Tigrinya Gender Morphology and Agreement

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Abstract: Tigrinya verbal and nominal morphology mark gender agreement according to a mixed system that may include natural gender, attributive gender, and grammatical gender. This paper will describe the distribution of natural and attributive gender features in empirical data, and speculate on the existence of grammatical gender. Morphological and syntactic models will be tested to house the necessary features in Tigrinya, and the existence of three covert noun classes will be proposed to account for the patterns of agreement.

1. Introduction

Gender in Tigrinya is marked on determiners, verbs, and may be marked on adjectives and some nouns. Examples of the first three are seen in (1).

(1) a. ʔɨzz-a rɨħrɨħti ʔabal bajto
this-F kind.F member.of.congress
'this kind congresswoman'

b. ʔɨzz-i məngədi nəwɨħ-ju
this-M road long.M-be.M.SG
'This road is long.'

The selection of the masculine or feminine agreement morpheme on a noun is subject to a variety of conditions that include sex differentiation, gender attributed by an evaluation of the noun, or a lexical gender associated with a vocabulary item by convention. The aim of this study was to determine the patterns of gender assignment according to these phenomena. The guiding hypotheses of this study were as follows:

1. All nouns that are subject to sex-differentiation should acquire masculine or feminine morphology based on the biological sex of their referent.
2. Attributions of masculine or feminine features based on size, status, or endearment should be applicable in either direction, e.g. [+size] or [-size], which should result in gender shifts from masculine to feminine, and feminine to masculine (Brindle, 2006: 391).
3. Nouns that are not evaluated based on sex differentiation or attribution have an unmarked, default gender.

There were exceptions to each of the expected patters. Hypothesis 1 did not hold for a small number of nouns. While a clear context indicating sex differentiation usually required the corresponding masculine or feminine marking, some nouns for living things continue to show feminine agreement even when the noun refers to a biological male referent.

Section V attests to the existence of nouns that appear to be immune to gender shift from attribution, despite occurring in environments that do precipitate gender shift with other nouns. This evidence refutes the universality of Hypothesis 2.

Hypothesis 3 tests the limits of noun classification based on semantic criteria. Section 3 details examples of non-sex-differentiated nouns that seem to undergo productive semantic classification, and are unable to be assigned a default form free of context.

Previous work accounted for the gender of nouns by proposing two covert noun classes (Brindle, 2006). The classes proposed by Brindle group all nouns that are assigned gender due to semantic criteria within one class, Class I, be they masculine or feminine. All nouns not evaluated by these semantic criteria are placed into another class, Class II, and assigned masculine gender. Nouns in Class I may be assigned masculine or feminine gender, with the first mechanism of assignment based on sex differentiation of living things. Those nouns that cannot be differentiated based on sex, such as inanimate objects, are then assigned masculine or feminine gender based on a secondary set of semantic criteria. This study supports the Brindle's establishment of covert classes for Tigrinya, but expands the number of classes to three. Three classes allow for Tigrinya morphology and syntax to account for the restrictions on agreement with certain nouns that challenged the stated hypotheses.

Within the family of Ethiopian Semitic languages, Kramer (2009) finds that Amharic gender assignment should be considered a system of biological gender. Grammatical gender is disappearing for modern speakers. This study finds a similar trend in Tigrinya.

Section 2 outlines the ways that gender features are expressed in phonological form on adjectives, nouns, verbs, and determiners. Sections 3 and 4 present the patterns of gender marking on natural, grammatical, and attributed gender features. Section 5 details the three noun classes proposed. The location of gender features in the derivation, as well as selection rules, are argued for in Section 6.

2. Gender Morphology

Some nouns and adjectives have alternate phonological forms marking masculine and feminine gender features, as in the adjectives (2a-c).

