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The morphosyntactic reality of phonological form

LISE M. DOBRIN

1. OVERVIEW

Apparent reference to a noun’s phonological form is common in noun and gender systems. However, if morphosyntactic operations are mediated by abstract features, as has been argued most explicitly by Anderson (1992), Zwicky (1987), and Zwicky and Pullum (1986), then phonological identities between nouns and their corresponding agreement markers cannot be expressed directly in morphosyntactic rules.

In the Arapeshan dialects spoken in Papua New Guinea, gender has an abstract morphological basis in that the genders classify singular/plural pairs, rather than individual noun forms: nouns are assigned to one of thirteen syntactic genders depending on their patterning with respect to a fixed set of canonical singular/plural pairings (cf. Arcott 1992, 1994). Nevertheless, a noun’s final phonological segment also plays a pivotal role in the assignment and realization of gender. The gender classes overwhelmingly divide along lines distinguishing the singular forms (cf. Dobrin 1995a), so that the number of genders is nearly equal to the number of phonologically permissible noun-final segments. Furthermore, the noun-final segment is normally copied in cross-referential gender marking on syntactically and anaphorically associated words, creating what is typically called an “alliterative” pattern of agreement marking.

In line with this phonological pattern, several Arapeshan dialects have developed a new gender which incorporates s-final borrowings and takes alliterative agreement with s (Arapesh lacks native s-final singular nouns). This innovation is especially remarkable since there exists a native default gender to which such borrowings might be expected to assimilate. The spontaneous development of an s-gender strongly suggests that reference to noun-final phonological form is a real, if latent, force in Arapesh noun classification. Such a force can be given analytical expression by stating the morphosyntactic agreement generalization directly in terms of phonological form.

2. THE FORMAL BASIS OF NOUN CLASSIFICATION

One of the recurring themes in Corbett’s (1991) extensive survey of gender and noun-class systems is the commonness of overlap among the criteria languages use for assigning nouns to their appropriate classes. Gender assignment criteria typically make reference to both semantics and form, with semantics taking priority when the criteria conflict. Consider, for example, the East Cushitic language Afar (cf. Parker...
and Hayward 1985:225, Corbett 1991:51-52). Afar has a two-gender system in which male humans and sex-differentiable animals are assigned to Gender A (bara/šine 'male teacher, kaina 'dog'); while female humans and sex-differentiable animals are assigned to Gender B (bara 'daughter', kani 'bitch'). The Afar genders also have formal correlates which overlap substantially with the semantic rules: nouns that end in a consonant or that end in an unaccented vowel belong to Gender A (gild 'winter', bima 'taste'), and nouns that end in an accented vowel belong to Gender B (batillé 'car', gaqanô 'bread'). In the few cases where the formal and semantic rules conflict, the semantic rules take precedence. Thus, the noun abba 'father' is assigned to Gender A even though it ends in an accented vowel, and the noun gabišteera 'slender-waisted female' is assigned to Gender B even though its final vowel is unaccented.

Within the rubric of 'formal' gender assignment there exists another sort of overlap: that among rules referring to morphological and phonological form. Corbett (1991:51) relies on the following heuristic to distinguish these two types of formal gender assignment:

\[ \text{If in order to establish the gender of a noun we need to refer to more than one form...} \]
\[ \text{then we are dealing with a morphological assignment rule.} \]
\[ \text{If, on the other hand,} \]
\[ \text{gender can be established by reference to a single form, then we are dealing with} \]
\[ \text{a phonological (assignment) rule.} \]

Thus, morphologically-based rules require reference to a noun's paradigm or a morphological element it contains, whereas rules that are based in phonology refer to an individual noun form per se.

But because gender is crucially morphosyntactic - i.e., it is defined in syntactic terms - there is yet another sense in which noun classification can be phonological, and that is by the repetition of sounds in agreement. In agreement systems of the sort that are traditionally called 'alliterative', agreement marking mimics the form of a noun in a process akin to reduplication, but applying over separate words. Noun class systems are often highly alliterative; the examples in (1) and (2) are from the African languages Goolie (from the Kru family; cf. Marchese 1986, 1988:335) and Swahili (Bantu; cf. Welmers 1973, Corbett 1991:117), respectively:

1. nyikoro kud-a ni mili kula
   man big-NS this saw animal big
   'this big man saw a big animal'

2. kí-kupí kí-kudówí kí-mojíí kí-langukí
   basket large one fell
   'one large basket fell'

Alliterative agreement poses a special challenge for linguistic theory because it appears to involve direct reference to the phonological form of the noun, in a process that literally copies phonological information from one word onto another when the two stand in a particular syntactic or referential relationship. Such powerful rules are systematically prohibited in any grammar that is limited by even the weakest form of the lexicalist hypothesis, the assumption that "syntactic neither manipulates nor has access to the internal form of words" (Anderson 1992:84). In conformity with such a requirement, it is often assumed that agreement is mediated by abstract morphological features such as [+Class] 4 or [+Feminine]. These features are then spelled out - realized phonologically - by a mechanism distinct from the one governing syntactic agreement itself. Recent proposals arguing for such a distinction within a processual framework have been made by Zwicky and Pullum (1986), Zwicky (1987), and Anderson (1988, 1992) (cf. Dobrin 1995b) for a critical review on the basis of evidence similar to that presented here). If agreement is mediated by abstract features, then there is no necessary connection between the determination of a noun's gender on the one hand, and the realization of agreeing elements on the other. This seems correct when the indicators of gender on nouns and agreeing elements are formally distinct, as they often are.

But there also exist systems in which the assignment of gender and the marking of agreement proceed hand in hand, according to a demonstrably unitory, crucially phonological generalization. For these systems it would be disingenuous to dissociate the criteria for gender assignment from the realization of gender agreement, since the form that agreement marking takes varies systematically with the form of the noun targeted in gender agreement. In the following section, I introduce data from the Arapeshan dialects of Papua New Guinea in which overlapping phonological and morphological noun classification criteria can be teased apart, revealing their distinctness. My goal is to show that even though the Arapeshan genders are thoroughly morphological in nature, they also have a real simultaneous basis in noun-final phonological form. This situation can be expressed by recognizing direct reference to phonological form, in violation of lexicalism, as a distinct though normally subordinate possibility in the implicational hierarchy of principles governing gender assignment and realization.

