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ANIMACY HIERARCHY EFFECTS ON OBJECT AGREEMENT

Ellen Woolford

University of Massachusetts
<http://people.umass.edu/ellenw/>

Languages with true object agreement (grammatical, rather than anaphoric agreement in Bresnan and Mchombo's 1987 terms) often restrict agreement to objects with certain features. It is well-known that objects whose features are high on one of the animacy/topicality hierarchies (e.g. human, specific, first person, etc.) are more likely to trigger agreement (Comrie 1981, Croft 1988, 1990, Bentley 1994). Yet, this generalization has not been easy to capture within formal syntactic theories because the actual conditions on object agreement differ so considerably from language to language. As a result, conditions on object agreement have generally been treated as idiosyncratic language-specific grammatical information, unrelated to universal linguistic principles. The goal of this paper is to present a theory of conditions on object agreement that captures the universal aspects of this phenomenon, minimizing the language-particular information that must be stipulated in grammars and correctly predicting the range of typological variation that occurs.

This paper examines the particular conditions on object agreement in four African languages (Ruwund, KiRimi, Maasai, and Swahili) and shows how these conditions can be accounted for within a slightly augmented version of the formal theory of agreement described in Chomsky 1992. That approach to agreement is structural. That is, object agreement is possible only when an object moves out of the VP to the object agreement position, Spec Agr-O. While Chomsky suggests that all structurally Cased objects move to Spec Agr-O, it is argued here (as in Woolford 1995) that what is special about languages that manifest conditions on object agreement is that not all objects move; instead, only objects with certain features move.

The reason that objects with certain features are forced to move out of the VP is that there are restrictions on what features VP-internal objects can have (just as there are restrictions in phonology on what features coda consonants can have (see Selkirk 1984, Clements 1992)). Diesing 1992 argues that [+ specific] objects are incompatible with VP-internal positions and thus specific objects must move out of the VP. Woolford 1995 shows that there are also animacy and number restrictions on the VP-internal object position. In this paper, we will see these restrictions plus ones involving person, focus, and thematic role. As the typological literature cited above suggests, we find restrictions on object agreement involving all of the features that are high on the various animacy/topicality hierarchies.

The proposed syntactic principles that restrict the features that VP-internal objects can have are called *exclusion principles* (Woolford 1995). Using Optimality Theory (Prince and Smolensky 1993), it is possible to treat exclusion principles as part of universal grammar, even though they appear to hold only in certain languages. The effect of a particular exclusion principle can be masked if it conflicts with more highly ranked principles. Exclusion principles, which force objects to move out of the VP, conflict with the economy principle, Avoid Movement (Chomsky 1992), which keeps objects from moving. The restrictions on object agreement that appear in a particular language are those that are the result of exclusion principles which outrank Avoid Movement.

Several additional generalizations concerning object agreement follow under this Exclusion Principles approach. First, languages often have disjoint sets of features associated with object agreement. This is because more than one exclusion principle can be active in a single language. Second, it is far more common in the languages of the world to find restrictions on object agreement than on subject agreement. Under the view taken here, restrictions on object agreement indicate that some objects remain in the VP instead of moving to the object agreement position. Since all subjects are generally forced to move to the subject agreement position, all subjects generally agree regardless of what features they have. Finally, the fact that only one object per clause can trigger true object agreement follows from the availability of only one Spec Agr-O (object agreement position) per clause.

This paper begins by examining the conditions on object agreement in the Bantu language Ruwund. Preparatory to developing a formal account of the Ruwund conditions, the theory of object agreement of Chomsky 1992 is outlined in section 2. Two standard approaches to formulating conditions on object agreement in that theory are shown to fail for Ruwund. The Exclusion Principles approach is described in section 3 and the proposed analysis of Ruwund is presented in section 4. Patterns of object agreement in three other African languages are surveyed in section 5 and the match between the cross-linguistic variation in object agreement patterns and the typological predictions of this approach is discussed in section 6.