(2)	a.	kɨfɨʔɨti	kɨfuʔ
		ugly.F,	ugly.M
	b.	gədʒaf	gədʒif
		big.F,	big.M
	c.	rɨħrɨħti	ruħruħ
		kind.F	kind.M

There are several different morphemes in these examples that encode gender on each adjective. (2a) shows the addition of the previously mentioned suffix /-t/ with /i/, in addition to

alternation in the vocalic melody tier. /u/ represents [masculine] in the vocalic melody tier of (c) as well, but not in the other two examples. In (2b), the feminine form is distinguished by /a/ as the final vowel, while the masculine form vowel is inconsistent. The feminine /-t/ suffix is not present in example (2b).

Conversely, the adjectives in (3) do not show any overt gender. These appear in the same form when they agree with masculine or feminine nouns or pronouns.

(3) a. ħanti niʔiʃtəj tʃʾiru
one.F little bird
'one little bird'

b. ʔizz-i gobo niʔiʃtəj-ju
this-M mountain little-be.3.M.S
'This mountain is little.'

c. ləbam di-ja/di-ju
wise Q-be.3.F.S/Q-be.3.M.S
'Is she/he wise?'

d. ʔarəgit səbəjti/səbʔaj
old woman/man
'old woman/man'

Determiners and verbs show agreement with the gender and number of the noun they agree with in the form of a suffix. Verbs show gender agreement with their subject and with definite indirect objects. Gender and number appear on the same suffix for determiner agreement, and also share a suffix for subject and object agreement on verbs. Plural on nouns and adjectives is realized as a suffix separate from gender, or as a mixed irregular plural.

The only phonological evidence for feminine marking on nouns is the Semitic suffix /-t/, which is seen in certain derivations, as in Table 1. The verbal root that forms these nominals is represented on the consonantal tier by the roots /gtm/ for 'rhyme,' /ħnbs/ for 'swim', and /brr/ for 'dart,' or 'fly'. The derivations in Table 1 have a CV(C)CaCi skeletal structure, and feminine is represented by the suffix /-t/. The only distinctive morpheme for masculine among these examples is the vowel /a/ in (b), [ħanbasaj].

Table 1:

Root	a) /gtm/ 'rhyme'	b) /ħnbs/ 'swim'	c) /brr/ 'dart'
Feminine Derived Noun	gət'amit poet.F	ħanbasit swimmer.F	ʔabrarit nəfarit pilot.F flyer.F *'female airplane pilot'*
Masculine Derived Noun	gət'ami poet.M	ħanbasaj swimmer.M	ʔabrari nəfarit pilot.M flyer.F *'male airplane pilot'*

Other nouns do not show any overt masculine or feminine marking. (4) shows that the gender feature of the nouns *donkey foal* and *doctor* are only realized via concordance with the adjectives as in (4a), or agreement with the copular verb in both (4a) and (4b).

(4) a. ʔɨzz-a ʔanəstəjti ʕilu ʔɨj-a
this-F female donkey foal be-3.F.SG
ʔɨzz-i kəʔa təbaʕtaj ʕilu-j-u
this-M and male donkey.foal-be-3.M.SG
'*This is a female donkey foal, and this is a male donkey foal.'*

b. nɨfiʕiti ħakim
good.F doctor
'a good female doctor'

c. nɨfuʕ ħakim
good.M doctor
'a good male doctor'

As in English, there are some names specifically for female or male animals: *waʕɨro* 'lioness' and *ʔanbəsa* 'lion', and *t'el* 'goat' and *dɨbela* 'billy goat.' For a large number of animals, including goat, the same noun can be used and will agree with the gender of the referent. This is not unlike the English equivalent, 'goat', or 'pig,' which can refer to either a male pig or a sow.

(5) a. ħanti t'el
one.F goat
'one (female) goat'

b. ħadə dɨbela
one.M billy goat
'one male goat'

c. ħadə t'el
one.M goat
'one male goat'

3. Natural gender and Grammatical Gender

In order to understand the patterns of gender assignment in Tigrinya, nouns were elicited in a range of environments. Part of these elicitations had the aim of determining whether nouns had a default gender that appeared free of contextual conditions. Given preliminary data collected, and Brindle's analysis of noun classes (2006), the contexts that condition gender were assumed to be distinguished by semantic features.