3. NOUN CLASSIFICATION IN ARAPESHI

In the dialect of Arapesh described by Fortune (1942), which he calls simply Arapesh, the choice of a noun's agreement paradigm is nearly always predictable from the final phonological segment of the singular form of the noun. For most genders this segment is a consonant, often with some kind of colored aspiration. An annotated list of nouns from each of the genders is presented in (3) below.

(3)

<table>
<thead>
<tr>
<th>GENDER</th>
<th>SINGULAR</th>
<th>PLURAL</th>
<th>GLOSS</th>
</tr>
</thead>
<tbody>
<tr>
<td>i.</td>
<td>(bröhys)</td>
<td>aboróbí</td>
<td>aboróyí</td>
</tr>
<tr>
<td>ii.</td>
<td>(bantréby)</td>
<td>wabahre</td>
<td>wuwyáre</td>
</tr>
</tbody>
</table>
The morphosyntactic reality of phonological form

In addition to including nouns that pair singular-final ə with plural-final ɨ, Gender VIII serves as the default gender. It is invoked in agreement with vowel-final nouns, a class of nouns which are not allocated a canonical plural by the regular system and so take the default plural əs/ə. Gender VIII agreement is also invoked with other exceptions to the normal gender assignment rules, a pattern which will be discussed below.

There are two semantic predictors of gender. Nouns referring to female persons are assigned to Gender IV, and nouns referring to males are assigned to Gender VII. Both of these semantic rules overlap substantially with the appropriate formal rules; thus, words referring to male persons virtually always end in ə (e.g., alakət 'elder brother to a man'), and nouns referring to female persons end in ɨ (e.g., babukə 'grandmother').

The syntactic categories requiring gender agreement include adjectives, verbs (subject and object(s)), intensive pronouns, three series of demonstratives, possessive NPs, and numerals. Examples of agreement from Arapesh legends (Fortune 1942) are presented in (4) below.

(4) I. kwa-ka-an ɨnuma ɨ-ba-ə ɨv-give-VI ītana ɨv-IT-eat
'she gave him her breast and he ate it'

II. awa-ɨ-ɨɨɨ ɨụgo ɨv-Pro-VII ɨv-poss-II ɨv-village-II
'his village'

III. wo-ik-ə ɨɗa-ɗa ɨɗu-ik-ə ɨno-wi-ik ɨw-ik-ik ɨn-kara
IV-Pl-sk-VII ɨDEM-III ītana ɨw-ik-ik-ik
'cow:INDEF 1SG-3SG give:INDEF 2SG:INDEF 1SG-eat:INDEF
'he cut the person up, baked it, and ate it'

IV. ɨn-ik-ik ɨn-ik ɨɗa ɨɗu-ik-ik ɨn-ik-ik-ik ɨn-ik-ik-ik
'he gave them to his wife:INDEF 1SG-3SG give:INDEF 1SG-3SG give:INDEF 1SG-3SG give:INDEF'

VI. na-ik ɨla-ik ɨla ɨla-ik-ik ɨla
'he saw a small hardwood palm'

VIII. kwa-ik ɨɗa-ik ɨɗu-ik-ik ɨɗu-ik-ik-ik ɨɗu-ik-ik-ik
'he cut the person up, baked it, and ate it'

IX. ɨɗu-ik-ik ɨɗu-ik-ik ɨɗu-ik-ik-ik
'he gave them to his wife:INDEF 1SG-3SG give:INDEF 1SG-3SG give:INDEF'

X. ɨɗu-ik-ik ɨɗu-ik-ik ɨɗu-ik-ik-ik
'he gave them to his wife:INDEF 1SG-3SG give:INDEF 1SG-3SG give:INDEF'

XI. ɨɗu-ik-ik ɨɗu-ik-ik ɨɗu-ik-ik-ik
'he gave them to his wife:INDEF 1SG-3SG give:INDEF 1SG-3SG give:INDEF'

The narratives evoking gender VIII are those which tell of the actions of a supernatural being in the past.
As can be seen from these examples, the gender markers on agreeing modifiers and anaphoric elements show a striking phonological similarity to the final segments that are predictive of gender on their controlling nouns. We regularly find alliterative sequences such as kwa-r-k ‘kumeh na-b-uh, anam-i-bar ubaru and so on.

4. THE MORPHOLOGICAL BASIS OF ARAPESH NOUN CLASSIFICATION

Despite this typically alliterative agreement pattern, there is reason to interpret the rules assigning Arapesh nouns to their respective genders as morphological by Corbett’s criterion. Referring again to the list in (3), it should be clear that not only are the noun-final elements that are predictive of gender morphosyntactically significant, but they also play an important role in pluralization. Each gender has its own conventionalized plural endings, many composed of a set of formally related alternants that cannot be reduced by rules of any reasonable generality. This is most obviously true of Gender IV, which has at least eight distinct plural alternants, but it is also true of other genders with fewer plural alternants. Gender XI, for example, pairs final singular nouns with a plural either adding *og* (e.g., *gu karut – pl. karutog* ‘treetop’) or replacing the final *i* with *e* (e.g., *gu anit – pl. anite* ‘bundle’). Which plural is selected must be listed for each Gender XI noun. Nevertheless, the choice is limited to one of these two options.

The existence of such conventionalized singular-plural pairings is relevant to the analysis of gender assignment for the following reason. There are circumstances in which a noun fails to receive one of the formally appropriate plurals, as in the examples in (5) below. In many such cases the noun receives the default Gender VIII plural *-ah* instead (cf. *Shy*).

