

Resolution rules in Qafar*

R. J. HAYWARD and G. G. CORBETT

Abstract

Recent research, based primarily on Indo-European and Niger-Kordofanian languages, has led to a set of assumptions about possible 'resolution rules', the rules which determine agreement with conjoined noun phrases. Data from the East Cushitic language Qafar appear to run counter to these assumptions in several respects. Our analysis shows that the patterns found in Qafar are in fact consistent with previous analyses. The apparent differences result from the following facts: conjoined expressions stand in the absolutive case; 'default' agreement occurs when the controller stands in the absolutive; the default form is the feminine singular, which is syncretic with one of the plural agreement forms.

Introduction

While a fair amount of work has been done on resolution rules, the rules which determine the form of agreement used with conjoined noun phrases, data have been drawn mainly from Bantu languages and from various branches of Indo-European. In this paper we look at Qafar, a Cushitic language, in which the interrelation of gender and number is complex. At first sight, the resolution facts appear to be very different from those established in the literature for other languages; on closer examination it turns out that certain basic claims about resolution systems do in fact hold, though they are reflected in surprising surface realizations, which must be accounted for in terms of particular features of Qafar morphology. We first set out the main generalizations concerning resolution systems (section 1); next we outline the categories of number and gender in Qafar (section 2). Given this essential background, we can analyze number resolution in Qafar (section 3) and the factors which influence whether or not it operates (section 4).

1. Resolution rules

The term 'resolution rule' is taken from Givón (1970). It refers to a rule which specifies the form of an agreeing element (or 'target') when the element determining the agreement (the 'controller') consists of conjoined noun phrases. Thus if we have a neuter singular conjoined with a feminine singular in Slovenian, it is the gender and number resolution rules which specify the form of the target, say the verbal predicate, as masculine dual (Corbett 1983a: 184). This example illustrates the point that resolution rules do not operate only to resolve feature clashes but also operate when conjuncts share features (singular in this example). Givón was primarily interested in gender resolution, the agreement to be used with the numerous possible combinations of the relatively large numbers of genders in Bantu languages (1970; 1972: 80–93). Others followed his lead, for example Voeltz (1971) and Roberts and Wolontis (1974). Corbett (1983a: 177–214) investigated resolution rules in Slavonic and (1983b) gave an overview of resolution rules (including person and number as well as gender); the particularly complex case of Chichewa is analyzed in Corbett and Mtenje (1987). Gender resolution, particularly the Xhosa data analyzed by Voeltz, is one of the crucial cases of resolution apparently based on phonology, considered by Pullum and Zwicky (1986).

Number resolution has attracted less attention; the form to be employed appears obvious. Indeed, it is often assumed that the plural will be used, though, as the Slovenian example just quoted shows, the dual may be required if there are two singular conjuncts. Considerably more work has been done on the conditions under which number resolution operates or fails to operate (even when conjoined noun phrases are present); although the term 'number resolution' was not used, traditional grammarians were sometimes perplexed by examples in which conjoined noun phrases do not produce plural agreement. These problems were taken up by Morgan (1972). More recently, the problems of incorporating resolution into linguistic theory have been addressed, particularly within the framework of generalized phrase-structure grammar (Farkas and Ojeda 1983; Morgan 1984; Sag et al. 1985: 152–155). While most concentrate on *and* conjunction, the problem of agreement with disjunctively conjoined subjects in English is tackled by Peterson (1986).

Leaving aside the details of particular sets of rules, we may list certain general expectations about the operation of resolution rules. Where an agreement controller consists of conjoined noun phrases it may well be possible for agreement to be with all the conjuncts — this means that the resolution rules operate. Resolution rules are motivated at least in part by semantics. This can be seen particularly clearly in the case of number

resolution. If, as in Slovenian, we have singular, dual, and plural, we find that resolution with two singular conjuncts gives a dual, and all other combinations take the plural. We do not find rules of the type, dual plus dual is resolved as singular, or singular plus plural is resolved as dual.

There is often an alternative agreement possibility; that is to say, agreement is with not all of the conjuncts — resolution does not apply. These examples are sometimes difficult to elicit from informants since they appear illogical, but in some languages they occur frequently both in texts and in natural speech. Where agreement is with not all conjuncts it will be with just one, normally with the nearest but occasionally with the first (Corbett 1983b: 180). It should also be pointed out that languages may have constraints of varying severity on the types of noun phrase which may be conjoined. There are difficulties over conjoining noun phrases headed by nouns denoting humans with noun phrases of other types both in Dravidian languages and in Bantu; a different construction, such as the comitative, is preferred.