The classification of epicene nouns, such as *ʔabal bajto* 'member of congress' from (1a) and (6), is entirely based on sex-differentiation. Epicene nouns are those that can be used alternatively for masculine and feminine referents. The same is true for *ħakim* 'doctor,' and *ʕilu* 'donkey foal' from (4), and *t'el* 'goat' from (5c).

(6) a. ʔɨzz-a riħriɦti ʔabal bajto
this-F kind.F member of congress
this kind congresswoman

b. ʔɨzz-i ruħruħ ʔabal bajto
this-M kind.M member of congress
'this kind congressman'

We asked our consultant whether the feminine or masculine determiner sounded more appropriate with certain nouns. This was done in order to determine a context-free gender feature that might originate with the noun. Speakers have some intuition that certain nouns, when elicited without context, have a preferred gender, such as feminine for *ʔɨnk'urʕob* 'frog' or masculine for *ʔabagubəj* 'turtle,' as in (7).

(7) a. ʔɨt-a ʔɨnq'urʕob ɦanti mənka, ʔɨzz-a tʃɨru,
that-F frog one.F bat, that-F bird
ʔɨzz-abəq'ɨli, ɦanti wəxarɨja, ʔɨzz-a mantilə
this-F mule one.F fox this-F rabbit

b. ʔɨzz-i ʔabusəlama, ɦadə ʔabagubəj, ʔɨzz-i ɦarmaz
this-M dolphin one.M turtle this-M elephant

When asked about nouns like *səʔat* 'watch,' or *məkina* 'car,' our consultant was unable to give a preference for *ʔɨzza* 'this [feminine]' or *ʔɨzzi* 'this [masculine]' without some kind of context: whether the item was large, bulky, small, or looked nice.

In order to isolate nouns and the contexts that they appeared in, part of this study was a presentation of children's storybooks read aloud in Tigrinya. Each of the pages were pictures with a few sentences on each page. The reader was asked to give a summary of what occurred on each page in Tigrinya, rather than translate directly. The characters in these stories were animals, and their assignment as masculine or feminine nouns was examined and tested against elicitation data. The gender of some animals varied, and agreement may have corresponded with contextual information, such as the animal's name in the story, their size, or dress and appearance. Other animals, such as ducks and small lizards, were consistently assigned feminine gender despite varied contexts. Restrictions on the gender assignment for these nouns corresponded to the restrictions observed traditional elicitation. The storybook narrations were limited and not conclusive, but did not refute the evidence for a class of fixed-gender nouns that can resist assignment based on sex-differentiation or attribution.

4. Attributive Gender

Evaluations can be made to nouns, and result in a gender shift, as in (8). The gender feature marked in these cases will be referred to as attributed gender.

(8) a. ʔɨzz-i sabəj
this-M man
'this man'

b. ʔɨzz-a sabəj
this-F man
'this nice/dear/esteemed man'

c. ʔɨzz-i gobo
this-M mountain
'this mountain'

d. ʔɨzz-a gobo
this-F mountain
'this little mountain (diminishing size/difficulty to climb)'

There are a wide range of evaluations that can be encoded in the attributed feminine gender of (8b) and (8d). The feminine form of 'man,' *ʔɨzz-a sabəj* in (8b), might be endearing or indicate high status: for example, when speaking about one's grandfather to other family members. The feminine form could also be used to diminish the status or size of a mountain. For example, (8d) might be the used by cyclists who are planning a trip on mountain roads, in order to downplay the difficulty of the trip.

One of these contexts is endearment, which can be denoted as [+status] (Brindle 2006: 391). This is the case in (9).

(9) a. ʔɨzz-i wəddi nɨfuʕ-ju
this-M boy clever.M.S-be.3.M.SG
'This boy is clever.'

b. ʔɨzz-a wəddi nɨfʕɨti-ja
this-F boy clever.F.S-be.3.F.SG
'This boy is clever' [+status]

The feminine agreement morpheme can alternatively indicate a negative evaluation by the speaker, denoted by [-status].