(5)  

<table>
<thead>
<tr>
<th>Singular Plural</th>
<th>Gloss</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. “wrong” plurals:</td>
<td></td>
</tr>
<tr>
<td>farsen</td>
<td>farsenahs</td>
</tr>
<tr>
<td>natgar</td>
<td>natgarahs</td>
</tr>
<tr>
<td>b. irregular final segments:</td>
<td></td>
</tr>
<tr>
<td>bokok</td>
<td>bokokahs</td>
</tr>
<tr>
<td>pos</td>
<td>posohes</td>
</tr>
<tr>
<td>c. outright exceptions:</td>
<td></td>
</tr>
<tr>
<td>nam</td>
<td>namahs</td>
</tr>
<tr>
<td>kwojar</td>
<td>kwojorahs</td>
</tr>
</tbody>
</table>

(7)  

(8)  

(9b)  

The agreement behavior of such nouns is striking. It is virtually never the case that a noun takes an exceptional form of the plural, but nevertheless takes regular alliterative gender agreement in the singular. The singular noun *kwojar* ‘foot rope’ in (5c), for example, does not receive agreement with *v* as expected on the basis of its form; rather, it takes default Gender VIII agreement with *ah*, as in (6).

5. A DEVELOPMENT IN THE ARAPESH GENDER SYSTEM

Having established the basic properties of Arapesh gender morphology, I turn now to a development that has taken place in Arapesh subsequent to Fortune’s research, which was conducted in the 1930s. The phenomenon of interest is documented by Conrad and his colleagues (Alangum, Conrad, and Lokes 1978, Conrad 1987, Conrad and Wengia 1991) based primarily on data collected during the 1970s from the Bukiyp dialect of Arapesh, which is closely related to Fortune’s Ara-
pele. It involves borrowings from Tok Pisin, the creole lingua franca that is increasingly spoken in addition to or in place of the local vernaculars throughout most of Papua New Guinea. According to Fortune (1942:7), “no great number” of Tok Pisin nouns had been borrowed into Arapesh at the time of his research; a representative list of those cited by Fortune is presented in (8) below.

<table>
<thead>
<tr>
<th>Gender</th>
<th>Singular</th>
<th>Plural</th>
<th>Gloss</th>
</tr>
</thead>
<tbody>
<tr>
<td>IV</td>
<td>tomahawk</td>
<td>tomahawk</td>
<td>tomahawk</td>
</tr>
<tr>
<td>VI</td>
<td>sipun</td>
<td>sipunab</td>
<td>‘spoon’</td>
</tr>
<tr>
<td>VII</td>
<td>polisepelin</td>
<td>polizhem</td>
<td>‘policeman’</td>
</tr>
<tr>
<td>VIII</td>
<td>ki</td>
<td>kihas</td>
<td>‘key’</td>
</tr>
<tr>
<td>X</td>
<td>hors</td>
<td>horsbash</td>
<td>‘horse’</td>
</tr>
<tr>
<td>XI</td>
<td>let</td>
<td>letog</td>
<td>‘bottle’</td>
</tr>
</tbody>
</table>

In Fortune’s data, borrowed Tok Pisin nouns are pluralized in ways that are expected according to the native canonical pattern. Borrowings ending in -n, for example, form plurals by suffixation with ‘-ab’, one of the two alternants regularly associated with non-human n-final nouns.1 For a noun whose form does not correspond to a specific plural within the regular system, the default pattern is invoked. Thus, vowel-final nouns like ki ‘key’ and the s-final pluralizing horizon ‘horse’ are pluralized with the suffix ‘-bash’.

Gender agreement follows the pluralization pattern in suit, as shown in (9). The noun kis ‘cin, can’ in (9e), for example, is pluralized according to the form-based rules (its plural is tuab), and likewise behaves in agreement as is appropriate for an n-final non-human (i.e., Gender VI) noun. Here it is shown to take the plural possessive suffix ‘-ab’.

(9) a. i-ek amun rain no-pve (a110)
   vl-pl-make one-vl line(vl) vl-stay
   ‘they make one line (and it stays’)

   b. polisepelin-i-t masket
      police-l-m-vsl-XI rifle(vsl)
      ‘the policeman’s rifle’

   c. egah-i-b tinab
      fish-cl-vsl-vsl PL tin(vsl)
      ‘cans of fish’

The Arapesh data collected in the 1970s, by contrast, shows much more extensive borrowing from Tok Pisin. Borrowings still tend to assimilate to the native genders, producing agreement patterns such as those in (10).1

---

1. The system continues to display semantic override, whereby gender-assignment rules based in semantics take priority over rules based in nominal form. Thus, nouns like kisp ‘patrol officer’ and wanok ‘companion’ in (11) get Gender VI agreement with n irrespective of their form because they refer (in these contexts) to men.

(11) vii. mo-ne laispimani kisp
      we-do desire-vl patrol officer(vl)
      ‘the patrol officer we wanted’

   vii. yek-i-ni wanok
      lsg-psv-XI companion(vl)
      ‘my (male) companion’

The system also remains unchanged in that Gender VIII continues to act as the default, absorbing most exceptions. The data in (12) illustrates Gender VIII agreement with the noun tasi ‘tire’, which is outside the regular gender assignment system because of its final vowel, as well as with the noun tub ‘check, desire’, where the final obstruent lacks the colored aspiration which would make it eligible for assignment to Gender IV. In short, the basic structure of Arapesh gender morphology seems not to have been affected by the influx of borrowed nouns.

(12) viii. tasi
      h-etemu
      tire(vll) vil-ve heavy-vll
      ‘the tire was heavy’

   viii. apaik-i-t tub
      we-psv-vll choice(vll)
      ‘our choice; our desire’
There has, however, been one development exclusively involving borrowed nouns that end in the phoneme s. The significance of this development is what it implies about the native Arapeshan gender system: it elucidates the crucial role of phonological forms both in defining and realizing the Arapeshan genders.

While $x$ functions as a noun plural and plural agreement marker in all the Arapeshan dialects, singular-final $x$ is extremely rare, and does not define a native Arapeshan gender. Accordingly, nouns ending in this sound were treated by default in the two cases that are attested in Fortune's data from the 1930s. One of these is the (apparently) native noun pasu 'tarro pounder', which takes the default plural -elus (PL. paselu), along with the Gender VIII agreement paradigm in default. The other is the borrowed noun hort 'horse' already mentioned in (8) above, which likewise assimilates to Gender VIII, as Fortune (1942:8) puts it, "for all syntactical functions."

