verb on one occasion and with a plural one on another, without any obvious difference of conceptualisation (ibid:228, quoting Sperber and Wilson 1986):

- (14) a When a *set* of assumptions *is* placed in the memory of the deductive device, ...
 b A *set* of assumptions which will constitute the axioms, or initial theses, of the deduction *are* placed in the memory of the device.

In some cases it is clear that the number in an attested example is a performance error due to the influence of an intervening nominal (Greenbaum 1996:241):

- (15) a *Depopulation* due to plague and migration in the fifth and sixth centuries *appear* to be responsible for the demise of the lowland British kingdoms.
 b The *results* of that in pollution and wasted natural resources every year *is* shameful.

It is not always easy to separate these various influences on the verb form - for example (14b) may be a performance error - but it is clear that conceptualisation of the subject is only one influence on the choice of verb-form, alongside grammatical number and performance errors.

It would be fair to say that we still do not have a proper understanding of this area of grammar. The best we can do is to provide a theoretical framework within which a proper analysis might be developed. This will be the aim of the later sections.

1.5 Towards a solution

We can summarise the standard view and its problems as follows. We can identify three crucial assumptions in the standard view, each of which turns out to be wrong:

- that every nominal can be classified in terms of person as well as number - but person does not apply (here or anywhere else in English);
- that every tensed verb can also be classified in terms of person and number - but not only is person generally irrelevant, but even number only applies to those verbs where it is expressed overtly;
- that the verb's classification is identical to that of its subject - but the verb's number need not in fact be the same as the subject's.

The solution will have three components: a system of features for subjects, another system of features for verbs, and a pair of agreement rules. All three components are quite simple.

a. **Subject features.** The main problem with subjects is to accommodate the mismatches between the subject's number and that of the verb. We assume that nouns have a **number**, which is used for linking their morphology and semantics, and which is relevant to the choice

of determiner; this is an ordinary morphosyntactic feature which generally varies with the noun's inflection, but in some cases it is fixed lexically (i.e. determined by the lexeme concerned); for example, the number of interrogative *WHO* is always singular, and that of *WE* is plural. However, we shall also assume an additional feature, '**agreement-number**'. These two features share the same range of possible values ('singular' and 'plural'), and typically they have the same value (thanks to one of the agreement rules given below), but this default agreement can be overridden. On the one hand it is always overridden for *I*, which has singular number but plural agreement-number; and *you* always has plural agreement-number regardless of its number. On the other hand it may also be overridden when the subject's meaning allows it, as in the examples quoted above. For example, although *two drops* has plural number, it has singular agreement-number, and *set* allows either singular or plural agreement-number. Unfortunately I cannot offer a formal account of the semantic condition "when the subject's meaning allows it", but the analysis does at least provide the formal machinery which is presupposed by such an account.

Apart from the important agreement-number feature, we can also recognise a very marginal role for person in a feature '**agreement-person**', which distinguishes *I* from other subjects (by the values '*I*' and '*non-I*'). In modern standard English this is only relevant to the verb *BE* (though as pointed out in note 000 it would apply more generally if *THOU* were possible). (We shall return below to the question of justifying such ad-hoc and restricted features.)

The only role played by these two agreement features is to mediate between the number of the subject and that of the verb, so there is no need for it on objects, complements of prepositions or any other nominal position. In fact, it is not even needed on all subjects, but only on subjects of tensed verbs. In short, it is not a feature of nominals as such, but rather of some subjects. A grammar which restricts it in this way, will explain why it has no relevance to other positions: because it does not occur in other positions. A second advantage of tying these features to a grammatical function rather than to a word-class is that it will allow us to explain the default singular agreement found with subjects that are not nominals, such as prepositional phrases (*Behind the gym is/*are a good place to meet*). We return to this advantage in section 3.1.

b. **Verb features.** The challenge posed by verbs is how to classify some tensed verbs in terms of number without extending this classification to all kinds of tensed verbs. The solution will use two features: '**subject-number**' and '**subject-person**'. As its name suggests, subject-number is sensitive to the subject's number, and applies only to present-tense non-modal verbs and *BE*; so subject-number is tied by default to the verb's inflection, but can also be fixed lexically with the result that the form *was*, for example, is lexically defined as having singular subject-number. Other verbs, such as past-tense verbs, simply have no subject-number. This will allow a very general agreement rule to apply to every verb's subject-number, but where a verb has no subject-number, it naturally does not have to agree.

The other feature, subject-person, has an even more restricted distribution, as it applies only to the one verb, *BE*, and has just one task: to distinguish forms that combine with *I* (i.e. *am* and *was*) from the others.

c. **The agreement rules.** The main rule deals with number, and can be very simple:

(16) A verb's subject-number is the same as its subject's agreement-number.

If a verb has a subject-number, it must agree; but if not, the rule is irrelevant. In addition there is a rule for person:

(17) A verb's subject-person is the same as its subject's agreement-person.

This only applies to *BE*, because this is the only verb that has a subject-person; and it only makes a difference when the subject is *I*.

1.6 Some theoretical issues

The previous section described the analysis in fairly theory-neutral terms. But what are its implications for syntactic theory? Once we try to formalise it we find that it is by no means neutral as to theory. Most theories allow agreement rules like (16) and (17), but not all allow the flexibility that is needed in the treatment of features. It demands a theory which allows all the features just mentioned, and not just the (possibly) universal features of number and person. The theory also has to allow features (not just feature-values) to be distributed unevenly across the subclasses of a word class. In short, it demands a theory that allows new features to be invented freely, and to be distributed among words by stipulation.

It could be objected that this is a recipe for bad theory, on the grounds that we should be seeking to strengthen rather than to weaken the restrictions imposed by a theory. This objection misses the obvious point that theory also has to match reality. Nobody wants a theory whose restrictions are stricter than those found in the subject-matter, because it will have no explanatory power. The theme of the present paper is that the standard theory of SVA in English is an example of just such a theory: it requires English (and every other language) to use a universal set of features (number and person) in a universal rule (strict agreement). If this corresponded to reality in English, it would certainly be preferable to the analysis being offered here; but it does not. The fact is that English is different from other languages, and that SVA in English is rather complicated. What we need is a theory whose restrictions exactly match those found in the data, and the evidence discussed above counts against the standard view.

It could also be objected that any analysis should have cross-linguistic justification, unlike the proposed new features agreement-number and agreement-person. But this is surely an empirical matter rather than a theoretical prerequisite; if we assume in advance that there are no features or rules which are unique to a single language, then our conclusion will certainly be that this is so - but the conclusion will be worthless. A well-established tradition in linguistics is to analyse each language as far as possible “in its own terms”, using cross-linguistic facts only in cases of uncertainty. Taking English in its own terms, we have no evidence for person, or for number in past-tense verbs, or for strict syntactic agreement, and we have seen some evidence against all these analyses. Even if every other language turned out to have all these characteristics, it would not help our understanding of language to claim that the same was true of English, if English is actually different.

In point of fact, of course, there is ample evidence that English is not alone in having complexities in the SVA rules, though other languages have complexities of different kinds. For example, in Modern Greek a singular subject may be used with a plural verb accompanied by a ‘with’ phrase (Holton et al 1997:502):

(18) Ἦρθαν ὁ Πέτρος μετὰ τὴν Μαρίαν.