(10) a. ʔɨzz-i wəddi wəxarɨja ʔɨj-u
this-M boy fox be-3.M.S
'This boy is a coward'

b. ʔɨzz-a wəddi wəxarɨja ʔɨj-a
this-F boy fox be-3.F.S
'This boy is a coward [-status].'

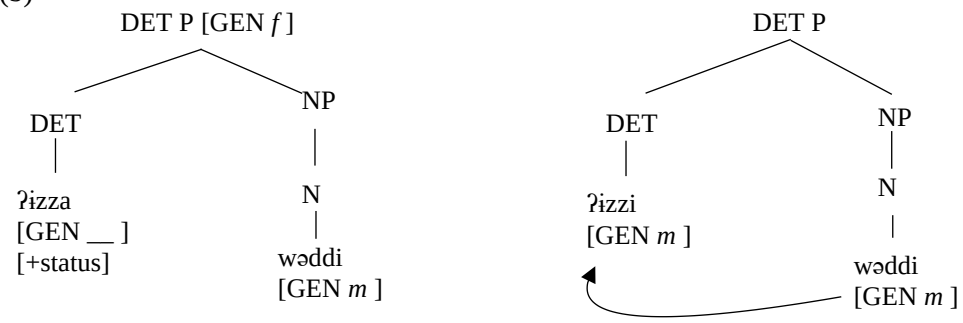
Both forms are grammatical, so the evaluation is optionally attributed by the speaker. In both (9) and (10), we might argue that the shift in gender builds on a semantic feature established by the predicate. The feminine form could intensify the positive status of *nɨfuʕ/nɨfʕɨti*, 'clever,' or the negative status of *wəxarɨja*, 'coward.' This analysis would not account for the examples in (9), however. Attribution can be interpreted in the DPs alone,with no other semantic features available.

Attributions will be analyzed here as underspecified DPs, with underspecified gender features. The underspecified gender feature of the DP, represented as [GEN__], triggers an agreement rule that results in a gender shift.

(11) (a) Default Condition: Copy GEN of N to DET

Rule 1: If [GEN __], $\begin{bmatrix} \text{N [GEN } m\text{]} \\ \text{DET [GEN __]} \end{bmatrix}$ —> $\begin{bmatrix} \text{DET [GEN } f\text{]} \end{bmatrix}$

(b)



5. Noun Classes

Tigrinya nouns can be classified into three covert classes: flexible, default, and fixed nouns. The gender of Flexible class nouns is determined by sex-differentiation, or natural gender. The Flexible class includes the epicene nouns previously mentioned, and nouns for humans. The determiner shows pragmatic agreement with the semantic referent (Wechsler and Zlatić, 2003).

(12) a. ʔɨzz-a/ʔɨzz-i ʔabal bajto
this-F/this-M member of congress
'this congresswoman/congressman'

b. ʔɨzz-a/ʔɨzz-i ħakim
this-F/this-M doctor
'this female/male doctor'

c. ʔɨzz-a gʷal ʔɨzz-i wəddi
this-F girl this-M boy
'this girl' *'this boy'*

The Flexible class regularly undergoes attributions based on semantic evaluation, as seen in (8a-b), (9), and (10) in the examples *sabəj* 'man,' and *wəddi* 'boy'. In these cases, rule-based grammatical agreement occurs.

The Default class of nouns show a strong tendency to assign gender according to salient semantic criteria of the prototype. The criteria for feminine assignment include small size, wisdom and fertility (Brindle 2006: 384). Masculine criteria include large size, power and respect, and aggressiveness. The salient semantic characteristics of *kəlbi* 'dog' determine the gender assigned in (13).