In (13) I present a list of $x$-final nouns that are attested in the sample of Arapeshan data collected in the 1970s. They are unmistakably Tok Pisin borrowings. The examples in (13a) are from the Bukiyip dialect (Conrad 1987, Conrad and Wogins 1991); those in (13b) are from the neighboring Southern Arapesh dialect, alternatively referred to as Muliang or Muffian (Aliumg et al. 1978). Such $x$-final borrowings are treated in the same innovative fashion in both dialects.

(13) a. $x$-final nouns that do not receive the default plural suffix -elus. Nor do they take the default agreement series, as nothing said thus far would lead us to expect. Rather, borrowed $x$-final nouns exhibit no distinct plural form and take agreement forms with $x$, resulting in collocations such as those presented in (14), amanis kes 'his suitcase' and bulus adib 'the airplane landed'. Again, the (a) forms are from Bukiyip and the (b) forms are from Southern Arapesh.

(14) a. amanis $x$-final $x$-s
    PRO-VII-POS $-$ suitcases
    'his suitcase'

    bulus $x$-final $x$-s
    PRO-VII-POS $-$ airplane
    'the airplane landed'

b. kes $x$-final $x$-s
    PRO-VII-POS $-$ case
    'his case'

    bus $x$-final $x$-s
    PRO-VII-POS $-$ bus
    'the bus came and I flagged it down'

These new $x$-final nouns do not receive the default plural suffix -elus. Nor do they take the default agreement series, as nothing said thus far would lead us to expect. Rather, borrowed $x$-final nouns exhibit no distinct plural form and take agreement forms with $x$, resulting in collocations such as those presented in (14), amanis kes 'his suitcase' and bulus adib 'the airplane landed'. Again, the (a) forms are from Bukiyip and the (b) forms are from Southern Arapesh.

A survey of the available texts reveals only two exceptions to this pattern, those presented in (15) below. Because the noun mixis 'European woman' refers to a female person, it is assigned to Gender IV in conformity with the semantic rules, which are always given priority when conflicts between semantic and form-based rules arise in Arapeshan. There is also one instance in which the noun hirnis receives agreement with Gender VIII, here the reason appears to be the word's association with the noun moîd 'work', which belongs to Gender VIII for an independent reason; it has no plural.

(15) IV. eno-k mixis ko-naki kwa-nakî-e
    some-IV European woman IV-asked-me
    'some white woman came (and) asked me...'

    VIII. hirnis
    work-for money
    'some cash-cropping'

We might ask if these new $x$-final nouns are being interpreted as plurals; after all, $x$ does occur as a native agreement marker (or part of a marker) with the plurals of three of the Arapesh genders. But there is no evidence of any back formation, which could reasonably be expected if that were the case; that is, there is no evidence that a noun like bas 'bus' is being interpreted as the plural form of a lexeme whose singular form is *bun* or *bups*. Indeed, the broader contexts of many of these examples confirm that the $x$-final borrowings are understood to be singular in number. Yet $x$ does not function as a native singular agreement marker in any dialect of Arapeshan. The issue, then, is this: Arapeshan has extensive morphological re-
sources for gender assignment which continue to function fully even in the modern Arapeshan systems with heavy borrowing, and these include a clearly productive default gender category (Gender VIII) which is used with borrowings of most other sorts, as shown above in (12). What, then, is so special about the sound s? Why don’t $s$-final borrowings receive ordinary Gender VIII agreement in default?

6. THE PHONOLOGICAL BASIS OF ARAPESH NOUN CLASSIFICATION

I propose that the development of this new agreement class for borrowed nouns ending in $s$ is not actually new at all, but reflects the work of a native Arapeshan agreement rule. This rule has the unusual form presented in (16). Its role in the grammar of Arapeshan is to demand syntactic agreement not with a head noun’s abstract gender feature (i.e., with a morphological specification), but rather with its final consonant (i.e., with a phonological specification). It results in alliterative concord, but instead of separating the assignment of gender in nouns and the realization of gender in agreement into distinct processes or conditions, the former morphological, the latter morphosyntactic, rule (16) refers to the noun’s phonological representation directly, literally copying the phonological features that are predictive of gender in agreement. If this were the only gender agreement rule in Arapeshan, knowledge of a noun’s phonological form is all that would ever be necessary to complete the specification of agreeing elements. Since many agreeing elements contain some phonological material (especially verbal material) in addition to the target $c$, the lexical representations of these elements resemble partially specified templates of a form familiar from reduplicative and root-and-pattern morphology. The elements requiring agreement listed in (17) in their partially specified lexical forms are from the Arapesh dialect documented by Fortune.

\[(16) \text{NCG} \rightarrow \text{AGK}\]
\[(17) \text{Possessive} \rightarrow \text{-i-C} \]
\[\text{Intensive Pronoun} \rightarrow \text{a-CaC} \]
\[\text{Verb-Subj} \rightarrow \text{C} \]
\[\text{V-Object} \rightarrow \text{C, C-C} \]
\[\text{Numeral} \rightarrow \text{C} \]
\[\text{Adjective} \rightarrow \text{-i, C, all-C, C-C} \]
\[\text{Demonstratives (near me)} \rightarrow \text{ni Kada} \]
\[\text{(near you)} \rightarrow \text{ni Kada} \]
\[\text{(near him/her/it)} \rightarrow \text{C Kada} \]

The burden in certainly on me to justify rule (16), since it has such an unusual form and since it grants syntax the power to “reach into” the phonological representation of a word directly, violating the Principle of Phonology-Free Syntax (Zwicky 1987, Zwicky and Pullum 1986) and related conditions that have been formulated to limit the types of interactions that may occur among autonomous subdomains of grammar. If grammatical subdomains interact only at their interface, as modularity dictates, then rule (16) suggests not only that the conceptually autonomous modules of phonology and syntax indeed have an interface, but also that information may flow “upwards” across that interface, from phonology to syntax, ruling out any model in which syntactic information is computed logically prior to phonological information.

Rule (16) also demands justification in light of the evidence presented above that the Arapeshan genders are defined morphologically by way of abstract gender features that conform to distinct principles for their assignment on the one hand, and their realization on the other. Recall, for example, the frequent inconsistencies between plural marking in agreement and plural marking on nouns; these are obviously not derived via rule (16). The main problem with treating Arapeshan gender as an abstract morphological category is that the system has another property that goes completely unrecognized on that account, namely, that the genders virtually exhaust the available word-final consonantal phonology.