Let us return to the question of resolution or nonresolution. Nonresolution is a case of syntactic agreement, while resolution represents semantic agreement (more accurately, agreement with a higher degree of semantic justification). Given this, it follows that the application of resolution rules is constrained by the usual factors which influence the choice of alternative agreement forms. The two major factors as far as the agreement controller is concerned are animacy and precedence. Controllers which are animate and controllers which precede the target are more likely to take semantic agreement than are others. There is considerable evidence to support these claims for semantic agreement of different types. As far as number resolution is concerned, the data on predicate agreement in Table 1 illustrate the point. Data on Spanish (13th–15th centuries) have been derived from England (1976: 813–820); statistics on German are calculated from figures in Findreng (1976: 145, 165–166, 197); the Russian data are taken from modern literary texts (1930–1979); for details see Corbett (1983a: 105–135). The Serbo-Croat data are also from modern literary texts (Corbett 1983a: 139–140). In each category we give the total number of examples and the percentage in which number resolution was found. For example, in the Medieval Spanish corpus there were 288 examples of conjoined noun phrases which denoted animates and which preceded the predicate; of these 96% had a plural predicate (thus number resolution occurred in 96% of the cases in this category). It is evident that both factors favor resolution. When both are present, all four languages give overwhelming preference to the resolved form (the plural). When either one is present, the resolved form is found in a significantly higher proportion of the cases than when neither is present.

Table 1. Predicate agreement with conjoined noun phrases

	Animate N	% plural	Inanimate N	% plural
Subject-predicate				
Medieval Spanish	288	96	243	31
German	1095	96	1702	67
Russian	115	100	67	85
Serbo-Croat	21	100	35	91
Predicate-subject				
Medieval Spanish	318	69	239	6
German	379	93	925	40
Russian	89	84	114	28
Serbo-Croat	23	70	62	26

In Medieval Spanish and in German the animacy of the subject exerts a stronger influence than its position, while in Russian the two factors are of about equal weight, and in Serbo-Croat precedence appears to be the more important factor.

While the influence of the two major controller factors is well established, there is evidence for other factors linked to them. In the case of precedence, it is not only the case that preceding controllers are more likely to take semantic agreement, but also that the greater the distance (measured in words) by which they precede the target, the greater the likelihood of semantic agreement. Moreover, animacy should be subdivided. There is evidence in the German and Spanish sources just quoted for a hierarchy as follows:

animate > concrete > abstract

Noun phrases headed by nouns denoting concrete objects were found more likely to take semantic (plural) agreement than those with head nouns denoting abstracts. Two other factors interrelate with this hierarchy:

separate > nonseparate

active > nonactive

If the referents of two noun phrases are considered separate, this increases the chances of semantic agreement; this factor links to animacy in that animates such as *Bill* and *Fred* are more likely to be perceived as separate than are abstracts like *joy* and *happiness*. However, expressions like *son and heir*, which have a single referent, take singular (nonresolved) forms. Similarly, controllers viewed as active (say involved in an activity rather

than being in a particular state) are more likely to take semantic agreement. Equally, animates are more likely to be 'active' than are inanimates (see Corbett 1983a: 120–121 for data).

These factors all involve the controller. As far as the target is concerned, the distribution of the agreement options is constrained by the hierarchy of targets called the agreement hierarchy. It consists of the following positions:

attributive < predicate < relative pronoun < personal pronoun

The claim made is as follows:

For any controller that permits alternative agreement forms, as we move rightward along the agreement hierarchy, the likelihood of agreement forms with greater semantic justification will increase monotonically.

Data to support this claim are presented in Corbett (1979; 1983a: 20–41, 157–176, 209–211); a discussion of the status of such hierarchies can be found in Corbett (1983a: 60–75).

To summarize,

1. agreement may be with all conjuncts or just one;
2. if agreement is with all conjuncts, that is, if resolution operates, number resolution will produce forms which are semantically justified;
3. if agreement is with just one conjunct, this will normally be the nearest, though there may be additional possibilities;
4. the choice between agreement with all conjuncts (resolution) or with just one will be influenced by both controller factors (for example, animacy, word order) and target factors (for example, attributive modifier versus predicate verb). In particular languages, certain combinations of factors may determine the form to be selected absolutely, thus eliminating the choice.

With these general expectations in mind we now turn to the Qafar data.

