THE ROLE OF MSC'S IN OSHIKWANYAMA LOAN PHONOLOGY*

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This paper takes its data from OshiKwanyama, a Bantu language
spoken in Namibia and Angola; the paper is an investigation of
the phonological incorporation processes at work in the loan-
words of this language. When loanwords are taken into a lan-
guage the degree to which they undergo such phonological modi-
fication varies. There appears to be a hierarchy of such modi-
fications in OshiKwanyama, such that some always apply, others
normally apply, and yet others apply rarely and in special cir-
cumstances. These modifications are often based on, though not
necessarily identical to, the MSC's of the borrowing language.
The modifications appear to work in terms of a hierarchy of ap-
plication. The paper describes several loanword incorporation
processes and delineates the modification hierarchy.

1. Introduction

    This paper explores some aspects of loanword phonology as illustrated by da-

ta from OshiKwanyama, a Western Bantu language spoken in northern Namibia and

southern Angola. The principal European source languages for borrowing in Oshi-

Kwanyama are English, Afrikaans, and German. The paper will investigate the re-

lationship between the morpheme/word structure constraints of OshiKwanyama, on

the one hand, and, on the other, the actual loan incorporation processes which

have modified the shape of OshiKwanyama loanwords.

    The degree to which a loanword is modified can vary considerably: some

loanwords are hardly changed at all and may seem quite "foreign-sounding" to na-

tive speakers of the borrowing language. Other words may be so strongly modi-

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fied that, to the native speaker, their shape is indistinguishable from that of
a native word. Often, the degree to which a loanword is modified seems to de-
pend as much on social, cultural, and historical factors as on purely linguis-
tic ones. Thus, a loanword with few changes may be used by an educated speaker
to show that he or she has a knowledge of the source language; this is particu-
larly true if the source language has prestige of some sort. For example, a na-
tive speaker of English who knows French (or even one who doesn't, but wants to
sound as if he or she does) may give a word like *genre* the pronunciation
[žãɹə] , while a less-educated or less pretentious speaker may use the pronunci-
ation [žɒnə] . The degree to which a loanword is modified may also depend on
the age of the loanword. If borrowing from a source language continues for a
considerable period of time, the accumulated number of loanwords and continued
borrowing may eventually influence the phonological system of the borrowing lan-
guage to change, thus resulting in new and different borrowing strategies. For
example, Latvian borrowed words from German for almost eight centuries; the two
words for coffee, *kapija* and *kafija*, were both borrowed from (High) German
Kaffee, but on two different occasions: *kapija* is the older borrowing, *kafija*
is the more recent borrowing and also the standard form of the word. These two
examples illustrate a change in the way in which borrowing takes place: origin-
ally Latvian had no *f* sound—thus, when the word was first borrowed, *f* was re-
placed by the phonetically closest obstruent, which was *p*. Later the weight of
borrowings gradually introduced *f* into the inventory. By the time the word was
borrowed again, *f* was a phoneme of modern Latvian.

My focus in this paper is on loanwords which have been modified, and on the
source of these modification processes. Those loanwords which have not under-
gone any of the modification processes I will discuss are *not* counter-examples;
they are merely loanwords which have not been completely incorporated into the
native lexicon.[2]

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[2]Loanwords which have not been completely incorporated into the native lexi-
con tend to be used by the better-educated OshiKwanyama speakers, in particular,
by younger people who know French and/or English well. These kinds of loanwords
(as opposed to the more completely adapted ones) tend also to be used in urban,
rather than rural, settings.

2. <u>Sound Substitution</u>

Since borrowing and source languages most often do not have the same inven-
tory of sounds, one obvious way in which loanwords are modified is by sound sub-
stitutions. That is, for any source language sound which the borrowing lan-
guage lacks, the phonetically closest sound is substituted. The consonant in-
ventory of OshiKwanyama[3] is shown in (1)—only g is not contrastive.

(1)   p   t   k
             b   d   g
                      č
                      ǰ
             f   š   x   h
             v
      m   n   ɲ   ŋ
             l
                      y   w

Since OshiKwanyama has no *r* sound, *l* is normally substituted, as shown in (2).