(13) a. nɨsa nɨ-t-i kɨfuʔ kəlbi səgʷigʷ-at-u
3.F.S OBJ-that-3.M.S ugly.M dog chase.out.PERF-3.F.S-3.M.S
'She chased out that ugly dog'

b. nɨsa nɨ-t-a niʔɨʃtəj kəlbi səgʷigʷ-at-a
3.F.S OBJ-that-3.F.S little dog chase.out.PERF-3.F.S-3.F.S
'She chased out that little dog'

In (14a), the unmarked gender of *ts'əgəm* 'problem' can be elicited through the indefinite form, while (14b) is an evaluation.

(14) a. ħadə ts'əgəm
one.M problem
'one problem'

b. ħanti ts'əgəm
one.F problem
'one problem (not serious)'

As in (14), the indefinite form in (15) indicates that the gender assigned to *t'el* 'goat' tends to be feminine, but attributions and sex-differentiation will dominate the semantic criteria to determine gender assignment.

(15) a. ħanti t'el ʔɨz-i t'el
one.F goat this.M t'el
'one goat' *'this big goat'*

b. ʔɨzz-i tˈel kɨ-qˈətˈkˈətˈ ʔɨnkəl-o niʔɨʃtəj nəjr-u
this-M goat SBJN-castrate.PERF when-3.M.S little be.PERF.PROG-3.M.S
'This goat was very young when it was castrated.'

The inverse applies to *ħarmaz,* 'elephant', which appears as masculine in the default in example (16).

(16) a. ħadə ħarmaz ʔɨz-a ħarmaz
one.M elephant this-F elephant
'one elephant' *'this elephant' [-size]*

b. ʔɨzz-a ħarmaz wəlid-a
this-F elephant give birth-3.F.SG
'This elephant gave birth.'

c. # ʔɨzz-i ħarmaz wəlid-u
this-M elephant give birth-3.M.SG
Intended: 'This elephant gave birth'

The third class, Fixed nouns, do not behave like the other classes in respect to attributions and sex differentiation. Even where natural gender is evident in the context, these nouns never vary in agreement. The Fixed nouns observed in the data have all been feminine nouns, such as *derhu maj* 'duck' and *wəxarɨja* 'fox.'

(17) a. ʔɨzz-aniʔɨstəj derhu.maj ʔɨ-ja ʔɨzz-a kəʔa təbaʕtəj
this-F female duck be-3.F.SG this-F and male
derhu.maj ʔɨ-ja
duck be-3.F.SG
'This is a female duck, and this is a male duck.'

b. nɨsa ʔɨt-a nɨʔɨʃtəj wəxarɨja frɨntʃʾɨt-a kɨ-tɨliɦɨs
she that-F little fox testicles-3SG.F FUT-3.S.F-lick.IMPF
mɨsrəʔajə-t-a səgwigwa-t-a
see-3.F-3.F.SG chase out-3.F-3.F.SG
'She chased out that little fox, seeing it was licking its testicles.'

The noun *bəq'ɨli* 'mule,' in (18), never appears in the masculine form. In the context where the animal strong, even a noun designating a large mule referent could only agree in feminine gender.

(18) a. ʔɨzz-a bəq'ɨli ɦajal-ja
this-F mule strong-be.3.F.SG
'This mule is strong'

b. # ʔɨzz-i bəq'ɨli ɦajal-ju
this-M mule strong-be.3.M.SG
Intended: 'This mule is strong [+size]'

Conversely, animals in the Default class that are typically marked with feminine morphology can appear in the masculine, such as *ʔɨnq'urʕob* 'frog' in (19)

(19) a. ʔɨzz-a ʔɨnq'urʕob ʔɨj-a
this-F frog be-3.F.SG
'This is a frog.'

b. ʔab t'ɨk'ɨʔ-u hadə ʔɨnq'urʕob jɨ-riʔa nejr-u
at side-3.M.S one.M frog 3.M.S-see.IMPF be.PERF.PROG-3.M.S
'At his side, a (big) frog was watching him.'

This class in not limited to animals. Other nouns that appear in feminine form in all contexts are *səbəjti* 'woman' and *nəfarit* 'airplane.' Although *səbʔaj* 'man' can undergo gender shift due to attribution, *səbəjti* 'woman' in (20) is ungrammatical if gender shift is attempted.