The Arapesh consonant inventory in (18) is adapted from Fortuno (1942); the Buki-Ho and Southern Arapesh inventories differ from it somewhat, though not in ways that affect my argument. The boxed-in segments in the chart in (18) represent gaps in the gender morphology, i.e., consonants that do not play a direct role in noun classification by predicting a gender. The two boxes correspond to two straightforward generalizations.

\[(18) \begin{array}{cccc}
p & t & \text{a} & \text{C} \\
b & d & j \end{array} \]
\[\begin{array}{cccc}
m & n & \text{h} & \text{t}\end{array} \]

The sounds $d$ and $j$ do not appear word-finally on Arapeshan nouns in either the singular or the plural; nor do they appear finally on words of any other lexical category. In other words, the fact that these sounds fail to participate in noun classification is due to their absence from the relevant class-defining position for phonotactic rather than morphological reasons. The segments $d$ and $j$ comprise a natural class in Arapesh phonology; they are distinctively voiced coronal obstruents. Their absence from word-final position can thus be expressed by the specifically phonological feature co-occurrence restriction written in (19).
The other box in the phonemic chart is the one corresponding to $s$ and $i$. These sounds appear word-finally quite commonly in Arapeshan, but only on plural nouns. As a consequence, $s$ and $i$ serve as agreement markers only in the plural. I would like to suggest that it is these distributional facts that explain why speakers of Arapesh treat the new $s$-final nouns as they do. The gap in the gender system corresponding to native $s$ is a morphological anomaly, a category which could exist, given the resources of the language, but which for mundane, surely historical reasons does not. When new nouns were introduced in sufficient number to warrant filling that gap, the system responded; it developed a new class that takes agreement with $s$, just as rule (16) predicts that it should.

An even more striking source of evidence for the phonological gender agreement rule in (16) comes from a phenomenon which involves agreement with an allomorph (an allophone?) of a noun terminal. In the Arapesh dialect there are several genders that mark the noun plural and plural agreement with $x$. One and only one of these genders, Gender 4, has an optional variant which replaces noun plural $s$ with a glottal stop. Examples are given in (20).

(20) $bajig$ (SG) – $bajig$ or $bajig$? (PL)  ‘sago bark’
    metig (SG) – metigas or metigas? (PL)  ‘casewary trap’
    barawag (SG) – barawas or barawas? (PL)  ‘spear’

Glottal stop is at best quasi-phonemic in the Arapesh dialect; it appears quite often, mostly as a realization of $s$, though Fortune insists that no distinctions in meaning ever hinge on its presence. It is best to view these glottal stop-final forms as treated in agreement. When the agreement marker appears prefixally or word-internally, the regular agreement forms with $s$ appear, as shown by the verbal prefix $ga$ in (21a). However, when the agreement marker is itself word-final, it too is realized as glottal stop instead of $s$, as in (21b,c).17

(21) a. ano-ga? pu-gar-a?  mahiga?
    some-III.PL you.will-III.PL-eat meat(III.PL)
    ‘you all will eat some meat’

b. barawa?  ...  abwal-si-ga?
    spear(III.PL)  ...  IV.SG-POSS-III.PL
    ‘spears... her’

(126) c. metiga?  bio-ga?
    cass.trap(III.PL)  two-III.PL
    ‘two cassewary traps’

Note that the glottal stop does not appear in place of $s$ on agreeing elements unless it appears in place of $s$ on the noun; nor have I found any instances of $s$ on final agreeing elements when the noun itself is pluralized with glottal stop. It is not possible for this kind of agreement to be parasitic on an already existing agreement form, since glottal stop does not mark agreement anywhere else in the Arapesh gender system. It should be emphasized that this phenomenon does not reflect an automatic phonetic process but it is crucially sensitive to morphological information: only the Gender III plural $x$, and not the $x$ present in Gender I, Gender VII, or Gender IX plurals is subject to glottal substitution. The confinement of glottal substitution to a single gender confirms that the various $x$ plurals are not collapsed into a single category in the language, further reinforcing my suspicion that the development of the new agreement pattern for borrowed nouns with $x$ is not simply an assimilation to a ‘dominant’ plural form.

This entire array of Arapeshan facts is unified by the analysis presented in Table 1. For the sake of concreteness the specific rules are from Arapesh, but an essentially similar analysis could easily be stated for other Arapeshan dialects as well. The table can be construed as a hierarchy of rules or constraints, and the resemblance to constraint hierarchies within Optimality Theory (McCarthy and Prince 1993a,b, 1996; Prince and Smolensky 1993) is quite intentional. It should be borne in mind, however, that the purpose of the hierarchy here is to establish the possible ‘layers’ within a class of morphological systems rather than to directly derive surface forms. Thus, while the gender-assignment rules themselves are language-specific, the hierarchical ordering of rules into blocks by information type (semantic, morphological, phonological) is proposed to be a universal property of noun classification systems.

<table>
<thead>
<tr>
<th>Semantic</th>
<th>Regular</th>
<th>Morphological</th>
<th>Derivative(1)</th>
<th>Derivative(2)</th>
</tr>
</thead>
<tbody>
<tr>
<td>[ma-ta-lo-pa] → *v</td>
<td>[ma-ta-lo-pa] → *v</td>
<td>[ma-ta-lo-pa] → *s</td>
<td>[s] → [s]</td>
<td>[s] → [s]</td>
</tr>
<tr>
<td>[mas-ta-ma] → *v</td>
<td>[mas-ta-ma] → *v</td>
<td>[mas-ta-ma] → *t</td>
<td>[t] → [t]</td>
<td>[t] → [t]</td>
</tr>
<tr>
<td>[ta-ta-lo-pa] → *v</td>
<td>[ta-ta-lo-pa] → *v</td>
<td>[ta-ta-lo-pa] → *t</td>
<td>[t] → [t]</td>
<td>[t] → [t]</td>
</tr>
<tr>
<td>[ta-ta-lo-pa] → *v</td>
<td>[ta-ta-lo-pa] → *v</td>
<td>[ta-ta-lo-pa] → *t</td>
<td>[t] → [t]</td>
<td>[t] → [t]</td>
</tr>
<tr>
<td>[ta-ta-lo-pa] → *v</td>
<td>[ta-ta-lo-pa] → *v</td>
<td>[ta-ta-lo-pa] → *t</td>
<td>[t] → [t]</td>
<td>[t] → [t]</td>
</tr>
</tbody>
</table>