Has-come(pl) the Peter with the Mary

‘Peter has come with Mary.’

A different complication is found in Classical Arabic (and other modern dialects), since verbs agree with a preceding subject in both gender and number, but only in gender with a following subject (Fischer 1992:96):

- (19) (a) jāʔ-a l-muʕallim-ūna
 came-masc.sing the-teacher-masc.plur
 ‘The male teachers came.’
- b jāʔ-at l-muʕallim-āt-u
 came-fem.sing the-teacher-fem.plur
 ‘The female teachers came.’
- c hāʔulāʔi muʕallim-ūna jāʔ-ū ʔamsi
 this.masc.plur teachers-masc.plur came-plur yesterday
 ‘These male teachers came yesterday.’

In both these languages we find a mismatch between the features of the verb and of its subject which rules out any simple analysis in which verb and subject have exactly the same features (and values). One step towards accommodating these mismatches would be to postulate a separate feature for subjects comparable with the agreement-number proposed here for English.

A final possible objection to the proposed analysis of English is that it raises learnability problems: how can a child learn that English has an agreement-number feature? I mention this objection because it was raised by two commentators, but the learner’s linguistic models in fact provide plenty of evidence for all the features and rules:

- for number: *this book, these books*;
- for subject-number and (preliminary) number-agreement: *he wins, they win*;
- for agreement-number and the correct number-agreement: *you win, two drops is enough, my family are elderly*;
- for agreement-person, subject-person and person-agreement: *I am, I was*.

The main thrust of this article is that agreement and agreement-features should be recognised only when they have observable effects, so by definition everything proposed here is learnable on the basis of observation. If anything, the onus is on those who support the standard analysis to explain how children learn that past-tense verbs have person and number in the absence of any observable effect. It could of course be a simple extension from present-tense verbs, but the child has no more reason to believe that this extension is correct than the linguist has.

The remainder of this paper will assume that the analysis just described in outline is correct, and will show how it can be integrated into a more general model of language structure, and how various details (not mentioned earlier) can be accommodated. The next theoretical issue, therefore, concerns the choice of general model. As mentioned earlier, the proposed analysis is not theory-neutral, but imposes various constraints on a formal model.

A. Most obviously it must not assume a fixed set of features, but must allow features to be invoked as needed. This excludes any theory which assumes a universal set of features, such as the early version of LFG envisaged by Bresnan (1982:288, 307).

B. Less obviously, perhaps, these features must not all be simply projected from lexical items (as modified by inflectional morphology), because agreement-number is clearly influenced by pragmatics - e.g. the singular noun *family* has singular agreement-number in some contexts and plural in others. As mentioned earlier, Pollard and Sag offer an analysis of SVA in which the relevant characteristic of the subject is not its syntactic number, but rather its referential index (1994:82). This analysis is clearly very similar to the proposed one except that it excludes the possibility of purely syntactic agreement, which is the default in the proposed analysis; for example, they are forced to consider ‘pluralia tantum’ nouns like *SCALES* as semantically plural (1994:87), and they treat Person as a semantic category in spite of the

ambiguities of *YOU* discussed earlier (1994:25).

There is little point in trying to decide whether other theories can accommodate the proposed analysis, because this is always best done by a theory's own practitioners. My aim is the more modest one of showing how it can be expressed in terms of one theory, **Word Grammar (WG)**⁷. The relevant parts of this theory will be explained as they are introduced.

2. A Word-Grammar analysis of English subject-verb agreement

2.1 Subjects

We start with the identification of subjects in WG. A WG analysis treats the **dependencies** between individual words as basic, in contrast with other theories where the part-whole relationships of constituent structure are fundamental. Phrases are implicit in these dependencies - for each word, there is a phrase consisting of that word plus the phrases of all the words that depend on it - but they play no explicit part either in the grammar or in a sentence structure. In short there are only two elements in the syntactic structure of *Dogs bark*, the noun *dogs* and the verb *bark*. There is no noun phrase or verb phrase or even sentence. The sentence's structure consists of these words and the dependency relationship between them, in which *dogs* depends on *bark*; and a full specification of this structure classifies both the words and the dependency.

Grammatical relationships are simply the classificatory categories that are applied to dependency relationships, so the 'subject' relationship is a dependency which is specified as 'subject'. This is shown in diagrams as an arrow (pointing to the dependent) carrying the label 's', in contrast with 'o' for 'object' and so on. Figure 1 gives the structure for a simple example. This relation-based approach means that it is very easy to refer to the subject of some verb *V*: in prose it is 'the subject of *V*' or '*V*'s subject' and more formally it be defined (as in LFG) as 'subject(*V*)'. The subject relationship is independent of word order, so the definition will pick out *she* as the subject of *has* in both the following examples:

- (20) (a) She has finished.
(b) Has she finished?

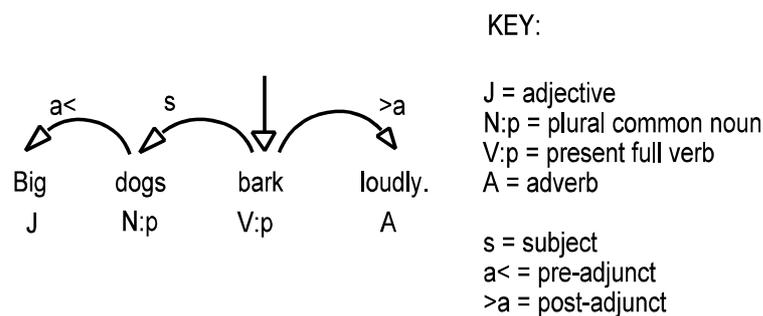


Figure 1

The WG approach to classification is based on the use of the 'isa' relationship⁸ which produces 'isa hierarchies' like the hierarchy of 'sorts' of HPSG (Pollard and Sag 1994:31). This approach contrasts with theories which classify in terms of features such as [\pm Noun]. (We shall see below that features play a very small part in WG compared with other theories.) Inflectional categories are word-classes such as 'past', and not values for attributes such as

'tense'. Instead of saying that *won* has the value 'past' for the attribute 'tense', we say that it isa 'past'. One advantage of this is to allow a unified treatment of inflections and lexemes, since *won* has the same relationship to *WIN* as it has to 'past': it isa *WIN* and 'past'. A convenient notation combines the two definitions into a single atomic name for *won*: '*WIN*:past'. Similarly, *dogs* is '*DOG*:plural', because 'plural' is the name of a word-class; but in this case (exceptionally) there is also a feature, 'number', which duplicates the classification in terms of word-classes. The same apparatus is applied to dependencies: the relationship between *dogs* and *bark* isa subject, which isa valency and pre-dependent and (ultimately) dependent. The 'isa' relationship is identified diagrammatically as in Figure 2 by means of a small triangle linked to a line; the triangle's base rests on the more general category. The figure shows how 'isa' links allow the grammar to apply to the words in a sentence, as well as relating elements in the grammar to each other.