2. Gender and number in Qafar

Qafar is an East Cushitic language, spoken by approximately 250,000 speakers in northeastern Ethiopia and in Djibouti. Descriptions have been provided by Bliese (1976; 1981) and Parker and Hayward (1985), but since these authors were concerned to give a general account they could devote only limited space to the question of resolution rules. As in other Cushitic languages, the relation between gender and number is by no means straightforward (compare Corbett and Hayward 1987). The third-person pronouns are given in Table 2.¹ These pronouns must have

Table 2. *Third-person pronouns in Qafar*

	Absolutive	Nominative
Masculine	kàa	ùsuk
Feminine	tet	is
Plural	ken	òson

[+ human] antecedents. It is just possible for them to have nouns denoting animals as their antecedents, but only if some (personal) name has been conferred upon the animal — it is relatively common for the Qafar to name their cattle. These gender-sensitive pronouns are not normally used anaphorically in the case of inanimates (or unnamed animals). In such cases gender-neutral pronouns (homophonous with one or other of the deictic pronouns) are used.

The only other target which shows gender and number is the verbal predicate. Since there is no restriction to agreement with human antecedents, we shall concentrate on verb agreement in what follows. There are two main conjugations of verbs distinguished inter alia by the form and position of the subject-agreement markers; thus, the nonemphatic perfect forms of *-emeet-* 'come' and *fak-* 'open' are as in Table 3. These verbal forms allow us to divide nouns into two classes: those which take *yemeete*, *fake*, and similar forms when singular, and those which take *temeete*, *fakte*, and similar forms when singular. There is considerable semantic justification for giving these two classes the traditional labels 'masculine gender' and 'feminine gender', since nouns denoting males are typically in the first gender and those denoting females in the second. There is also a strong correlation between phonology and gender: basically, nouns the citation forms of which end in a vowel bearing high tone are feminine, while others are masculine. For sex-differentiable nouns these two factors overlap to a remarkable extent: thus nouns which denote males will almost always also have a phonological shape appropriate for the masculine gender. The surprising thing, however, is that the head of

Table 3. *Perfect tense forms*

	Conjugation 1	Conjugation 2
Masculine	yemeete	fake
Feminine	temeete	fakte
Plural	yemeeten	faken

Table 4. Agreement markers in Qafar

	Singular	Plural 1 (for agreement with nouns)	Plural 2 (for agreement with <i>ðson</i> , etc.)
Masculine	y/ø	t	y/ø - n
Feminine	t		

almost every simple (that is, neither conjoined nor quantified) noun phrase in subject position controls either masculine singular or feminine singular agreement. The only simple noun phrases requiring third plural agreement are *ðson* 'they', *màra* 'people', *ùrru* 'children', and *agàbu* 'women'. The last three are collectives and show distributional peculiarities; it is possible that they are moving toward becoming pronominal forms.

Nouns form their plurals in a variety of ways (see Parker and Hayward 1985: 229–231). One very common method is with the suffix *-itte*. The great majority of plural nouns (plural semantically and morphologically) have a phonological form which would be appropriate for feminine gender if singular, and in fact they actually do take feminine agreement. Thus the form labeled 'feminine' in Table 3 is also a marker of plurality. If we separate this function from its role as a singular marker, then the functions of the available agreement forms may be summarized as in Table 4. Of course, the fact remains that the form for plural 1 and that for the feminine singular are identical. Syncretism of this type, unexpected at first, is widespread in Cushitic (see Serzisko 1982 for further examples). It is clear that there is no distinction of gender in the plural, and so gender resolution is not an issue in Qafar. Number resolution, on the other hand, is a potentially very interesting problem. First there is the question of the form to be used, and second, we must consider the factors which may influence whether or not resolution applies.

3. Number resolution

Consider an example in which singular pronouns² are conjoined (the conjunction *kee* 'and' cliticizes onto the first conjunct, lengthening any final vowel):

- (1) kàa-kee tèt temeete / yemeeten
he-and she came

Two agreement forms are possible: *temeete* (either feminine singular or plural 1, for agreement with plural nouns) and *yemeeten* (plural 2, for agreement with *ðson*, etc.). When the two forms are possible we shall always quote them in this order. The form *yemeeten* must result from number resolution. But the question remains as to the source of the *temeete*.

One suggestion is that it is feminine singular, representing agreement just with the nearer conjunct, which is feminine. This suggestion cannot provide a full account of the problem, as is demonstrated by the next example:

- (2) tèt-kee kàa temeete / yemeeten
she-and he came

Example (2) shows that even when the feminine singular conjunct is moved away, *temeete* is still fully acceptable. In fact, in almost all examples in which masculine and feminine nouns are conjoined, both orders were tried, but in no case could we observe any difference which depended on the relative positions of the noun phrases.