Table 1: The Arapesh Gender Assignment System.
<table>
<thead>
<tr>
<th>Semantic</th>
<th>Morphological</th>
<th>Phonological</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Regular</td>
<td>Default(1)</td>
</tr>
<tr>
<td>&quot;European woman&quot; (Tok Pisin)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>[viri] → vi</td>
<td></td>
<td></td>
</tr>
<tr>
<td>&quot;elder brother to a man&quot;</td>
<td></td>
<td></td>
</tr>
<tr>
<td>[vistaŋ] → vi</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>&quot;dog&quot;</td>
<td></td>
<td></td>
</tr>
<tr>
<td>[nyet - nyong] → vi</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>&quot;tree snakes&quot;</td>
<td></td>
<td></td>
</tr>
<tr>
<td>[gimol - gimolab] → vi</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>&quot;are pondeke&quot;</td>
<td></td>
<td></td>
</tr>
<tr>
<td>[pet - pondeke] → vi</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>&quot;suitcase&quot; (Tok Pisin)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>[sind] → A0a</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Table 2: The Assignment of Gender in Selected Arapeshan Nouns.

The analysis says the following. Rules that assign gender on the basis of nominal semantics have the first say. In Arapesh there are two such rules, and they have no exceptions. The gender assignment of the borrowed human noun *attis* ‘European woman’ in Table 2 is subject to no simultaneous pressure from the morphology, but native human nouns are almost always convergently categorized by both the semantics and the morphology, as in the case of *niuk* ‘elder brother to a man’. This redundancy is surely the source of the system’s robustness; as Corbett points out, “[w]hen it may be possible to show that for nouns of a particular type one type of assignment rule takes precedence, and so is generally of greater importance than the others, it does not follow that the less important predictors of gender have no role. They too doubt have the effect of reinforcing the main rules and so of contributing to the stability of the particular system” (Corbett 1991:64).

For nouns lacking gender-relevant semantics such as *nyet* ‘dog’ in Table 2, the highest level gender assignment decision is made by the morphological assignment rules. These rules refer to information that is more abstract than an individual noun form; in Arapesh they refer to the singular-plural relation. Morphological assignment derives the same result as the phonological assignment rule for normal singular nouns and for most plurals (e.g., *lawinan* ‘tree snakes’), though not for those exceptions that either take the default plural *-esus or some other unpredictable plural. The key to understanding the assignment of the native s-final noun *petu* ‘taro pounder’ in Table 2 is to recognize that it also participates in the number marking system through the morphological default plural *-esus, and as a result, it takes agreement with the morphological default gender, Gender VIII.

Finally, when none of these rules has anything to say about a noun’s gender, as in the case of the new s-final nouns like *kex* ‘suitcase’ in Table 2 which do not have distinct plural forms at all, the decision falls to the simplest, most iconic determinant of gender: reduplicative or alliterative assignment, which refers to a noun at the level of its phonological form and extrapolates for it on that basis an entire paradigm of agreement markers. This last kind of rule asserts itself only rarely – it is only rarely forced to – and it is regularly satisfied indirectly in any case by the working of the higher-level rules. But with the infusion of a set of new nouns that are uninterpretable by either of the two higher-priority rule types, we see the phonological rule set into motion. I suggest that what we are seeing is a redundant generalization suddenly brought to life, pushed from an unintentional position in the “back of the lexicon” into the active, productive operation of the language.

7. CONCLUSION

The fact that the phonological agreement rule in Table 1 operates on a noun’s final sound is particular to Arapesh; associations between morphosyntactic categories and phonological form can also target other positions within a word. For example, McLaughlin (1996, 1997) argues that an alliterative principle was used as a default strategy in an earlier stage of the Niger-Congo language Wolof. In Wolof it is the initial consonant of the stem that is copied:

<table>
<thead>
<tr>
<th>(22) Noun</th>
<th>DEF (K)/NUM</th>
<th>Gloss</th>
</tr>
</thead>
<tbody>
<tr>
<td><em>gindi</em></td>
<td>gi</td>
<td>‘the chicken’</td>
</tr>
<tr>
<td><em>nukan</em></td>
<td>ni</td>
<td>‘the sugar’</td>
</tr>
<tr>
<td><em>ji</em></td>
<td>ji</td>
<td>‘the scorpion’</td>
</tr>
<tr>
<td><em>wastu</em></td>
<td>wi</td>
<td>‘the hour’</td>
</tr>
</tbody>
</table>

I argue elsewhere (Dobrin 1995b) that there is an analogous phonological gender rule of the form in (23) in the West Atlantic language Baimak which operates the exact same way the Arapesh rule does, but on the noun-initial syllable rather than the word-final consonant.
(23) \(CVX\) → AGR

There are two types of Baimuk nouns (Sauvageot 1967, 1987). They are either prefixed, as in (24), or un prefixed, as in (25). Sauvageot (1967:233, 1987:19) suggests that the unprefixed nouns are fully assimilated words of foreign origin.

<table>
<thead>
<tr>
<th>Class</th>
<th>Singular</th>
<th>Plural</th>
<th>Gloss</th>
</tr>
</thead>
<tbody>
<tr>
<td>7/8</td>
<td>gu-xul</td>
<td>ha-xul</td>
<td>'tunic'</td>
</tr>
<tr>
<td>9/10</td>
<td>be-alen</td>
<td>i-alen</td>
<td>'puppy'</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Class</th>
<th>Singular</th>
<th>Plural</th>
<th>Gloss</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ø</td>
<td>depuy</td>
<td>depuy-Ø</td>
<td>'grass'</td>
</tr>
<tr>
<td>Ø</td>
<td>kucu-ma</td>
<td>kucu-ma-Ø</td>
<td>'river'</td>
</tr>
</tbody>
</table>

With prefixed nouns, agreement marking matches the form of the noun prefix, as in (26). In the case of unprefixed nouns, however, agreement is satisfied by copying the initial CV sequence of the noun, producing forms such as those in (27).