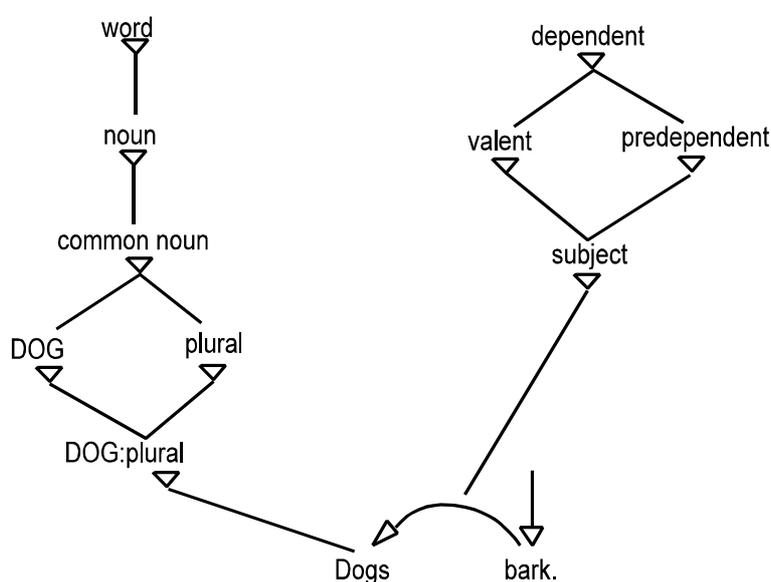


Figure 2

Another distinctive characteristic of WG is the extensive use of **default inheritance**, which allows generalisations (defaults) to be overridden by 'officially' recognised exceptions. The principle is familiar in morphology (where irregularities have long been handled in this way), but WG extends the same principles to the rest of grammar (as does HPSG: Pollard and Sag 1994:31). We shall make extensive use of it in handling the intricacies of SVA below, but I should explain here how it is related to the isa hierarchies. A rule which applies to X is automatically overridden by a formally similar rule which applies to Y iff Y isa X. For example, the default rule for ordering words and their dependents in English is (a) below, but it is overridden by (b) because predependent isa dependent; and since subject isa predependent, it inherits rule (b) rather than (a).

- (21) (a) A word's dependent follows it.
 (b) A word's predependent precedes it.
 (c) A verb:inverting's subject follows it.

Overriding applies freely, so rule (b) is itself overridden by rule (c) in the case of an 'inverting' verb (a tensed auxiliary whose other properties require subject-auxiliary inversion). The conflict between (c) and (b) is resolved in favour of (c) because

`verb:inverting' isa word (because it isa verb which isa word), and subject isa predependent.

The relevant parts of WG introduced in this section are the following:

- Grammatical relations (including subject) are as basic as word classes.
- All classification is done by means of isa relationships, and not by means of features.
- Isa relationships are hierarchical and allow default inheritance whereby rules that apply lower in the hierarchy override those that apply higher.

2.2 Number

Number is a feature so we now have to discuss the place of **features** in WG. As noted earlier, features play a very limited role because their role in classification is taken over by isa hierarchies. For example, there is no feature that distinguishes nouns from verbs for the simple reason that it would be redundant: we can generalise across nouns by referring to `noun', and we can classify words as nouns by means of an isa link to `noun'. `Noun' is not a feature-value, but a word class - or more accurately, a word type, the `typical noun'. Moreover, the isa hierarchy shows which other categories noun contrasts with, so there is no need for a feature of `nouniness' or `part of speech' to show this.

The only role for which features are uniquely adapted is in formulating rules of agreement - e.g. for saying that an English determiner agrees in number with its complement common noun. In this case it is absolutely essential to refer to an attribute (a feature) with a fixed range of values. Suppose we tried to write a grammar without invoking the feature `number'. We can easily distinguish singular and plural (common) nouns without it - all we need is two word classes with atomic names `singular-noun' and `plural-noun' linked by an isa link to the superclass `noun'; and similarly for singular and plural determiners (e.g. *this* versus *these*). But the agreement rule would have to be split into two separate rules:

- (22) (a) A singular-determiner's complement must be a singular-noun.
 (b) A plural-determiner's complement must be a plural-noun.

These rules work, but they wrongly imply that the link is arbitrary, since it would be just as easy to reverse the pairings or indeed to have one rule without the other. The only way to avoid this arbitrariness is to invoke a single feature: number. But it is important to stress that this is the only use of features.

The status of features is confused by the way grammatical categories are used in traditional grammar. The traditional notion of an inflectional paradigm is based on the notion that inflectional forms can be arranged in a matrix with a small number of dimensions, each of which must therefore count as a feature. Number is one such feature, alongside gender and case. As it happens, these categories are often involved in agreement rules in inflected languages (though not in English), and when they do, they qualify as features. However, there are many other categories which are never involved in agreement rules - mood, aspect, voice and even (arguably) tense. For these categories we certainly need classification, and more specifically cross-classification, but this can be accommodated in an isa hierarchy. Features would do no work, because there would never be any reason to mention them (apart from the labelling in pedagogical grammars). In earlier versions of WG I argued that features should be used for all inflectional morphology (Hudson 1990:90), but this now seems to have been a mistake because most inflectional `features' are redundant (Creider and Hudson in press).

The conclusion so far, then, is that `number' is a grammatical feature precisely because it is needed for agreement rules. However this is not the basic mechanism for distinguishing singular and plural nouns; rather, it is one consequence of the basic distinction, alongside the various morphological and semantic differences. The basic distinction is made

in terms of word classes in the ordinary isa hierarchy, so (as mentioned previously) *dogs* isa plural-noun (a word class) and has the value 'plural' for the feature 'number'. The word class and the feature-value are linked by a general rule (a) whose status is similar to that of the morphological⁹ and semantic¹⁰ rules (b) and (c).

- (23) (a) The number of a plural-noun is plural.
 (b) The whole of a plural-noun is its stem + -s.
 (c) The referent of a plural-noun isa set.

However, the word class and the feature-value are independent so a noun may have plural number without being a plural-noun. This is a plausible analysis for plural pronouns like *they*, which have none of the morphology of plural common nouns. Conversely we might even recognise *linguistics* as a plural-noun which has singular number in spite of its morphology (as in *this/*these linguistics*). Both kinds of discrepancy between classification and feature-value are possible precisely because they are logically (and formally) distinct.

Another advantage of this distinction is that we can exploit the machinery of default inheritance in order to show the relative markedness of different forms. If *dogs* isa plural-noun, what is *dog*? If we recognise 'singular-noun' as another subclass of common noun, alongside plural-noun, we give them the same status; but another, and better, analysis picks out *dog* as the unmarked member of the pair by classifying it simply as a common noun - a common noun in its most typical form (the bare stem). The independence of word class and feature allows us then to have the best of two worlds: this asymmetrical relationship in terms of word classes can be combined with a symmetrical relationship in terms of features, with *dogs* and *dog* having the values 'plural' and 'singular' on the feature 'number'. The relevant rules are the following (where rule (c) is repeated from (17)).

- (24) (a) Plural-noun isa common-noun.
 (b) The number of a common-noun is singular.
 (c) The number of a plural-noun is plural.

Given that *dog* isa just the common-noun *DOG*, (b) assigns it singular number by default; but *dogs* gets its number from rules (a) and (c). The analysis is shown diagrammatically in Figure 3¹¹, where the singular number of *DOG* is inherited regularly but the plural number of plural-noun overrides the default.