(20) a. ʔɨzz-i səbʔaj nəgɨram-ju
this-M man aggressive be.3.M.SG
'This man is aggressive'

b. * ʔɨzz-i səbəjti nəgɨram-ju
this-M woman aggressive be.3.M.SG
Intended: 'This woman is aggressive.'

Not all nouns in this class are animate, as illustrated by *nəfarit* 'airplane' in (21).

(21) (a) ʕabaj nəfarit
big.F airplane
'a big airplane'

(b) * ʕabi nəfarit
big.M airplane
Intended: 'a big airplane'

The advantage of a three-class system is that it accounts for the behavior of a set of feminine nouns that are not subject to the sex differentiation, semantic criteria, or evaluations that result in masculine marking for other nouns.

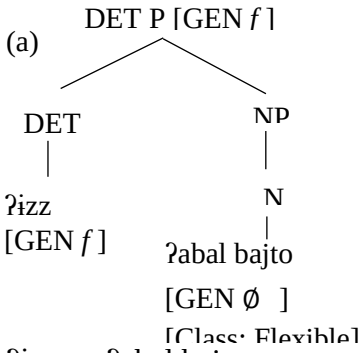
6. Features and Agreement

Having established three noun classes, the rules for determining the gender on the determiner can be amended. The default condition for agreement and Rule 1 will account for the Flexible class nouns in (22), except for the epicene noun (22a) *ʔɨzza ʔabal bajto*. It must be stipulated then, that when there is no feature to copy under the default condition, Tigrinya employs pragmatic agreement with the antecedent.

Default Condition: Copy GEN of N to DET

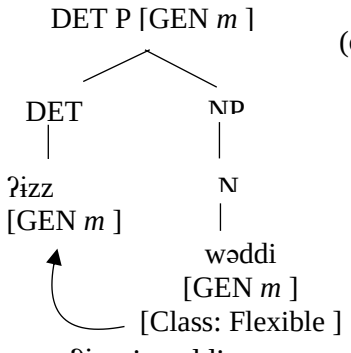
Rule 1: $\begin{bmatrix} \text{N [GEN } m\text{]} \\ \text{DET [GEN \_\_]} \end{bmatrix} \rightarrow \begin{bmatrix} \text{DET[GEN } f\text{]} \end{bmatrix}$

(22) (a)



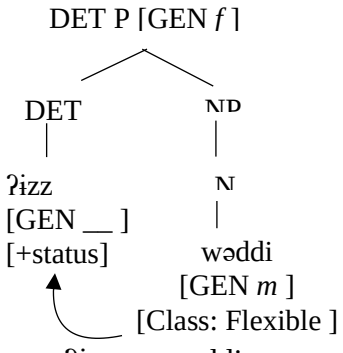
ʔɨzz-a ʔabal bajto
this-F member of congress
'this congresswoman'

(b)



ʔɨzz-i wəddi
this-M boy
'this boy'

(c)



ʔɨzz-a wəddi
this-F boy
'this nice boy [+status]'

In (22a) pragmatic agreement occurs since there is no feature to copy from N. The default condition for agreement applies to (22b) and Rule 1 to (22c).

Data from the default class requires an addition to Rule 1, so that the feminine noun *ʔɨnq'urʕob* 'frog' in (23) will be realized as attributed masculine due to a [+size] evaluation. This expansion of the rule accounts for the inverse case from (22c).