<table>
<thead>
<tr>
<th>Form</th>
<th>Meaning</th>
</tr>
</thead>
<tbody>
<tr>
<td>gu-xul</td>
<td>gu-fer</td>
</tr>
<tr>
<td>7-tunic</td>
<td>7-white</td>
</tr>
<tr>
<td>'white tunic'</td>
<td></td>
</tr>
<tr>
<td>ha-xul-Ø</td>
<td>ha-gun</td>
</tr>
<tr>
<td>8-those down there</td>
<td></td>
</tr>
<tr>
<td>'those tunics down there'</td>
<td></td>
</tr>
<tr>
<td>kucu-ma-Ø</td>
<td>kucu-Ø</td>
</tr>
<tr>
<td>river-pl</td>
<td></td>
</tr>
<tr>
<td>'this river'</td>
<td></td>
</tr>
<tr>
<td>kucu-ma-Ø</td>
<td>kucu-ma-Ø</td>
</tr>
<tr>
<td>[CV-two-pl]</td>
<td></td>
</tr>
<tr>
<td>'two rivers'</td>
<td></td>
</tr>
</tbody>
</table>

7-tunic  [CVX]  7-white
'white tunic'
ha-xul-Ø  [CVX]  ha-gun  (1967:231)
8-those down there
'those tunics down there'

(27) kucu-ma-Ø  [CVX]  kucu-Ø  (1967:232)
river-pl  [CVX]  river-pl
'this river'
[CV-two-pl]  [CV-two-pl]
'two rivers'

In contrast to the rules themselves, the hierarchy of rule types in Table 1 is presumably universal. Corbett’s survey of over 200 languages finds no case in which gender does not have at least one semantic correlate, and as I have shown, this generalization holds even in Apanesh. What the analysis here adds is a distinction between the use of morphological and phonological information as a means of defaulting out of the regular system. Phonological assignment can be seen as the ultimate last resort, a type of rule that is only called upon when standard morphological defaults are for some reason inapplicable. The analysis thus enriches the notion of default gender to include the possibility of opting out of mediation through morphologically specified form altogether.

It remains to be seen whether we can isolate precise conditions under which phonological defaults can be expected to arise. It is surely no coincidence that

Bainuk and Apanesh both have large gender systems involving a great deal of redundancy in assignment and agreement. Assuming that inflectional morphology is based in systems of contrast, Carstairs-McCarthy (1994) speculates that in large overt gender systems it is the syntagmatic dependencies themselves that provide the contrastive “meanings” with which gender categories are associated. While this view leaves unexplained why phonological agreement (alliteration concord) should be more common in large systems than in small ones, it does fit nicely with the suggestion made here that the assignment of gender in nouns and the realization of gender in agreement may sometimes reduce to two sides of the same phenomenon. On the other hand, Carstairs-McCarthy (1994:781) also predicts that the introduction of new nouns lacking an overt gender marker will undermine such a syntagmatic categorization mechanism, encouraging a shift of the burden of contrast away from overt syntagmatic identities and onto covert paradigmatic meanings. What the development of the new s-agreement class in Apanesh shows is that this is not the only—or even necessarily the preferred—alternative.

The recognition of phonological agreement has related, though somewhat less subversive, parallels in the literature on identity in the constraint-based framework of Optimality Theory, particularly in Yip’s (1995a,b) analysis of identity avoidance in morphology and in recent discussions of morphological reduplication and truncation (Bensus 1996, McCarthy and Prince 1996). In dealing with patterns of echo-word formation which approach yet veer away from absolute homophony, Yip appeals to a REPEAT constraint requiring morphological outputs to contain two identical elements. Violation of REPEAT in deference to a higher-ranked OCP derives the familiar pattern of echo-word formation in which a copy deviates in form, though only minimally, from its base; a classic example is the Yinglish dismissive “x-dunx” as in table-shumble. Working within a similar framework, Bensus (1996) and McCarthy and Prince (1996) recognize correspondences among surface forms such as Base-Truncated Form identity and Base-Reduplicant identity as dimensions along which potential outputs may be evaluated. Yip’s observation that the calculation of identity is “fundamentally phonological in nature” (1995a:23) leads her to conclude that phonology and morphology may not, after all, comprise discrete grammatical components.

What the OT analyses share with the analysis here is the recognition that morphosyntactic identity needs to be calculated over what Poplack (1981) calls “mortal” phonological elements. In Apanesh the s phoneme is a predictor of gender, yet glottal substitution occurs word-finally in agreement forms when it occurs in the head noun. In the Puerto Rican Spanish dialect studied by Poplack the s phoneme is a plural marker, but it shows an analogous “concord effect” whereby “deletion tends to occur from all NP components simultaneously, or is blocked simultaneously on all” (Poplack 1981:70). In both languages we find a sound whose behavior is firmly rooted in the parochial phonological system, replete with its own idiosyncrasies, even as it serves to express some grammatical function.
Phonological agreement of the sort found in Arapeshan, Baimusk, and Puerto Rican Spanish is extraordinary because the phonological identity calculation spins in a principled way over phrases, clauses, and discourse, crashing into the traditional domain of syntax. If Yip's logic is correct, then it seems the borders between grammatical components are being stormed at all fronts. But if Arapeshan gender operates in the way I am convinced it really does, then replicating a phonological element on another word must be accepted as a legitimate strategy for satisfying grammatical agreement, and the consequence for linguistic theory is clear: morphosyntax cannot be categorically denied direct access to a word's phonological form.

NOTES

1. The ideas in this paper were first presented at the 1996 meeting of the LSA in San Diego, CA. I am grateful to Mark Aronoff, John Goldsmith, Gene Graff, Richard Janda, and Jerry Sadock for being my teachers, hearing me out, and helping me crawl towards clarity.

2. In what follows I use the terms "gender" and "noun class" interchangeably to refer to any syntactically significant noun classification, irrespective of its ultimate semantic basis. In all cases the determining criterion is agreement: genders and noun classes are groupings of nouns that are to be distinguished syntactically by the agreements they take (Cufert 1993:4).