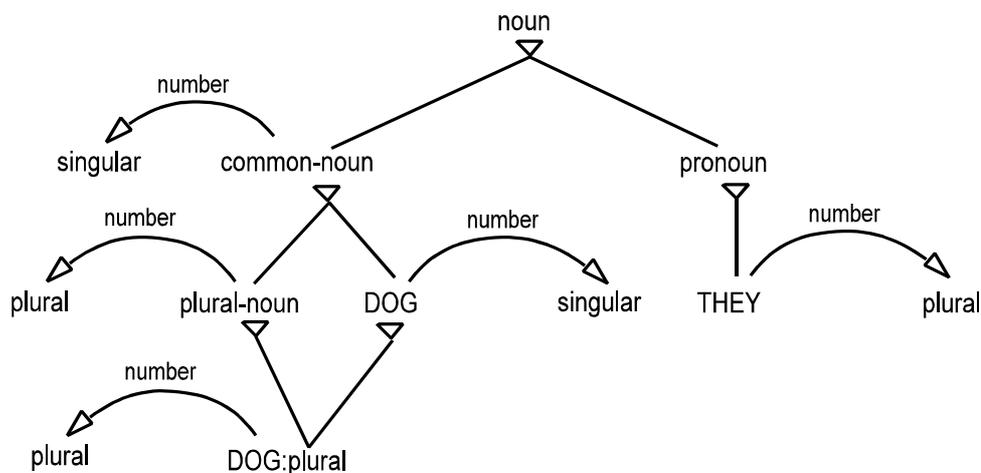


Figure 3

The distinction between features and word classes means that the distribution of features has to be stipulated - exactly as required, according to our discussion in section 1. What kinds of word have a number? Our rules so far only deal with common nouns, but SVA applies to every kind of nominal subject including names and pronouns, so every kind of noun must have a number, with singular as the default. Consequently we can make the rules more general:

- (25) (a) A noun has a number.
 (b) The number of a noun is singular.

The use of rules like these to control the distribution of features among words is an important (and perhaps unique) characteristic of WG. It will play a major role in the analysis of troublesome verbs below.

This section has contributed the following elements of WG theory:

- Although features are not needed for classification, they are essential for agreement rules.
- The distribution of features and their values among words is stipulated by rules, some of which define very general defaults.
- The value of a feature may be defined in relation either to a word class (e.g. plural-noun) or to an individual lexeme (e.g. *they*).
- The unmarked value of a feature may be assigned to the superclass itself because default inheritance allows it to be overridden for subclasses.

2.3 Agreement-number and -person

One of the elements in the proposed treatment of SVA is the distinction between the subject's ordinary number and its 'agreement-number' - i.e. the number that it imposes on the verb. This is necessary because a plural subject (e.g. *two drops*) can impose singular number, and a singular subject (e.g. *the Parsons family*) can impose plural number. This is also our mechanism for explaining the special treatment of *I* and *you*. (It should not be confused with the notion of 'agreement-person' which picks out just *I*; this will be discussed at the end of the section.)

The discussion in the previous subsection already provides all the theoretical machinery that is needed. First we need a rule which assigns the feature 'agreement-number' to the subject of every tensed verb, and then we link its value by default to that of its (morphosyntactic) 'number':

- (26) (a) The subject of a verb:tensed has an agreement-number.
 (b) A word's agreement-number is its number.

These two rules generate structures like Figure 4.

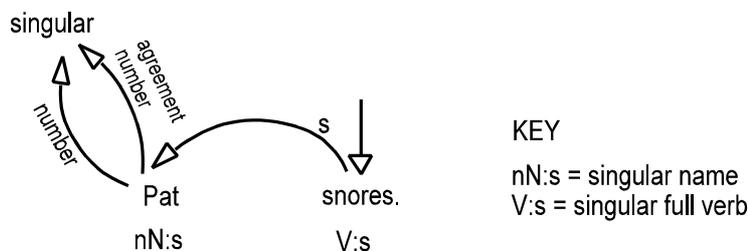


Figure 4

What kinds of word have this feature? We could give the same answer as for number:

every noun. However, we noted in 1.5 that it is only relevant to subjects, so rule (20a) restricts it to subjects of tensed verbs. Moreover, it applies to all such subjects, even when they have no ordinary number because they are not nominals; we shall develop this advantage in section 3.1. One of the attractions of a theory in which features are assigned by rule is that these rules may define the words concerned either in terms of their word class or in terms of their function, which allows the use of irrelevant features to be minimized.

Having set up the default pattern in which agreement-number and number agree, we can now consider the deviations which justified the distinction in the first place. Let us start with the singular pronouns *I* and *you*. Their problem is that they trigger plural agreement, though in terms of both meaning and syntax¹² they are singular. The solution is a lexical entry for each word which overrides the default:

- (27) (a) The agreement-number of *I* is plural.
 (b) The agreement-number of *you* is plural.

These rules take priority over the default rule (20b), so their agreement-number and number differ. This overriding is built into the grammar just like any other systematic irregularity.

Other kinds of mismatch between agreement-number and number are much harder to deal with because they are variable rather than rigid. For example, although *two drops* triggers singular agreement in (9a), it can also trigger the regular plural agreement as in:

- (28) Two drops *have/*has* fallen onto this paper, each making a separate mark.

The problem is that it depends on how the drops are **construed** (Langacker 1994:591), as a single object or as two separate objects. For this phrase both options are available, so the choice cannot be made in the grammar (as it is for *I* and *you*). And yet the choice is not always free. For example, *archipelago* must have singular agreement however much one may construe its referent as a collection of islands, and as we saw earlier, a pair of bathroom scales must have plural agreement regardless of its conceptual singularity:

- (29) (a) The archipelago/Indonesia *is/*are* very beautiful.
 (b) The scales *are/*is* broken.

I cannot solve this problem, but at least we now have a formal means for expressing the solution in terms of mismatches between number and agreement-number.

Finally we need a very brief discussion of the other special feature, 'agreement-person'. This is the feature that identifies *I* and is only needed when *I* is the subject of *BE* in order to explain the peculiarity of *I am* and *I was*. The principles just applied to agreement-number apply equally here. We need not worry that agreement-person is clearly ad hoc and parochial, because ad-hoc features are precisely what the facts require; and we can restrict it so that it only applies when it is strictly relevant. Here are the rules:

- (30) (a) The subject of *BE*:tensed has an agreement-person.
 (b) The agreement-person of a word is 'non-I'.
 (c) The agreement-person of *I* is 'I'.

The other half of the agreement pattern will be explained in the next section.

This section has reached the following theoretical conclusions:

- Some features are ad hoc rather than drawn from a universal vocabulary.
- Features may be associated with words according to their grammatical function rather than according to their word class.

2.4 Subject-number and -person

Now we turn to the features carried by verbs, 'subject-number' and 'subject-person'. Their values are determined by the agreement rules, so the only question is which verbs have these

features at all. At this point we are firmly back in sentence grammar, without any individual discretion at all.

Starting with the more important feature subject-number, the goal is to restrict it to present-tense non-modal verbs and the past tense of *BE*. This is easy given that features can be assigned to word classes, and given that a negative rule may override a positive one.

- (31) (a) A verb:tensed has a subject-number.
 (b) A verb:past has no subject-number.
 (c) A modal-verb has no subject-number.

These rules cover the cases other than *BE*. Rule (a) is the default which rests on the assumption that present-tense verbs are simply default tensed verbs, as indicated by both their morphology and their meaning. One consequence of this assumption is that subject-number will be assigned by default to past-tense verbs unless this is blocked, hence the need for rule (b). Rule (c) blocks subject-number for modal verbs (a word class which is a auxiliary verb).