A second explanation for the possibility of using the form *temeete* in the examples above would be that it is the plural 1 form (as used with nouns). There are problems with this approach too. The form *temeete* would in such cases result from number resolution (since neither conjunct is plural). Given that *yemeeten* must definitely result from number resolution, this would mean postulating two quite separate number-resolution rules which could operate for conjuncts of the same type. (And, as we shall see, both forms are possible in a large number of instances.) While there are cases of alternative resolved forms being available for particular combinations of conjuncts, this case would be quite different. The postulation of two dissimilar number-resolution rules for many possible types of conjoined noun phrase would be highly undesirable from the theoretical point of view. A secondary point is that we would not expect to find a number-resolution rule with the feminine singular/plural 1 form as its output; the output should be semantically motivated, and so we would expect the unambiguously plural form (plural 2) to result.

We therefore offer a third explanation, namely that *temeete* in (1) and (2) and similar examples is a default form, used when agreement fails to operate. It is the feminine singular which functions as the default.

The most striking example of the use of this default form is seen in the so-called 'M-nominalization' (Parker and Hayward 1985: 287ff), formed by means of the clitic element *-m*.³ This ubiquitous item, quite meaningless in itself, can, nevertheless, be regarded as the head of a noun phrase, since the items to which it attaches cover the entire range of specifiers and

Table 5. Examples of 'M-nominalizations'

Item	Category	M-nominalization
kay him.Gen i.e. 'his' (cf. kaa 'him')	possessive determiner	kâyim him.GEN + m 'his, his thing(s)'
namma two.GEN (cf. nammay 'two')	numeral quantifier	nammam two.GEN + m 'the two, both'
awki boy.GEN (cf. awkka 'boy')	genitive NP	awkim boy.GEN + m 'that of a/the boy'
iyyin who?.GEN i.e. 'whose' (cf. iyya 'who?')	genitive NP (WH word)	iyyinim who?.GEN + m 'whose one(s)/ thing(s)?'
dat-(a) black (cf. data 'it is black')	relative clause (stative verb)	datam black + m 'the black one(s)/ thing(s)'
yoò cate (num) me helped.3MS (man) (a/the man who helped me)	relative clause (nonstative verb)	yoò cattem me helped.3MS + m '(the one[s] who helped me)'

complements found in noun phrases, as shown in Table 5.

Some of the elements that may be subject to 'M-nominalization' are, of course, themselves capable of functioning as heads of subject noun phrases, and as such, have their own gender. Thus, from the above list, *awkka* 'boy', *nammay* 'two', and *iyya* 'who?' are all masculine. Nevertheless, all 'M-nominalizations' take feminine agreement, as is manifest when they function as subjects of finite verbs, as in the following:

- (3) kâyim tiddigile / *yiddigile
him.GEN + m broke
'His (one) broke.'
- (4) awkim tayse / *yayse
boy.GEN + m is-better
'The boy's (one) is better.'
- (5) iyyinim geytinta? / *geytima
who.GEN + m is-available
'Whose (one[s]) is/are available?'
- (6) yoò cattem temeete / *yemeete⁴
me helped.3FS + m came
'The one who helped me came.'

The following examples indicate further usages of 'M-nominalizations':

- (7) gaddàli kinnim yòt celta
wealthy-man is.3S + m me-to seems.3FS
'He seems to me to be a wealthy man.'
- (8) kaa catnam nèl tingiddibeh
him help.1P + m us-on forces.3FS
'We are obliged to help him.'
- (9) yoò catam takkeh
me helps.3MS + m happens.3FS
'He might help me.'

In every case it will be noted that the final verb form is feminine. It is not obvious why this should be the case, for from the point of view of phonological correlation with gender, consonant-final nouns would be expected to have masculine gender. The explanation offered here is that the *-m* is a clitic marking a syntactic construction, rather than a lexical formative, and so the elements marked with it are assigned the default gender — which in Qafar happens to be feminine.

We must now explain why the default form should be used in sentences involving conjoined noun phrases. By comparing the forms of the pronouns in (1) and (2) with Table 2, we see that the absolutive forms are used. And this is normally true of the heads of conjoined noun phrases. Besides pronouns, masculine vowel-final nouns have a distinct nominative case form, used when they occur in subject position. This is replaced by the absolutive if they occur in conjoined structures:

- (10) woò baacoytaa-kee kây toobokoyta temeete / yemeeten
that poor-man-and his brother came

Both nouns are in the absolutive form; the nominatives would be *baacoyti* and *toobokoyti*. We claim, therefore, that only noun phrases headed by a nominative case form can control predicate agreement. Otherwise the default form, the feminine singular, will be used. (These are the possibilities for syntactic agreement; in some instances, and conjoined noun phrases are one, there is also the possibility of semantic agreement.) This claim goes some way toward explaining the unusual behavior of quantified expressions. When quantified masculine nouns stand in the nominative singular, plural 2 agreement is normal:

- (11) nammà idalti yemeeten / *temeete
two old-man.NOM came

In (11) the subject noun phrase has a nominative head and so should

control predicate agreement (thus the default form **temeete* is excluded). There is no plural noun to justify the plural 1 form **temeete*. Though less usual, third singular masculine agreement is also possible (*yumbulle* in example [12]); this shows agreement with the head noun, which is itself singular:

- (12) *sidoocà yanguli yumbulle / yumbullen / *tumbulle*
 three hyaena.NOM were-seen

The important thing is that in such instances the third singular feminine/default form is excluded.

With quantified feminine nouns the picture is different:

- (13) *nammà barra temeete / *yemeeten*
 two woman came

Barra is formally neutral as to the absolutive/nominative distinction. Here the dual role of *temeete* matches the internal contradiction of the subject noun phrase. The latter is both feminine singular (morphologically) and plural (semantically); *temeete* can also be both feminine singular and plural (plural 1). The same situation is illustrated in the following example:

- (14) *koonà gile dudda (< duud + ta) / *duudan*
 five knife are-enough

Though quantified nouns normally stand in the singular, it is also possible for them to have plural morphology. As pointed out in section 2, most such forms have the phonological shape of feminines. These too take feminine singular (= plural 1) agreement; plural 2 is again excluded:

- (15) *nammà gilelwa dudda / *duudan*
 two knives are-enough

The most fluid situation occurs with masculine nouns which do not have nominative marking (all consonant-final nouns). Here all three possibilities are found:

- (16) *nammà cakiim tan / yan / yanim*
 two doctor are ['there are two doctors']

Tan, the default form, is the favored form here. It arises because of the presence of the quantifier and the absence of nominative marking. There is a strong analogy with the behavior of feminine nouns. The masculine singular form *yan* is possible because *cakiim* is, after all, a singular masculine noun. And finally, *yanim*, the plural 2 form, is found because the quantifier shows that the phrase is semantically plural, while the noun

is masculine. The analogy here is with the masculine nouns that do have overt nominative marking.

A further illustration of the distribution of nominative marking versus default agreement is found in the third-person plural. *Òson* 'they', as previously stated, requires plural agreement. It is in fact a nominative form, its absolutive form being *ken*. When conjoined, *ken* does not require plural agreement:

- (17) *kèn-kee kèn temeete / yemeeten*
 they-and they came

**Òson-kee òson* is ungrammatical. In (17) above, the absolutive *ken* follows the normal rules for number resolution and permits both the default form and the plural. But *òson* on its own, being nominative, excludes the default and, being semantically plural, takes plural 2 agreement. These data show clearly the importance of nominative marking and confirm the analysis of the feminine singular as the default form.

Returning to conjoined noun phrases, we saw earlier that two agreement forms occur, as illustrated in (18):

- (18) *yì qammii-kee kày baxa temeete / yemeeten*
 my uncle.M-and his son.M came

The straightforward forms are those like *yemeeten* (plural 2), which result from the operation of the number-resolution rules and represent semantic agreement. The forms like *temeete* are feminine singular, representing default agreement. There are two plausible ways in which to account for the appearance of this default agreement. The first is to claim that the structure as a whole lacks the required agreement features, not being headed by nominatives, and so the default form results. The alternative is to claim that it arises from agreement with the nearer conjunct which, being in the absolutive does not have the features required to determine an agreement form, and so the default form results.

The second alternative (failure of agreement with the nearer conjunct) would be the preferred analysis, since it represents a lesser claim; it suggests that Qafar is basically similar to the other languages where agreement with conjoined noun phrases has been analyzed in detail. There is a little internal evidence in favor of this second view. Interestingly, the data contain some instances where the second conjunct, never the first, stands in the nominative rather than the absolutive form. This may be substandard and has certainly not been reported in any of the previous literature. For example,

- (19) lubàk-kee yanguli yumbulle / yumbullen / *tumbulle
 (a) lion-and (a) hyena.NOM were-seen

Yanguli 'hyena' is nominative. While the absolutive would be more usual, the important point is that when nominative marking is present it excludes the default-agreement form (the feminine singular). *Yumbulle* is possible (though it is less favored), because the immediately preceding noun is nominative singular masculine. (Note that nominative marking occurs only on singular nouns.) The alternative, the plural form *yumbullen*, as expected, shows the effect of number resolution.