1. Conditions on Object Agreement in Ruwund (Bantu - Zaire and Angola)

Objects agree in Ruwund if and only if they have any one of the following four sets of features (Nash 1992, Woolford 1996): *animate and specific*, *animate and benefactive/malefactive*, *animate and goal*, or *focused and specific*. The example in (1a) shows that animacy alone is insufficient for agreement; but an animate object that is specific agrees, as in (1b). The example in (2) shows that the relevant feature is [+animate], rather than [+human], since a non-human animate specific object also agrees.

- (1)a. ku+ kimb muntu
 INF+ look-for person
 to look for a [any] person (Nash 1992, p. 565)

- b. ku+ **mu**+ kimb muntu
 INF+ OAGR+ look-for person
 to look for a/the person (speaker has a particular person in mind)
- (2)a. ku+ kàt atûbu
 INF+ like dogs
 to like dogs [in general] (Nash 1992, p. 565)
- b. ku+ **yi**+ kàt atûbu
 INF+ OAGR+ like dogs
 to like the dogs (speaker has some particular dogs in mind)

The example in (3a) shows that specificity alone is not sufficient to trigger agreement. However, a specific object that is also focused agrees, even if it is not animate, as in (3b):

- (3)a. ku+ land malong
 INF+ buy plates
 to buy some/the plates (Nash 1992, p. 565)
- b. ku+ **ma**+ land malong
 INF+ OAGR+ buy plates
 to buy *the plates*

Moreover specificity is not even necessary for objects that are benefactives and goals. Animacy is sufficient for agreement when those thematic roles are involved:

- (4) ku+ **mu**+ fi+ il mwâan
 INF+ OAGR+ die+ APPL child
 to die for a/the child (Nash 1992, p. 961)
- (5) ku+ **mu**+ ti+ il muntu mupit
 INF+ OAGR+ set+ APPL person trap
 to set a trap for a [any or particular] person (Nash 1992, p. 565)

For reasons of space, the reader is referred to Nash 1992 and Woolford 1996 for additional Ruwund data. In the next section, we review the theory of agreement of Chomsky 1992 upon which the account of Ruwund will be based.

2. The Theory of Agreement of Chomsky 1992

In the structural theory of object agreement in Chomsky 1992, agreement can occur if an object moves out of the VP to the object agreement position, Spec Agr-O. Objects that remain inside the VP do not agree.

- (6) Subject Agr-S Object(agreeing) Agr-O [_{VP} V Object(non-agreeing)]

In a language where all objects agree, all objects move to Spec Agr-O (perhaps

because Case is not available inside the VP). In languages with no object agreement, objects remain in the VP or the language simply lacks (overt) object agreement.

The question that interests us is how to handle languages in which only some objects agree. Without augmentation, current theory (e.g. Chomsky 1992, 1995) allows two possible approaches to this problem. The simplest approach would be one in which all objects move to Spec Agr-O, but because of gaps in the inventory of (overt) agreement morphemes, only some objects trigger overt agreement. For example, if a language lacks an overt object agreement morpheme for third person singular, then third person singular objects trigger no overt agreement. Such an approach is inadequate for Ruwund, however. To account for the lack of agreement with the nonspecific human object 'person' in (1a), one would have to claim that the object agreement morpheme that agrees with 'person' in (1b) has the feature [+ specific]. Yet, this claim is clearly false because this same agreement morpheme appears in (5) even if the object 'person' is non-specific. There is no possible feature or set of features that one could postulate that the overt agreement morphemes have in Ruwund that would correctly predict which objects agree and which do not.

A slightly more complex approach is one in which only the agreeing objects move, while the non-agreeing objects remain in the VP. Under the view of Chomsky 1995, movement can be driven by the need to check agreement features, thus the presence of an appropriate object agreement morpheme could force objects with certain features to move. However, as noted just above, the disjunctive list of features associated with object agreement in Ruwund makes it impossible to assign agreement morphemes features that would make this approach work.