3. The Arapeshan dialects are spoken by around twenty-five thousand people living in a contiguous region of the East Sepik and West Sepik ("Sandbian") Provinces in northern Papua New Guinea. Languages of the Torricelli phylum, to which the Arapeshan dialects are assigned by Laycock (1975, 1975), are characterized by SVO word order, relatively simple verbal morphologies, and complex nominal systems involving noun classification and highly irregular plural marking.

4. Fortes (1942) calls these "whispered terminals." They are transcribed here as superscript segments rather than with the under-ringing Fortes uses.

5. Extensive justification for analyzing Gender VIII as the default gender is given by Aronoff (1996:97-103).

6. The lower case letters preceding page numbers in examples correspond to the following works in the references: (a) Fortes 1942, (b) Conrad and Wogga 1991, (c) Conrad 1987, (d) Alaganum, Conrad, and Lukas 1978.

7. A lexicostatistical survey conducted by Conrad (1978) reveals considerable dialect change occurring across the varieties of Arapeshan investigated here. Conrad and Wogga (1991) report 86% probable cognates between the Arapesh dialect analyzed by Fortune and the Bukiyi dialect represented in their own texts. However, this figure is based on the degree of overlap in vocabulary and therefore fails to express the substantially nonidentity structure of Arapesh morphology. It is this unity of structure that warrants the cross-dialectal comparison undertaken here. From a structural point of view the Bumbita dialect is the sole outlier. In Bumbita, which is also known as Weri, plural formation is dependent upon the form of the singular as in the other Arapeshan dialects; however, gender is assigned exclusively on semantic grounds: male human, female human, everything else (Stephen Lash, p.c.; cf. Debris (in progress)).

Where more than one plural allomorph would be formally appropriate, the selection is nonrandom, but rather follows the principle of "morphosyntactic transparency" as it is called in Natural Morphology (cf. Klima-Schoor and Dresler 1984, Wurzel 1989) or, in the vocabulary of Optimality Theory (cf. McCarthy and Prince 1993b) is subject to constraints on Alignment: the form selected is the one which least obscures the boundary between stem and suffix. For the argument and further discussion, cf. Debris (in progress).

8. The exact realization of the default plural suffix depends at least in part on the preceding context: the z vowel is regularly absent after a vowel-final stem. However, the reason for the appearance of the vowel is more complex than that. As in the examples following, there are several other cases of apparently unrelated variation, some of which belong to the native vocabulary.

9. The transcription here closely reflects the original source, except for minor normalizations. For example, the Bukiyi schwa is written here as r rather than a as in Conrad and Wogga (1991).

10. Default agreement is marked by s~ = a ~ r in Bukiyi, and by a~ ~ s ~ r in Southern Arapesh.

11. The two words are attested together in Bukiyi as mabhi kibisi, and elsewhere as kibisi kosi (literally "business it's work") meaning "cash cropping," i.e., work for money as opposed to subsistence. Note that dropping the second element of a possessive noun phrase is common in Arapeshan (cf. Fortes 1942:33-45).

12. The sound s simultaneously occurs as a noun plural and plural agreement marker in around the same number of genders in the Bukiyi dialect. Southern Arapesh s corresponds primarily to Arapesh z and Bukiyi c.

13. For example, the phrase including the s-final borrowing bai rue/k (in 14) is extracted from a text with the following running gloss: "And so we waited for the aeroplane. We waited and soon Wanganu and his children came: two sons, one daughter, and he and all came in a track. They came. They came and we stood around. We stood around and soon the aeroplane came and landed. It came from Ukarampa, which is far away. The man, who was the pilot, brought down Wanganu's things. It was a very large aeroplane and it came from Ukarampa." (Conrad and Wogga 1991, 1978) and theukarampa" (Conrad and Wogga 1991, 1978) and theukarampa"

14. It is not my concern in this paper to differentiate procopational from constraint-governed interpretations of this agreement phenomenon.

15. Speakers of Bukiyi systematically substitute c for Arapesh z, which is the Gender VIII plural marker (B buto/c - A kbus/ 'children'). They also distinguish ! from t, though these sounds are neutralized to z in word-final position. I suggest elsewhere (Debris (in progress)) that a contrast among liquids - which occurs only rarely in one dialect, Abok (Neklit 1986) - is not sufficiently salient to support a morphological contrast in Arapesh. The only liquid in Southern Arapesh is 3. More significantly, Southern Arapesh has glottal stop in place of Arapesh z word-finally (3 is realized with labialization on nouns as in all Arapeshan dialects); the few instances of word-final 3 in the Southern Arapesh data in Alaganum, Conrad and Lukas (1978) and Conrad (1978) occur only on proper nouns and borrowings, and are not labialized. There are also some shifts among the continuants in Southern Arapesh: s in the native vocabulary corresponds uniquely to Arapesh z (e.g., SA barisul - A busul 'children'); Southern Arapesh B corresponds to Arapesh plural z (SA mongwakan - A mongwakan 'master'), SA bembok - A bembok 'bed', SA l Mango - A mang 'tree'; Southern Arapesh systematically replaces Arapesh k with t (SA nulai - A nula 'tooth'), SA lamga - A lamga 'pig'). What is crucial for my argument is that n does not occur word-finally on singular nouns in any dialect of Arapesh, though it is phonologically admissible in this position.

16. "Changes between k and the glottal stop can be made with impunity, in no two words which depend upon k and a glottal stop distinction for their difference in meaning exist in the language. In practice, in [the dialect described here], the k is in very general use, and the glottal stop substitute is often occasionally used instead of a terminal k, usually in a verb or in a pronoun." (Fortes 1942:34). An example of glottal stop substituting for k can be found in the Gender VIII example in (4) above and in example (21a) below: the verb stem -ut 'cut' can also be pronounced -kt.

17. It is not enough to be suffixal: the agreeing s is only realized as glottal stop in absolute final position: 3.

18. 3. (my father's) s/3s are old
REFERENCES


Dobrin, Lis M. 1995b. "Theoretical Consequences of Literal Alliterative Concord". In A. Damert et al. (eds.), Papers from the 31st Regional Meeting of the Chicago Linguistic Society, Volume 1: The Matt Section. Chicago: CLS.


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