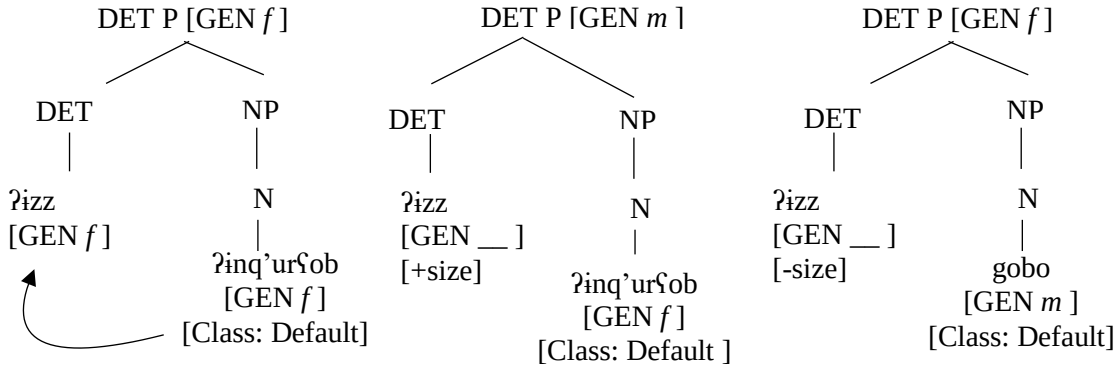
Default Condition: Copy GEN of N to DET

Rule 1: If [GEN __] on DET

[N [GEN *m*] DET [GEN __]] —> [DET[GEN *f*]]

[N [GEN *f*] DET [GEN __]] —> [DET[GEN *m*]]

(23) (a) (b) (c)



ʔɨz-a ʔɨnq'urʕob
this-F frog
'this frog'

ʔɨz-i ʔɨnq'urʕob
this-M frog
'this frog [+size]'

ʔɨz-a gobo
this-F mountain
'this mountain [-size]'

The default condition applies to (23a) and the feature is copied. Rule 1 applies to (23c) and to (23b). In order to account for Fixed class nouns that do not take attribution, an addition is needed to Rule 1. This rule stipulates that even in an attribution context where the determiner has an underspecified gender feature, the gender feature of the noun will be copied if its class is Fixed.

Default Condition: Copy GEN of N to DET

Rule 1: If [GEN __] on DET

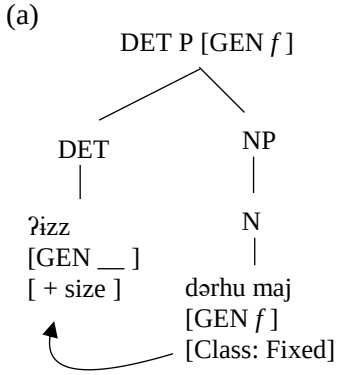
[N [GEN *m*] DET [GEN __]] —> [DET [GEN *f*]]

[N [GEN *f*] DET [GEN __]] —> [DET [GEN *m*]]

Rule 2: If [GEN __] on DET and N [Class: Fixed] Copy GEN of N to DET

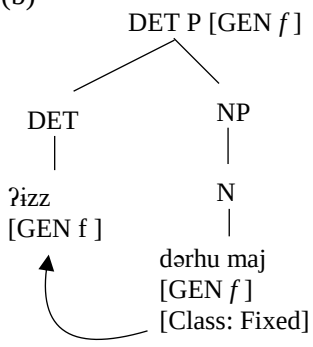
Now, the rule can account for the Fixed class nouns in (24). The features of N, *dərhu maj* 'duck', are copied to the determiner, although the determiner has the underspecified gender feature signaling an attribution.

(24) (a)



ʔɨz-a dərhu.maj
this-F duck
'this duck'

(b)



ʔɨz-a dərhu.maj
this-F duck
'this duck'

7. Conclusion

The data presented support the establishment of covert noun classes, as proposed by Brindle (2006). The expansion of the class system to include a third class accounts for the behavior of a set of nouns, referred to as the Fixed class. The Flexible and Default classes are subject to agreement by sex-differentiation and evaluations, while the Fixed class is not. The Flexible class is distinct in that it may include nouns that enter the derivation with no gender feature, and rely solely on pragmatic agreement for gender features. The limited distribution of nouns in the Fixed class parallels a trend identified by Kramer's analysis of Amharic (Kramer, 2009): that grammatical gender is disappearing, giving way to a system largely defined by natural gender.

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