The peculiarities of *BE* are easy to state in prose, but much harder to formalise. The fact is that (in spite of rules (b) and (c)) tensed *BE* always agrees with its subject, even in the past tense and even when it is a modal verb as in (26).

- (32) She's to come at once.

It would be easy to state this as a default rule for *BE*:tensed:

- (33) *BE*:tensed has a subject-agreement.

The intention would be for this 'lexical' rule to block the two exception rules (b) and (c); so although in general past tense excludes subject-agreement by (b), the special rule for *BE* takes priority and blocks this exclusion. However one of the basic principles of default inheritance is that overriding requires a direct 'isa' relationship between the two rules concerned: rule A overrides rule B only if A contains a category which is a the corresponding category in B. The problem with *BE* can be seen in Figure 5: there is no such relationship between it and the categories in (b) and (c), 'verb:past' and 'modal-verb'. Consequently, if it combines with verb:past giving *BE*:past, both rule (31b) **and** rule (33) will apply, and it will inherit both since neither can override the other. This leads to a conflict, so the whole structure should 'crash' and the past tense of *BE* should be totally ungrammatical. (This is precisely what happens in another form of *BE*, the negative first-person present-tense, which explains the badness of **I am*; see Hudson forthcoming.) This is clearly the wrong outcome.

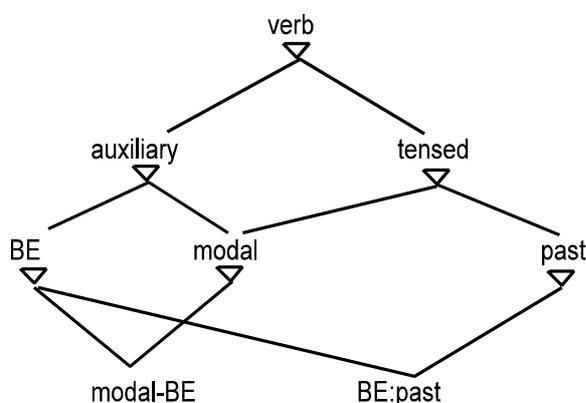


Figure 5

The best we can do is to stipulate that *BE* wins in each of these two conflicts. This can be done by rules which refer explicitly to the combination of *BE* with ‘past’ and ‘modal’.

- (34) (a) *BE*:past has a subject-number.
 (b) *Modal-BE* has a subject-number.

In summary, rules (31b) and (31c) which apply to ‘modal’ and ‘past’ override the default (31a), which applies to ‘tensed’, but are themselves overridden by (34a) and (34b). We can generalise across these two cases by rule (33), which applies to *BE*, but this rule can achieve nothing on its own. It is hard to know whether this conclusion points to a shortcoming in the logic of default inheritance, to an incorrect analysis or to an important fact about the complications of subject-verb agreement.

The other feature which needs to be assigned to some verbs is ‘subject-person’. This is easier since it applies only to tensed forms of *BE*:

- (35) *BE*:tensed has a subject-person.

This feature has the same values as the subject’s agreement-person feature: ‘I’ for *I*, ‘non-I’ for all other subjects.

In this section we have shown how the grammar can ensure that some verbs have the feature ‘subject-number’ while others lack it. What makes this possible in a WG analysis is the fact that features are not used for classifying words, but are assigned by rule on the basis of an existing classification in terms of word classes.

2.5 The agreement rules and some examples

Now that we have set up a system of features for verbs and another system for their subjects, the agreement rules are very simple. They are repeated here from (12) and (13):

- (36) a A verb’s subject-number is the same as its subject’s agreement-number.
 b A verb’s subject-person is the same as its subject’s agreement-person.

Rule (a) applies only if the verb concerned has a subject-number, so it does not apply at all to past-tense verbs or modals (other than *BE*); and similarly for rule (b), though the distribution of agreement-person is different. It will be recalled that the feature ‘agreement-number’ mediates the link to the subject’s ordinary number, with the possibility of a mismatch between them.

The main goal of this subsection is to illustrate the effects of these rules, starting with a pair of completely straightforward sentences: *Dogs bark* and *Dogs barked*. Their structures are shown in Figure 6, which shows how present-tense verbs have a subject-number but past-tense verbs do not. The analysis of the subject *dogs* is the same in both cases. In contrast, the past tense of *BE* does have a subject-number, as can be seen in Figure 7¹³ (where the label ‘r’ stands for ‘sharer’, which in this example corresponds to the traditional ‘subject predicate’). The distribution of subject-number decides where there is agreement: a verb agrees with its subject in number iff it has a subject-number.

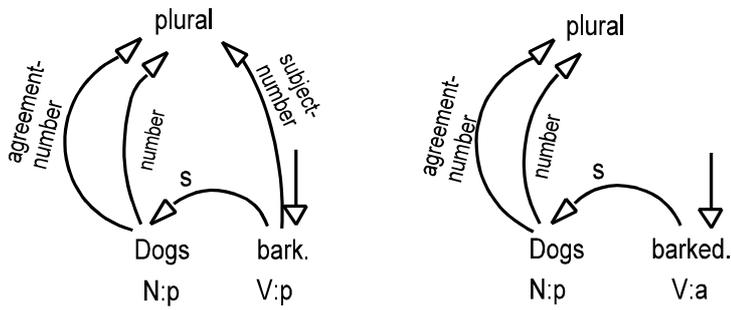


Figure 6

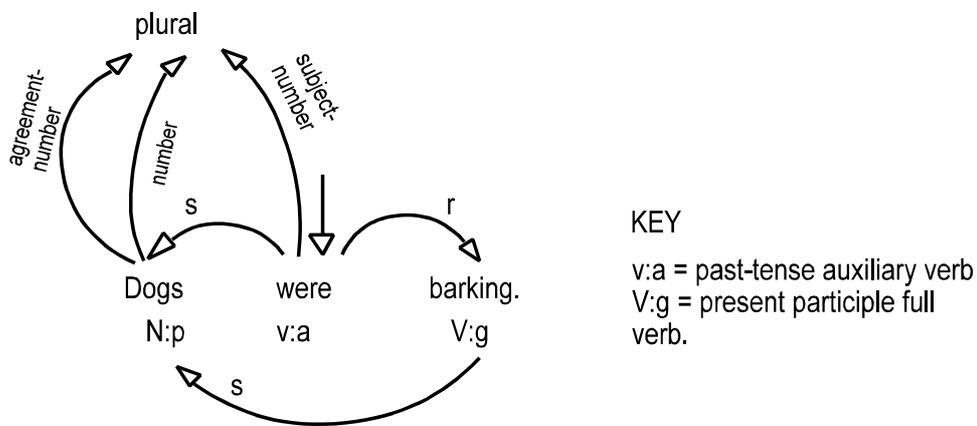


Figure 7

The remaining examples focus on troublesome subjects, starting with *I*. This is troublesome with most verbs because it takes plural agreement, as in *I sneeze*/**sneezes*. This is accommodated by a mismatch between its number and its agreement-number. However with *BE* it is even more troublesome because it takes a unique agreement form in the present tense (*am*) and the (expected) singular form in the past tense (*was*). These exceptions are handled by means of the special ad-hoc features `agreement-person' on *I* and `subject-person' on *BE*. These three possibilities are illustrated in Figure 8 (which omits the dependency arrows to compensate for the complexity of the features).