The alternative approach argued for here is that there are no special features on object agreement morphemes in Ruwund (beyond person, number and noun class) and that any object that moves to Spec Agr-O will agree. Agreeing objects are not pulled out of the VP by attraction to agreement, rather they are pushed out of the VP by virtue of a feature mismatch inside the VP. Note, however, that this approach encounters the same problem as the inventory gap approaches rejected above if one simply stipulates that there are certain features associated with the Case that is assigned inside the VP, along the lines of de Hoop 1992. The reason is that there is no consistent set of features that one could postulate that the VP-internal object Case requires.

The correct approach should capture the fact established in the typological literature that agreeing objects have features that are high on one or more of the animacy/topicality hierarchies. We can capture this fact if we take an approach that is similar to the treatment of constraints on the features of coda consonants in Optimality Theory (Prince and Smolensky 1993). To capture the fact that coda consonants ideally have unmarked features, Prince and Smolensky posit a family of markedness constraints whose effect is to prohibit consonants with marked features in certain positions in the syllable. The degree to which this ideal form of the coda is realized differs considerably across languages because these markedness constraints are ranked with respect to each other and to other constraints in different ways in different languages. A coda constraint will be

'active' in a particular language if it is ranked higher than faithfulness constraints prohibiting changes in the coda. To apply this idea to syntax, we need a family of constraints that exclude objects with marked features (features that are high on the various animacy/topicality hierarchies) from VP internal object positions. Such a family of constraints is developed in Woolford 1995 and termed *exclusion principles*.

3. Exclusion Principles

Universal grammar contains a family of exclusion principles that prohibit NPs with marked features from remaining in object positions inside the VP. Exclusion principles can refer to any feature or combination of features in the animacy/topicality hierarchies listed below:¹

(7) Animacy/Topicality Hierarchies

a. specific	>	non-specific		
b. definite	>	indefinite		
c. singular	>	plural		
d. focused	>	not focused		
e. pronominal	>	non-pronominal		
f. human	>	animate	>	inanimate
g. first person	>	second person	>	third person
h. agent	>	benefactive	>	goal > theme

Exclusion principles all have the same general form, differing only in the particular features referred to:

(8) Exclude [+ feature, (+ feature)] NPs from object positions in VP.

For example, the exclusion principles that are active in the Austronesian language Palauan are given below (Woolford 1995):

(9) Exclude [+ human] NPs from object positions in VP.

Exclude [+ specific, + singular] NPs from object positions in VP.

That is, any object that is human and/or singular and specific is prohibited from remaining in its base position inside the VP in Palauan. Objects with these features trigger agreement in Palauan, because they are forced to move out of the VP and the nearest available position they can move to is Spec Agr-O, the object agreement position. As a result, human objects agree, but it is not necessary for an object to be human in order to agree. Objects that are specific and singular also agree. The same object agreement morpheme is used in both instances, and its features are limited to person and number. The fact that

¹These hierarchies provide a universal ranking for exclusion principles that refer to the features in each hierarchy. That is, an exclusion principle referring to first person objects will never be ranked below an exclusion principle referring to second person objects in a particular language.

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To demonstrate how this works, consider a situation in which the object is [+ animate, + specific], as in example (1b). The two competing derivations are listed in the tableau below. The derivation in (12a), in which the object remains inside the VP, violates the exclusion principle prohibiting [+ animate, + specific] objects from VP internal positions. Thus, the derivation in (12a) is rejected in favor of the derivation in (12b) which does not violate this exclusion principle since the object has moved out of the VP. At this point, (12b) is selected as the best derivation, because it is the only remaining derivation. Note that the lower ranked principle, Avoid Movement, never even gets a chance to apply in this situation (indicated by the shaded boxes), because the process ends as soon as the field is narrowed down to one remaining derivation.³

(12) Tableau for a [+ animate, + specific] object

Candidates	Exclude [+ animate, + specific] objects from VP	Avoid Movement
a. [VP NP (no object agreement)	*!	
☞ b. NP _i Agr-O [VP t _i (with object agreement)		*

Consider now what happens when the object is [+ animate, -specific], as in example (3b). In this situation, shown in the tableau below, neither derivation violates this or any other active exclusion principle. Both derivations are thus passed on to the next lower principle, Avoid Movement, which rejects the derivation in (13b) because it involves movement:

(13) Tableau for a [+ animate, -specific] object

Candidates	The above four exclusion principles	Avoid Movement
☞ a. [VP NP (no object agreement)		
b. NP Agr-O [VP t (with object agreement)		*!