(2) <u>source language</u>   <u>source word</u>   <u>loanword in OshiKwanyama</u>
     German   [radiyo]   [oladiyo][4]   'radio'
     English   [tayɚ]   [etayela]   'tire'
     Afrikaans   [frax]   [ofulaxa]   'burden, loan'

There are some loanwords in which *r* has not been replaced, but they are a tiny
minority and are precisely the kinds of examples I had in mind when I referred
to words which seemed "foreign-sounding" to the native speaker—words which are
not fully incorporated into the native system.

OshiKwanyama also has no *s* sound; both [f] and [š] are phonetically
close to *s*, and either sound can be substituted for *s*, although [š] , being

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[3]The dialect shown is that of Mr. Joseph A. Taukondyo, who comes from the
extreme northern part of Namibia. My sincere thanks to him for the many hours
he worked with me.

[4]The loanword data derive in part from the speech of Mr. Taukondyo and par-
tially from written sources, in particular Tobias and Turvey [1965] and Tönjes
[1910].

another sibilant, seems to be preferred. Some examples are shown in (3). The
last example has two pronunciations, the two forms coming from two different di-
alects, one apparently preferring [š] , the other [f] .

(3) Eng   [sæk]   [ošako]   'sack'
     Eng   [vəɾs]   [oveliša]   'verse'
     Eng   [sɔɹt]   [ofoloto]   'sort'
     Eng   [skuwl]   [ošikola]   'school'
                        [ofikola]

3. Interaction with MSC's

     Some of the most intriguing modifications in loanwords are in response to
constraints (in the borrowing language) on the occurrence of particular pat-
terns of sounds, that is, to the word and morpheme structure constraints of the
borrowing language.

     One of the major constraints on sounds in Oshikwanyama is the constraint
against closed syllables, i.e. no syllable may end in a consonant. It follows
from this that all OshiKwanyama words must end in a vowel. This last appears
to be the very strongest constraint in the language: I have found not one sin-
gle loanword which ends in a consonant. Even loanwords which lack most other
signs of incorporation have acquired a final vowel. The examples in (4) are
very "foreign-sounding", yet all of them have final vowels.

(4) Eng   [ays kɹiym]   [oayskrima]   'ice cream'
     Eng   [biɹ]   [obira]   'beer'
     Eng   [blækbɔɹd]   [blækbolda]   'blackboard'
     Eng   [sɛrəf]   [šelafi]   'seraph'

     The example words meaning 'ice cream' and 'beer' are foreign-sounding in
large measure because the *r* was not replaced by *l*. 'Blackboard' and 'ice
cream' contain word-internal consonant clusters, and 'seraph' and 'blackboard'
lack noun class prefixes.

     OshiKwanyama has nine noun classes. The canonical form of the nominal mark-
er is an augment or pre-prefix (which is a vowel) followed by a class prefix,
although this shape is not always visible as such on the surface. The noun
class system (slightly simplified) is shown below. The class numbers at the
left, which are the numbers I shall be referring to in what follows, are the

ones assigned by Tönjes [1910] in his grammar; the equivalent Bantu class num-
bers are shown on the right:

1	omu-/ova-	1/2
2	omu-/omi-	3/4
3	e-/oma-	5/6
4	o(N)-/e:(N)-	9/10
5	oši-/oi-	7/14
6	olu-/omalu- (or e:(N)-)	11/6 and 11, (or 10)
7	oku-/oma-	15/6
8	ou-/omau-	14/6 and 14
9	oka-/ou-	12/14

Examples of native words from the five classes with the largest membership are
shown in (5):

(5)		singular	plural	
Cl. 4	o(N)-/e:(N)-	[oši]	[e:ši]	'fish'
		[oɲofi]	[e:ɲofi]	'star'
		[odila]	[e:dila]	'bird'
Cl. 3	e-/oma-	[edina]	[omadina]	'name'
		[ekombo]	[omakombo]	'large goat'
Cl. 5	oši-/oi-	[oškombo]	[oikombo]	'goat
		[ošipute]	[oipute]	'wound'
		[oškwaɲama]		'Kwanyama language'
Cl. 1	omu-/ova-	[omukoŋgo]	[ovakoŋgo]	'hunter'
		[omuloŋgi]	[ovaloŋgi]	'worker'
Cl. 9	oka-/ou-	[okakombo]	[oukombo]	'small goat'
		[okambwa]	[oumbwa]	'puppy'