When the nearer conjunct is feminine, then a new problem arises. Feminine nouns do not formally distinguish nominative and absolutive; thus *xaylo* in (20) could be analyzed as being in either case:

- (20) woò idaltoo-kee tèt xaylo temeete / yemeeten
 that old-woman.F-and her offspring.F came

It appears simpler for syntactic reasons to say that *xaylo* is absolutive. But under either analysis, agreement with it as the nearer conjunct will result in the same form *temeete*, which is in turn both the feminine singular and the default form. As mentioned earlier syncretism is widespread in Cushitic. We conclude that in Qafar we find another example of a common pattern: agreement may be with all conjuncts or just the nearest. What is unusual is that the nearest conjunct may fail to determine agreement, so that the default form occurs. This is definitely true of masculines; whether or not it is true of feminines cannot be unambiguously established. The default form arises because there is no noun phrase with a nominative head, and so the subject noun phrases do not control syntactic predicate agreement. The alternative forms are those like *yemeeten*; these result from the operation of the number-resolution rules and represent semantic agreement.

4. Factors which influence the operation of number resolution

We must now consider the factors which favor one or other agreement form, in other words, the factors which make the operation of number resolution more likely. Qafar is an SOV language, though OSV is a possible order. Thus the verb is normally final and so there is no question of the position of the subject relative to the predicate playing a role. We therefore concentrate on the influence of animacy. We consider first conjuncts headed by nouns denoting humans (section 4.1), then other animates (section 4.2), inanimates (section 4.3), and mixed examples (section 4.4). Finally we examine the effect of the target (section 4.5).

4.1. Conjuncts denoting humans

When all conjuncts denote humans, both feminine singular (default) and plural 2 agreements (henceforth 'plural' agreements) are normally possible, as also in (18) and (20) above:

- (21) woò baacoytaa-kee kày barra temeete / yemeeten
 that poor-man.M-and his wife.F came
 (22) woò idaltoo-kee tèt toobokoyta temeete / yemeeten
 that old-woman.F-and her brother.M came
 (23) woò baacoytaa-kee kày toobokoytaa-kee toobokoyti
 that poor-man.M-and his brother.M-and (his) brother's
 xaylo temeete / yemeeten
 offspring.F came

An exception occurs in the case of proper personal names. Here it does not seem possible to have plural agreement when conjoining two or more female names:

- (24) Kaadiigaa-kee Faatumà temeete / *yemeeten
 Kaadiigaa-and Faatuma came [both are women's names]

The restriction is to female names, as the next example proves:

- (25) Macàmmad-kee Càsna temeete / yemeeten
 Mohammed-and Casna came [both are men's names]

It may be that the particularly clear combination of feminine phonological forms with the semantic feminine feature requires an agreement form which can be interpreted as feminine. This difference in the masculine and feminine is to be compared with that in quantified expressions discussed earlier.

The examples in this section show that Qafar readily accepts the failure of number resolution to apply when noun phrases denote humans (and precede the predicate, as in normal Qafar word order). This is strikingly different from the situation in the Indo-European languages for which data was given in Table 1. The explanation may be that *kee* 'and' takes a rising intonation, which is tantamount to a pause break (see Parker and Hayward 1985: 224, 291). This separation of the conjuncts makes agreement just with the nearest conjunct more likely in Qafar than in the other languages investigated.

4.2. *Nonhuman animates*

With noun phrases headed by nonhuman animates there was generally a degree of uncertainty about the acceptability of plural agreement:

- (26) illii-kee reytà rabte / ?raben
(the) sheep.M-and (the) she-goat.F died
- (27) wákrii-kee yangùla kudde (< kud + t + e) / ?kuden
(the) jackal.M-and (the) hyena.M ran-away
- (28) reytaà-kee saga kudde / ?kuden
(the) she-goat.F-and (the) cow.F ran-away

In these examples the subject is nonactive ([26]) or can be interpreted as nonseparate ([27] and [28]). However, given reciprocal action, which forces separate and active interpretation of the noun phrases, then plural agreement is fully acceptable (see also examples in Morin 1977: 365):

- (29) dummùytaa-kee dorrahiytà yoomen / toome
(the) male-cat.M-and (the) hen.F fought

Thus, nonhuman animates in Qafar are treated as 'less animate' than humans, and number resolution is less likely. However, if there are sufficient supporting factors ([+ active], [+ separate]) then resolution will be fully acceptable.