Thus we see how the addition of exclusion principles to the theory enables it to capture the typological generalization that unmarked objects (those that do not agree) tend to have unmarked features (those low on the animacy/topicality hierarchies). We also see how making exclusion principles violable and ranked with respect to economy principles allows these principles to be present in universal grammar, yet not have an effect in all languages.

³The exclamation point next to the * indicates a fatal violation of a principle; that is, a violation that removes a candidate derivation. The ☞ indicates the winning derivation.

In the next section, we will see that this structural/movement approach to agreement receives further support from the fact that it correctly predicts an otherwise unexpected constraint on pronominalization in Ruwund.

4.1 A Supporting Argument From Pronominalization

The pattern of object pronominalization in single object constructions in Ruwund seems unremarkable. Pronominalization takes the form of a clitic suffixed to V (or in one dialect, an object marker) and it is always possible in single object constructions. The same lack of restriction is also observed for first objects in double object constructions. The unexpected constraint on pronominalization in Ruwund concerns the behavior of second objects:

- (14) In Ruwund, a second object may pronominalize only if the first object agrees or also pronominalizes. (Nash 1992).

We would not be surprised if second objects could never pronominalize; many languages manifest such an asymmetric pattern in which only the object that is adjacent to the verb can pronominalize, e.g. English, Chicheŵa (Bresnan and Moshi 1990, Baker 1988, Woolford 1993). The fact that the second object can pronominalize and that both objects can pronominalize at once should place Ruwund with the symmetrical object languages in Bresnan and Moshi's 1990 typology. However, in symmetrical object languages such as Kichaga and Kinyarwanda, the second object can freely pronominalize. Thus, Ruwund does not manifest the expected properties of either type. But, we will see that the conditions for pronominalization in Ruwund are actually identical to those of Chicheŵa. All that is required for pronominalization is for an object to be adjacent to the verb at some stage in the derivation.

Adjacency is obvious for single objects and for the first object in a double object construction. The second object in a double object construction is adjacent to the verb if the first object has pronominalized (cliticized to the verb). The interesting case is when the first object agrees. Then, the first object still intervenes between the verb and the second object in the surface word order. Nevertheless, it was proposed above that the first object moves out of the VP when it agrees. Thus, there is a stage in the derivation when V is adjacent to the second object. This occurs after the first object moves out of the VP, but before the verb moves up to its surface position to the left of the first object (Agr-S).

- (15) Intermediate derivational level in which V and NP₂ are adjacent:⁴

Agr-S NP₁ Agr-O [_{VP} V t₁ NP₂]

Thus the structural approach to agreement allows a simple account of what initially appears to be a very odd condition on pronominalization in Ruwund.

Now we have seen how the addition of violable exclusion principles to the

⁴The trace of NP₁ does not block the pronoun from cliticizing to the verb.

structural theory of agreement in Chomsky 1992 enables us to deal with even disjoint conditions on object agreement within a single language. The next step is to examine the range of cross-linguistic variation in conditions on object agreement, and then to compare these with the typological predictions of this approach.

5. Conditions on Object Agreement in Three Other African Languages

This section is a survey of the conditions on object agreement in three other African languages, KiRimi, Swahili, and Maasai.

5.1. Conditions on Object Agreement in KiRimi (Bantu - Tanzania)

According to Hualde 1989, definite animate objects trigger object agreement in KiRimi, but indefinite animate objects do not:

- (16)a. n-a-on-aa mwalimu.
I saw a teacher. (Hualde 1989 (10))
- b. n-a-**mU**-on-aa mwalimu.
OAGR
I saw the teacher. (Hualde 1989 (11))

Definite objects do not trigger agreement if they are inanimate:

- (17)a. n-a-on-aa kItabu.
I saw a/the book. (Hualde 1989 (7))
- b. *n-a-**kI**-on-aa.
OAGR
I saw the book. (Hualde 1989 (8))

This pattern suggests that only one exclusion principle is active in KiRimi:

- (18) Exclude [+ definite, + animate] NPs from object positions in VP.