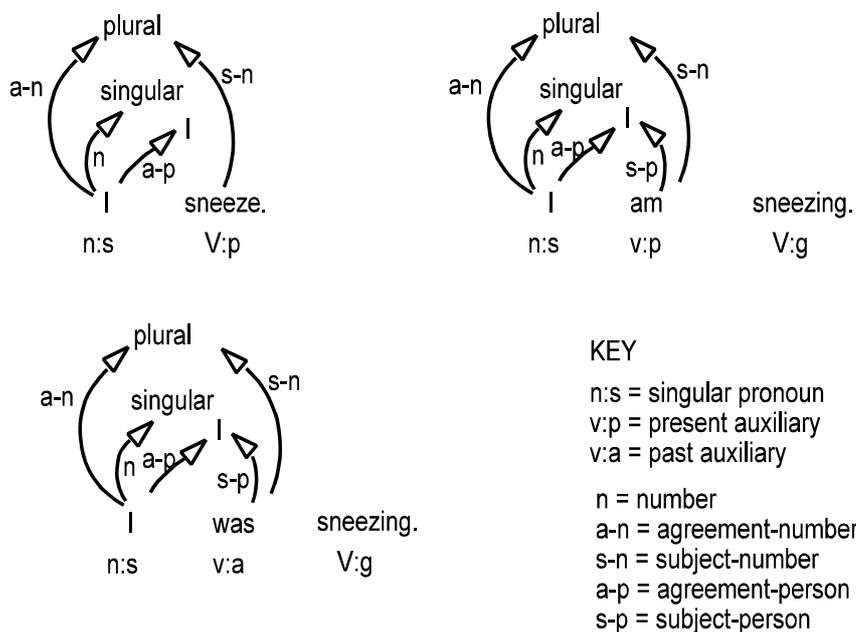


Figure 8

Finally we have the two examples quoted earlier which illustrate the effect of semantic/pragmatic number conflicting with morpho-syntactic number:

- (37) (a) Two drops deodorizes anything in your house.
- (b) The Parsons family were great letter writers.

The structures of these sentences, including their number features, are shown in Figure 9, but as admitted earlier, the diagram does not attempt to explain why agreement-number and number are different as this requires a much more ambitious programme of research.

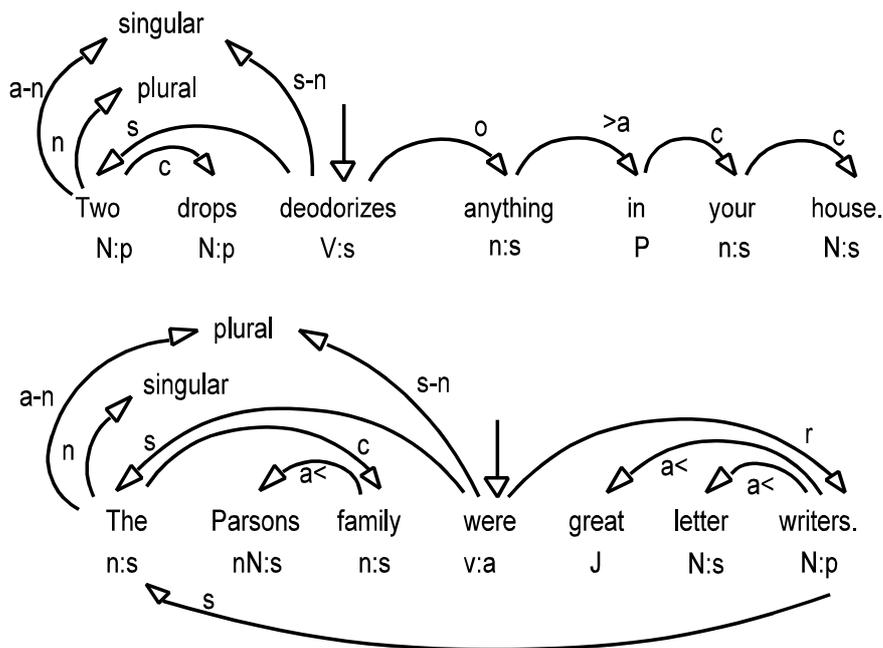


Figure 9

3. Some extra problems

3.1 Non-nominal subjects

For completeness I must mention three further problems that involve SVA, but which were not covered in the introduction. I shall show how the analysis introduced above can be extended to solve these problems. The first is the problem of subjects which themselves have no number because they are not nouns (Quirk et al 1985:755):

- (38) (a) To treat them as hostages *is* criminal.
 (b) In the evenings *is* best for me.
 (c) Slowly *does* it!

Such subjects always trigger singular agreement¹⁴ which it seems natural to explain as some kind of default. But exactly what 'kind of default'?

It is not the morphological default because morphologically singular verbs are marked by the presence of the suffix *-s*, so the morphological default is the plural verb-form. Nor can singular be the default value for the number of the subject itself, because this would involve assigning a number to infinitive phrases, preposition phrases or adverbs; and if they have a number in subject position, why not elsewhere?

The WG analysis of SVA offers another possibility: that non-nominal subjects have no (ordinary) number at all, but they do have an 'agreement-number'. This follows automatically, in fact, from rule (20) which assigns an agreement-number to every subject, rather than to every noun. We can now see that this rule has two advantages over one which assigned agreement-number to nouns: it means that agreement-number, unlike number, is found only with subjects, and that it is found on all subjects, even if they have no number. If this is so, then it is easy to explain the default singular agreement: singular is the default value for agreement-number:

- (39) A word's agreement-number is singular.

Normally agreement-number is fixed by agreement with number, but this rule applies when no other rule does.

3.2 *THERE*

Another well-known problem for SVA is the effect of having *THERE* as subject. This is a problem because the verb seems to agree not with *THERE*, but with the complement which is notionally the subject:

- (40) There *is* a fly in my soup. There *are* two flies in my soup.

Why should the verb agree with *a fly* and *two flies* when its subject is *THERE*? One might consider denying that *THERE* really is the subject, but this analysis is surely beyond dispute because *THERE* is the word which behaves as subject for other rules such as subject-auxiliary inversion and subject raising:

- (41) (a) *Is* there a fly in my soup?
 (b) There *seems* to be a fly in my soup.

The grammatical subjecthood of *THERE* is as close to being a fact as anything in grammar.

A much better explanation fits well with the rest of the WG analysis. It is normal to classify *THERE* as a pronoun, on the grounds that it occurs as subject in contexts such as tag questions where pronouns are found. But if it is a pronoun, it must have a number, and as McCawley suggests (1988:261), *THERE* takes the number of the notional subject; so *there* is singular with *a fly* and plural with *two flies*. According to this analysis, then, *THERE* agrees

with the complement nominal, and the verb agrees with *THERE*. This solves the problem of SVA, but it raises a different problem: why should *THERE* agree with the verb's complement? What grammatical mechanism can ensure this?

According to WG (Hudson 1990:254-5) the mechanism is the same as the one which ensures that extraposition *IT* carries the meaning of the extraposed phrase, which in turn builds on the analysis of determiners in noun phrases. In a noun phrase the determiner is a pronoun which (as in the DP analysis of generative grammar) has the common noun as its complement; in other words, the determiner is the phrase's head (ibid:268-76). Thus, in *this book*, *this* is the head and *book* is its complement. A number of rules are built on this head-complement dependency, including the following:

- (42) a A pronoun and its complement have the same number.
 b A pronoun and its complement have the same referent.