4.3. *Inanimates*

Here feminine singular (default) agreement is the norm:

- (30) daròò-kee cadò tummurrūqe / *yummurrūqen
(the) grain.F-and meat.F have-finished ['run out']
- (31) qàrii-kee sarò cararte / *cararen
(the) house.M-and (the) clothing.F were-burned
- (32) dalkaa-kee biyàk baaxò tìbbixe / *yìbbixen
plague.F-and disease.M land seized
'Plague and disease seized the land.'
- (33) qàrii-kee gita bayte / ?bayen
(the) house.M-and road.M have-been-destroyed

The fact that the plural was not excluded in (33) is surprising; it is possible that the presence of two masculine conjuncts is significant. But the data do not justify any firm conclusion. In the next examples the plural, though still the less-favored alternative, is better than it is with most of the preceding examples in this section:

- (34) yì gabaa-kee yì'nti biyaakitta / ?biyaakitan
my hand.F-and my-eye.F are-sick
- (35) yòk ibaa-kee sàñ biyaakitta / ?biyaakitan
my foot.M-and nose.M are-sick

In (34) and (35) the noun phrases are more clearly separate than in the earlier cases. Reciprocal action, which forces separate and active interpretation, makes the plural possible and even preferred:

- (36) ibaa-kee gabà siitat tintixibbixe / yintixibbixen
foot.M-andhand.F each-other got-stuck
'The foot and hand got stuck together.'
- (37) leè-kee gira siita baysite / baysen
(the) wàter.F-and (the) fire.M each-other destroyed

We conclude that when all conjuncts denote inanimates then resolution is the less-likely option; it can, however, be made possible by secondary factors linked to animacy ([+ separate], [+ active]).

It is also worth mentioning that when conjuncts are explicitly marked as plurals, they do not behave differently from when they are not so marked. Thus, when animates are involved both agreements occur. When just inanimates are concerned, the preferred form is the feminine singular/default, for example,

- (38) lubakwaà-kee yangulwà tumbulle / yumbullen
lion.P-and hyena.P appeared
'Lions and hyenas appeared.'
- (39) buxaaxii-kee baaxooxà tuqunxeh / *yuqunxeenih
house.P-and land.P diminished
'Houses and lands have diminished.'

Similarly when quantified noun phrases are conjoined:

- (40) yì namma baxaa-kee Macammàd namma baxa
my two son-and Mohammed's two daughter
siital digibte / digben
each-other married
'My two sons and Mohammed's two daughters got married.'
- (41) sixooçà saar-kee nammà ayni garqinte / ?garqimen
three water-skin-and two milk-pot were-stolen

4.4. *Mixed categories*

There was a certain amount of variability with these sentences, probably because the conjoining of mixed categories is unusual. If conjuncts are

mixed, the presence of one conjunct denoting a human is sufficient to make plural agreement possible:

- (42) barraà-kee sarò bayte / bayen
(the) woman.F-and (the) clothing.F were-destroyed
- (43) barraà-kee sagà bayte / bayen
(the) woman.F-and (the) cow.F got-lost
- (44) nùm-kee qàri cararte / cararen
(the) man.M-and (the) house.M were-burned
- (45) barraà-kee qàri bayte / bayen
(the) woman.F-and (the) house.M were-destroyed

And even with animate and inanimate, the plural was not completely excluded:

- (46) baaxoò-kee làa bakaaritte / ?bakaariten
(the) land.F-and (the) cattle.M were-in-drought

Even in these less-usual cases the effect of animacy is still apparent.

4.5. *The effect of the target*

As explained earlier, we have concentrated on predicate agreement, since the greatest number of possibilities is found here. The other agreement target which shows number distinctions is the personal pronoun. *òson* 'they' is used primarily for reference to persons. In reference to conjoined noun phrases denoting humans, only *òson* is possible:

- (47) yi inaa-kee yi toobokoyta ... òson
my mother-and my sister they

The feminine singular/default *is* 'she' could not refer to both conjuncts. Thus number resolution is obligatory in the personal pronoun, unlike the situation found in the predicate. This is in accord with the constraint of the agreement hierarchy (section 1) that semantic agreement must be at least as likely in the personal pronoun as in the predicate. For nonhuman antecedents, demonstratives (which do not differentiate singular and plural) are more natural. But if a personal pronoun is used, then it will be plural if its antecedent consists of conjoined noun phrases. No singular form could be elicited. Thus though the number of agreeing targets is restricted in Qafar, the distribution of syntactic and semantic agreement shows a pattern sanctioned by the agreement hierarchy.