This exclusion principle is ranked higher than Avoid Movement in KiRimi, forcing definite, animate objects to move out of the VP. Assuming there is nowhere else to move except to Spec Agr-O, such objects will trigger object agreement. Objects with any other features must remain in their base positions to avoid violating Avoid Movement.

5.2 Conditions on Object Agreement in Swahili

Although there appear to be dialect differences in Swahili as to the exact features associated with agreement, it is widely claimed that agreeing objects in Swahili are definite, referential, or specific. This appears to be true for animate objects; however, Allen 1983 shows that when an inanimate object co-occurs with agreement, it means that the NP is the topic or focus of the sentence. In the data reported in Wald 1979 and Allen 1983, object agreement appears to be

associated with two distinct sets of features:

- (19) Objects Agree in Swahili if they are [+ animate, + specific]

Objects Agree in Swahili if they are [+ focus].

The fact that disjoint sets of features correlate with agreement would be a problem if one assumed that the object agreement morpheme has these features (that is, that these features constitute the 'meaning' of the agreement morphemes), but this kind of situation is not problematic under the Exclusion Principle approach. This disjoint set of features associated with object agreement simply indicates that there are two exclusion principles active in Swahili:

- (20) Exclude [+ animate, + specific] NPs from object positions in VP.

Exclude [+ focus] NPs from object positions in VP.

Objects with either set of features will be driven from the VP to Spec Agr-O, where they will trigger object agreement.

5.3. Conditions on Object Agreement in Maasai (Nilotic - Kenya, Tanzania)

Maasai is an example of a language where the active exclusion principles refer to person and number. The following agreement pattern is reported in Payne, et al. 1994:

- (21) Agreement in all Maasai Intransitive Constructions and Transitives with 1pl, 2pl, or third person objects:

Subject is 1sg:	á
Subject is 2sg/pl:	ṭ
Subject is 3sg/pl:	é
Subject is 1pl (i.e. 1&2 or 1&3) portmanteau form	kṭ

The fact that the agreement in most transitive clauses is identical to that of intransitive clauses suggests that the object does not contribute to the agreement (that the object does not agree) in most clauses. However, objects with certain features (first or second person singular) do trigger agreement:

- (22) Agreement in Maasai Transitives with a 1sg or 2sg object

Portmanteau Forms (combined influence of subject and object)

general portmanteau form: 1pl-2sg; 2-1sg; 3-2sg	kṭ
special portmanteau forms: 1sg-2sg	áá
3-1sg	áa

In an Exclusion Principle analysis of this system, first and second person singular objects move to Spec Agr-O and trigger object agreement, while all

other objects remain in the VP, not contributing to agreement. This situation will come about if there are two active exclusion principles in Maasai:⁵

(23) Exclude [+ 1st person, + singular] NPs from object positions in VP.

Exclude [+ 2nd person, + singular] NPs from object positions in VP.

Now that we have seen a selection of different exclusion principles at work in African languages, let us compare the cross-linguistic patterns that occur with the typological predictions of this approach.

6. Typology

This approach predicts the existence of exclusion principles that refer to specificity/definiteness, humanness/animacy, person, number, focus, thematic role or any combination of such features. Because not all of these features are independent (e.g. pronouns are specific and definite, first and second person are human, and first and second person are always pronominals), not all of the logically possible combinations of these features will describe empirically distinct situations. As a result, there are fewer different possible exclusion principles predicted than might first appear to be the case. Moreover, the animacy/topicality hierarchies provide some universal ranking of exclusion principles so that, for example, if a principle referring to second person is active in a language, so is the equivalent principle referring to first person. That also restricts the amount of cross-linguistic differences expected.