These rules explain why the singular *A* requires a singular complement, as in *a fly*/**flies*, and why the head and complement contribute different kinds of information (indefiniteness and 'fly-ness') to the definition of the same referent. It seems natural to exploit these rules for extraposition and *THERE*. Suppose we treat the delayed phrase in each case as the complement of the pronoun that replaces it. Then no more need be said, because the rules in (42) will guarantee both number agreement and coreference, explaining why *There is a fly in my soup* has the same number agreement and also the same meaning as *A fly is in my soup*.

The WG analysis of the singular example is shown in Figure 10, which shows how the number agreement is explained by the extra dependency (labelled 'c' for complement) shown beneath the words. In short, *a* agrees with *fly*, *there* agrees with *a*, and *is* agrees with *there*. The first two agreements are ensured by rule (42a), which also ensures agreement in *my soup*. The only cost of this analysis of *THERE* is a rule which allows *THERE* to take an extraposed noun phrase as its complement.

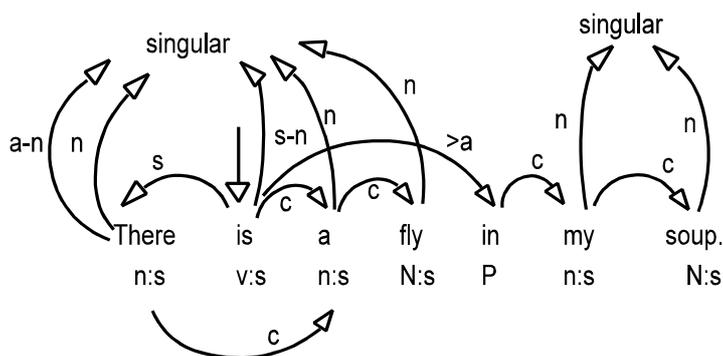


Figure 10

This analysis allows an analysis of another detail of the SVA system. In general, coordination with *and* triggers plural agreement, but for some speakers¹⁵ this does not apply after *THERE*:

- (43) (a) A boy and a girl *were* on the back seat.
 (b) There *was*/**were* a boy and a girl on the back seat.

This is to be expected if *THERE* is a pronoun with the delayed nominal as its complement, because nouns coordinated with *AND* do not trigger plural agreement on the determiner-pronoun: *this*/**these* *boy and girl*. In short, *THERE* agrees with each of the coordinated

nominals separately, so it is singular.

3.2 Non-standard dialects

Finally, we need to see how the proposed analysis accommodates, with only minor changes, the many variations on SVA found in non-standard dialects. Dialect variation confirms the general view that SVA is a dying and very messy system in English which continues, if at all, only through fragmentary rules which are very different from the simplicity and elegance of the standard view of syntax.

Compared with other dialects, Standard English (SE) is relatively archaic, which is helpful when it comes to comparisons because the rules in other dialects are generally either identical or similar to rules found in SE. We therefore start by reviewing all the rules introduced above for SE. They are classified here according to their contribution to SVA and renumbered for later reference.

- (44) The agreement rules
 1. A verb's subject-number is the same as its subject's agreement-number.
 2. A verb's subject-person is the same as its subject's agreement-person.
- (45) The rules for nominal number
 3. A noun has a number.
 4. The number of a noun is singular.
 5. The number of a plural-noun is plural.
- (46) The rules for agreement-number
 6. The subject of a verb:tensed has an agreement-number.
 7. A word's agreement-number is singular.
 8. A word's agreement-number is its number.
 9. The agreement-number of *I* is plural.
 10. The agreement-number of *you* is plural.
- (47) The rules for verb number
 11. A verb:tensed has a subject-number.
 12. A verb:past has no subject-number.
 13. A modal-verb has no subject-number.
 14. *BE*:past has a subject-number.
 15. *Modal-BE* has a subject-number.
- (48) The rules for person
 16. The subject of *BE*:tensed has an agreement-person.
 17. The agreement-person of a word is `non-I'.
 18. The agreement-person of *I* is `I'.
 19. *BE*:tensed has a subject-person.

In comparison with SE, at least some non-standard dialects have no SVA in past tenses. Most (perhaps all) have lost the number distinction between *was* and *were*, having generalised one or the other to all subjects, or even specialised *was* for positive forms and *were* for negatives (Trudgill 1990:98)

- (49) (a) He was there, weren't he?
- (b) You was there, weren't you?

In terms of the present analysis, these dialects lack rule 14 and rules 16 and 19 apply only to present-tense *BE*, so SVA is strictly a matter for present-tense verbs only. This change also allows rule 6 to assign agreement-number only to the subjects of present-tense verbs.

Another simplification affects present-tense verbs. In East Anglian dialects present-

tense verbs have no s-form at all (ibid:94):

- (50) (a) He like her.
 (b) She want some.
 (c) That rain a lot there.

In contrast, many dialects of the west and north of England have the -s suffix in all present-tense forms (ibid):

- (51) (a) I wants it.
 (b) We likes it.
 (c) They sees them.

These dialects differ from each other only in the morphology of present-tense verbs (marked by no suffix or by -s), but they may differ from SE in having no SVA at all, depending on whether they maintain it in irregular verbs, especially *BE*. According to Trudgill (ibid:98) at least some traditional dialects have no SVA in *BE*, so these dialects may have no SVA. If so, these dialects have none of rules 1, 2 and 6-19. It is easy to see the functional motivation for this simplification of grammar, given the very low functional load of SVA.

In many non-traditional urban dialects the loss of SVA is only partial. In many dialects, for example, it is lost in all negative auxiliary verbs, including the non-modals *ain't* (for *haven't/hasn't* and for *aren't/isn't/*amn't*) and *don't*. (This seems to be true in London, for example.)

- (52) (a) He *ain't* working/worked at all.
 (b) He *don't* work at all.

Here subject-number is assigned as in SE except that the exclusion of modal verbs (rule 13) is extended to negative auxiliaries as well by a rule which is not found in SE. Further west, on the other hand, auxiliary *have* and *do* have no SVA even when positive, though SVA may still apply to *be* (Edwards 1993:225, Trudgill and Chambers 1991:51):

- (53) (a) She *makes* a fuss about nothing, she *do*.
 (b) He've worked hard.

In these dialects the exclusion may be generalised to all auxiliary verbs, with a special dispensation for *BE*. If so, rule 13 applies to auxiliary verbs rather than just to modal verbs. Interestingly, this reorganisation means that *BE* is a more straightforward exception than in SE, so a single rule can replace the awkward pair of rules 14 and 15 discussed earlier (see (28)):

- (54) *BE*:tensed has a subject-number.

Yet another non-standard pattern found in several parts of the British Isles involves a distinction among different kinds of subject. In Irish English, for example, SVA treats pronouns differently from other subjects. The following example illustrates the difference clearly (Harris 1993:155):

- (55) Them eggs *is* cracked, so they *are*.

According to Harris there is considerable variability in the system, but the s-form verb is ungrammatical with a plural personal pronoun, although it is normal with all other kinds of plural subjects as in the following:

- (56) (a) Them two fellas *was* hit.
 (b) Her grandchildren *comes* down.