Conclusion

We have extended work on resolution rules by examining a language in which the categories of gender and number are not at all straightforward. To some extent, the results fulfil the expectations presented in section 1. Noun phrases headed by nouns denoting animates are more likely to take resolved forms than are those denoting inanimates; the factors of 'separateness' and 'activity' also play a role. We found clear evidence for a distinction between 'human' and 'other animate'. While this distinction is well known as a feature determining the form specified by gender-resolution rules (for example in Bantu; Givón 1970), there was previously less clear evidence for its role in triggering the operation of number resolution. We cannot match the wealth of statistical data which is available for certain Indo-European languages, since our data come from informant sessions with a single native speaker. Nevertheless, we have sufficient evidence to suggest that the same types of factor are at work in Qafar. A difference, however, is that in Qafar female personal names behave differently from other noun phrases with female human referents. But the most interesting feature of resolution in Qafar is that besides number resolution (the resolved form being the plural, which is semantically justified) we also find default agreement. This is analogous to agreement with the nearest conjunct, since conjoined noun phrases stand in the absolutive case, which lacks the required agreement feature, and so the default form (the feminine singular) results.

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School of Oriental and African Studies,

London

University of Surrey

Notes

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- 1. Qafar examples cited throughout this paper make use of an orthography originally proposed for the language by the native Qafar grammarians Dimis and Reedo (1976). This orthography has gained wide acceptance and is employed in the recently published *Afar-English-French Dictionary* (Parker and Hayward 1985). The representation of only

three of the phonemes requires any explanation, thus, orthographic *c*, *q* and *x* represent phonemes the principle allophones of which are IPA [h], [ʃ], and [d] respectively; all other phonemes are represented orthographically by letters of the Roman alphabet that are employed in a completely conventional way. Both consonant and vowel length are phonological and are indicated orthographically by means of double letters.

Qafar is a tonal accent language, and, when uttered in isolation, many pairs of nouns may be distinguished only by the location of the high tone. There is one, but only one, occurrence of high tone per phonological phrase, and this is associated with the first (leftmost) accented vowel mora in the first word in the phrase; in the absence of an accented mora, the high tone will be associated with the final vowel mora of the first word. The conventions for marking tone in this paper follow those used in the dictionary referred to above (Parker and Hayward 1985: 11, 219–222). They are as follows:

(i) *For words cited in isolation*

High tone (shown by means of a grave accent diacritic) is indicated only in accented words. Since in unaccented words high tone can occur only on the final vowel, it is not marked. For example,

àwka [ˈ] 'boy' awka [] 'girl'

(ii) *For phrases and sentences*

In syntactic strings each and every occurrence of a high tone is marked, whether it is associated with an accented vowel or not.

In glosses we employ the following abbreviations: NOM — nominative; GEN — genitive; 1, 2, 3, — first, second, third persons; S — singular; P — plural; M — masculine; F — feminine. A translation is added only when the gloss is not transparent.

2. Person resolution in Qafar is unexceptional. If a first-person conjunct is included, then verb agreement is first person (plural):

(i) yoð-kee koð nemeete
I-and you.S came.1P

Failing that, the presence of a second-person conjunct guarantees second person (plural):

(ii) kaa-kee sin toomen
he-and you.P quarrelled.2P

In the absence of both first and second persons, the third person is found. What is interesting is that the plural is not obligatory, as is discussed in the body of the paper.

3. Besides the 'M-nominalization' forms, which span a wide range of functions, Qafar also has derived nominal forms, each of which tends to have a range of functions complementary to those of the others. In common with all other nominals each verbal noun has gender. The very strong correlation between gender and phonological shape was noted above, and verbal nouns are no exception to this. Consider the derivatives of *baah*- 'bring' (a typical nonstative verb), *kaxx-(a)* 'be big', *igm-(a)* 'be ignorant', *xeer-(i)* 'be tall/long' (all three of which are typical stative verbs) in Table I.
4. In this example the relative-clause verb itself also has feminine agreement (that is, *catem* feminine, not **catem* masculine). This is because it is a case of subject relativization. Naturally, in cases where the antecedent of the relative-clause head has some other function, such agreement forms will not necessarily be found, since the gender of the relative-clause subject will control the agreement:

Table I. *Other nominal forms derived from verbs*

Verb stem	Nominalizing suffix	Relevant properties of phonological shape	Gender
baah-	-iyya	vowel-final and penultimate high tone	masculine
kaxx-(a)	-iina	vowel-final and ultimate high tone	feminine
igm-(a)	-aane	vowel-final and ultimate high tone	feminine
xeer-(i)	-inaan	consonant-final	masculine

(i) ùsuk catem yoð
he helped + m me
'(The one) whom he helped (was) me.'

In (i) *catem* is masculine because the subject is *ùsuk* 'he'.

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