Many of the predicted combinations have already been found in the short list of languages already investigated. There are examples of exclusion rules referring to specificity/definiteness alone, and in combination with animacy and number.⁶

- | | |
|--------------------------------------|---------------------------|
| (24) Exclude [+ specific, + animate] | - Ruwund, Swahili |
| Exclude [+ definite, + animate] | - KiRimi |
| Exclude [+ specific, + singular] | - Palauan (Woolford 1995) |
| Exclude [+ specific] | - Turkish (Woolford 1995) |

We expect to also see exclusion principles referring to specificity/definiteness combined with number or thematic role. With respect to the combinations involving humanness or animacy, the following combinations have been documented:

⁵These two exclusion principles could be collapsed into one if there were a general feature covering first and second person.

⁶Not enough research has been done to be sure that definiteness is referred to in exclusion principles independent of specificity.

- | | |
|---|-------------------|
| (25) Exclude [+ animate, + specific] | - Swahili, Ruwund |
| Exclude [+ animate, + definite] | - KiRimi |
| Exclude [+ animate, + agent/benefactive/goal] | - Ruwund |
| Exclude [+ human] | - Palauan |

Humanness or animacy should also be seen paired with number or focus. Two examples of number in exclusion principles have been encountered so far:

- | | |
|---|-----------|
| (26) Exclude [+ singular, + 1st/2nd person] | - Maasai |
| Exclude [+ singular, + specific] | - Palauan |

Number should also be able to act alone or with humanness/animacy, thematic roles or focus. Two of the documented exclusion principles refer to focus:

- | | |
|-------------------------------|-----------|
| (27) Exclude [+ focus] | - Swahili |
| Exclude [+ focus, + specific] | - Ruwund |

Focus should also be able to combine with humanness/animacy, number, and thematic roles. We have seen one exclusion principle referring to person:

- | | |
|---|----------|
| (28) Exclude [+ 1st/2nd person, + singular] | - Maasai |
|---|----------|

Person should also act alone or with other features.

Thus we see that many of the predicted exclusion principles are already documented in just a small sample of languages. The full set of predicted combinations should surface when more languages are considered.

7. Conclusions

The goal of this paper has been to survey the range of animacy/topicality conditions on object agreement that occur in four African languages (Ruwund, KiRimi, Swahili, and Maasai), and to address the question of how to handle such conditions within the structural theory of agreement outlined in Chomsky 1992. These four languages have conditions referring to animacy, specificity/definiteness, person, number, thematic role and focus. This paper has shown that, given the fact that there are often disjoint sets of features associated with object agreement within one language, such conditions cannot be the result of features on agreement or Case morphemes which need to be checked. Instead, animacy/topicality conditions on object agreement are the result of a new family of violable principles, called exclusion principles, which restrict the features that VP-internal objects can have (paralleling the violable principles in phonology restricting the features that coda consonants can have).

Exclusion principles prohibit objects with particular features (or sets of

features) from remaining in VP-internal object positions. Exclusion principles conflict with the economy principles because exclusion principles drive objects out of the VP while economy principles (Avoid Movement) keep objects inside the VP. Following Prince and Smolensky 1993, the relative ranking of these principles determines which will be active in a particular language.

Under this approach, when only some objects agree it is because only some objects (those with certain features) move to Spec Agr-O, the object agreement position. Exclusion principles exclude objects with features on one or more of the animacy/topicality hierarchies reported in the typological literature. These hierarchies provide a universal ordering of different exclusion principles. For example, a principle referring to first person is always ranked as high or higher than a principle referring to second person. This accounts for the observed fact that objects with features high on these hierarchies are more likely to trigger object agreement than objects with features low on these hierarchies.

Several other generalizations about object agreement follow under this account. Only one object per clause can trigger object agreement because there is only one object agreement position (Spec Agr-O) per clause. Animacy restrictions are far more common on object agreement than on subject agreement because subjects are generally forced to move to the subject agreement position (Spec Agr-S) for reasons independent of their features. Finally, languages often have a diverse list of features and combinations of features associated with object agreement because more than one exclusion principle can be active in a single language.

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Department of Linguistics
University of Massachusetts
Amherst, MA 01003

woolford@linguist.umass.edu
<http://people.umass.edu/ellenw/>