This peculiarity can be explained in our analysis as an extension of the exception already made in SE (rules 9 and 10) for the personal pronouns *I* and *you*; Irish English makes the same exception for *they* (and possibly for other personal pronouns too) by giving them obligatory plural agreement-number. In contrast, other subjects may have either obligatory

singular agreement-number, or variably singular or plural agreement-number if their number is plural.

Our knowledge of non-standard dialects even within Britain is very patchy, but all the reported examples of differences in SVA seem to fit comfortably into the WG analysis. In comparison with the conservative SE, they all show a reduction in the scope of SVA which can be explained functionally as the result of other changes in the grammar which have reduced the role of SVA (rather than word order) in identifying subjects; the fact that SVA is more developed in SE is presumably due to the conservative influence of the written standard. This reduction is achieved in most cases by reducing the number of verbs that have subject-number, but at least in the case of Irish English the mechanism has been an increase in the number of non-agreeing subjects, i.e. subjects whose agreement-number is fixed lexically rather than by the agreement contrast.

The WG analysis is confirmed to the extent that these variations can be expressed in terms of the features subject-agreement and agreement-number. In the standard view, however, the variations are much harder to explain. Why should personal pronouns be given special treatment? Why should auxiliary verbs be special? And why should there be a steady diachronic shift towards a grammar where SVA plays no part at all?

4. Conclusion

The dialect variation just surveyed shows that SVA is a very different system in modern English from the system found in Old English and modern German (not to mention even more highly inflected languages). English seems to be heading for the state that mainland Scandinavian languages have already reached, namely zero SVA; and indeed some dialects are already there. What, precisely, has changed? This diachronic question will provide a useful basis for comparing the standard view with the WG view just outlined.

According to the standard view, the agreement system itself has not changed at all. The same range of person and number features are carried by modern subjects and finite verbs as were found in Old English, and the same agreement rule links the two. Indeed, if the system is viewed at a sufficiently abstract level, the same features and agreement rule may be found in every language, in which case change is ruled out in principle. All that has changed is the morphology, so modern English has a great deal of syncretism in the verb paradigm, and seems set to achieve the limit of total syncretism for number and person. But the same analytical question remains for SVA as for case (Hudson 1995b): why should the features persist unchanged in the syntax regardless of the fundamental changes in morphology? In the absence of overt morphology how does the linguist know about the feature contrasts? Worse still, how does the infant language-learner know them? They cannot be learned from experience, so they must be innate; thus the standard view is strongly linked to an innatist theory of language acquisition.

According to the WG view, on the other hand, the historical changes have affected the syntax and morphology in parallel. The constant theme in the changes has been a steady reduction in the number of verbs that show SVA. This effect has been achieved by a series of grammars which have restricted the range of verbs that have relevant features. Most dramatically they restricted person to the extent that this applies now to just one verb, *BE*, and even then only in relation to one personal pronoun, *I*. For most verbs the vestiges of person - the unique status of *I* and *you* - were taken over by a new feature based on number, our agreement-number. This extra feature allowed *I* and *you* to be treated, exceptionally, as though they were plural; but it is tempting to speculate that it also encouraged 'semantic'

agreement - an example of an increasingly useless morphological contrast being 'recycled' as a way of expressing important distinctions. Meanwhile the grammar also restricted SVA by extending the range of verbs that had no number feature. Ever since Old English this has included the modal verbs, but these have now been joined in Standard English by all past-tense verbs (except *BE*), and in some other dialects by all verbs. In short, SE represents an uncomfortably messy transition stage between the relatively simple agreement of Old English (for which the standard view may be appropriate) and the even simpler SVA-free grammars of some modern dialects.

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Footnotes

1. The judgments on (2b) are for British English; Americans tend to favour *His family is overweight*.
2. One detail that can safely be left to a footnote was pointed out by a reviewer. The old agreement form for use with the subject *thou* survives not only in some dialects, but also in our passive competence. The analysis presented here could easily be extended as follows: for the dialects concerned, we add 'thou-form' to the inflections, we extend the 'subject-person' feature to all verbs, and we give the value '2' to the 'agreement person' of the pronoun *thou*.
3. According to the usual practice, lexemes are written in capital letters, but they are also italicized like word-forms.
4. There is also some psycholinguistic support for the view that syntactic agreement is basic; Bock et al report (1993) that error patterns in experiments tended to follow what they call 'lexical' agreement, rather than semantic (as claimed by Reid) or purely morphophonological agreement.
5. According to Quirk et al (1985:762) the conflict is generally resolved in favour of the nearest conjoined subject, whereas Greenbaum (1996:240) claims that the verb is usually plural. In our examples the nearest noun is singular, so these principles lead to opposite resolutions, which suggests that there may not, in fact, be any general principle for resolving the conflict - we all simply muddle through as best we can, often by preferring a different construction which avoids the conflict. On the other hand it is also possible that some speakers do in fact have one of these conflict-resolution strategies as part of their regular grammar; at least one American speaker reports that *win* is merely 'a little weird' after *the girls or their mother*.

6. The choice of pronoun after *ONE* varies greatly, and repetition of *ONE* is the least preferred option (being stereotypically associated with royalty). In the vernacular it would normally be avoided in favour of *YOU*, but if used it would be accompanied anaphorically by a variant of *THEM* (e.g. *themselves*) or *HIM*.
7. More information about Word Grammar can be found on the website <http://www.phon.ucl.ac.uk/home/dick/wg.htm>. This page includes links to a number of freely downloadable papers, as well as a 'Word Grammar Encyclopedia' which is updated every year. The main published references are Hudson 1990, 1995a, 1998.
8. The 'isa' relationship is an established part of cognitive science; see for example Reisberg (1997:280). The name is clumsy because 'isa' is used as a verb, but it has no other inflections.
9. For more details of how morphology is handled in current WG, see Creider and Hudson (in press). A word's 'whole' is its fully inflected form, in contrast with its stem which it inherits from its lexeme.
10. For more details on the semantics of plurality see Hudson (1990:139-46). A plural noun's referent is a set each of whose members isa the noun's sense.
11. The labels on arrows are short-hand for isa links to the same labels located in an isa hierarchy of relationships. Thus an arrow labelled 'number' is a relationship which isa number which isa feature, just as one labelled 's' isa 'subject' which isa dependent.
12. One syntactic characteristic of singular personal pronouns is that they cannot be used as determiners; for example, although *you students* is possible, **you student* is not, and similarly for *we students* compared with **I student*.
13. The notation which has been standard in WG since Hudson 1994 and Rosta 1994 distinguishes a 'surface structure', drawn above the words, from additional dependencies which are drawn below them. The surface structure must be free of discontinuous phrases and

every word, including the sentence root, must carry just one arrow.

14. As Bas Aarts points out to me, many non-nominal subjects can be extraposed, in which case they are replaced in subject position by the pronoun *IT*: *It is criminal to treat them as hostages; It is best for me in the evenings*. The singular number of *IT* supports the view that these subjects are themselves singular, rather than number-free.

15. The * before *There were a boy and a girl on the back seat* reflects not only my own judgment but also that of a number of colleagues. However two commentators agree in preferring *were* to *was* in this example, which suggests that they may be assigning a different structure to such examples. This variation clearly calls for further research.