Loanword assignment to noun classes corresponds closely to the size of the
noun class. That is, class 4 has the largest number of native nouns[5] and is al-
so the class to which most loanwords are assigned. Classes 3 and 5 are next

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[5]Claims about the relative number of nouns in each class are the result of
a count of several hundred nouns. I used the Tobias and Turvey [1965] diction-
ary.

largest and many loanwords are also assigned to these classes, and so forth.
In some cases semantics may also play a role. Class 1 nouns are always human.
Thus, it is not surprising that loanwords referring to human beings are almost
always assigned to class 1, as shown in (6):

(6) Eng   [pəliys]   [omupolifi]   'police constable'[6]

     Eng   [bɩšəp]   [omumbišopa]   'bishop'

     Eng   [ɩŋglɩš]   [ovaeŋgelisa]   'English people'

     Germ   [bas]   [omubafa]   'bass (singer)'

    Loanwords belonging to the five classes with largest membership are shown
in (7).

(7) Eng   [læmp]   [olampa]   'lamp'   Cl. 4

     Eng   [pɛn]   [opena]   'pen'

     Eng   [fɔɹk]   [efoloka]   'fork'   Cl. 3

     Germ   [hawfə]   [ehawfu]   'dune'

     Afr   [ta:fəl]   [ošitafula]   'table'   Cl. 5

     Eng   [gowld]   [ošiŋgolodo]   'gold'

     Eng   [pəliys]   [omupolifi]   'policeman'   Cl. 1

     Eng   [bɩšəp]   [omumbišopa]   'bishop'

     Eng   [powniy]   [okaponi]   'pony'   Cl. 9

     Eng   [spɚ]   [okašipolo]   'spur'

Although noun class prefixes are the morphological marker of a noun, the pres-
ence of this morphological marker in loanwords seems to be somewhat less impor-
tant than the phonological constraint against consonant-final words, since the
former may be ignored but the latter never is.

    An interesting interaction occurs between the phonological constraint
against certain kinds of consonant clusters and the sound substitution process-
es. Native OshiKwanyama words have a constraint against all clusters except

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[6]Note that this word shows evidence of spelling pronunciation, as o is
never pronounced in the source word. It seems likely that a number of words,
such as the words for 'bishop' and 'Christmas', for example, have been created
using the written form of the word. I suspect that many of these were mission-
ary creations.

consonant plus glide and nasal plus voiced stop. This last is a deep structure
constraint, since it can be violated at the surface: as a result of certain
fast speech rules, nasal clusters may be broadened to include nasal plus any
consonant. I will discuss nasal clusters in more detail later in the paper.
First I will examine the treatment of source language clusters which contain
liquids and clusters made up of obstruents. Neither type of cluster is allowed
in OshiKwanyama either by deep or surface constraints.

4. Cluster Simplification

When clusters containing liquids or obstruents occur in OshiKwanyama borrow-
ings, they are almost always eliminated.   A few of the small number of exam-
ples which have not eliminated such clusters are shown in (8):

(8)   Eng   [blækbɔɹd]   [blækbolda]   'blackboard'
      Eng   [ays kɹiym]   [oayskrima]   'ice cream'

The most common method of cluster simplification is to insert a vowel,[7] as in
the first five examples in (9). Occasionally one of the two consonants is de-
leted, particularly if the cluster was word final in the source language, as in
the last three examples in (9).

(9)   Eng   [faɹm]   [ofalama]   'farm'
      Germ   [kartə]   [okalita]   'map'
      Eng   [kɹɪsməs]   [okilišitimiša]   'Christmas'
      Germ   [brot]   [ombolota]   'bread'
      Afr   [spɛlt]   [ošipela]   'pin'
      Eng   [powst]   [opoša]   'post, mail'
      Afr   [kɔmbərs]   [ošikumbafa]   'blanket'

The examples I have provided show that sounds may or may not be substituted
and that clusters may or may not be simplified (but, of course, whether or not

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[7]Most commonly a copy of the vowel of an adjacent syllable is inserted; see
'farm' and 'bread' in (9). However, between sC clusters the vowel inserted
is always i , giving [šiC] . Byarushengo [1976:82] notes a similar use of
the vowel in breaking up clusters in Haya loanwords. He suggests that i is
used because it is the "closest" vowel in the language. However, in the Oshi-
Kwanyama examples I suspect that a better explanation would be that this is the
most "palatal" vowel and, therefore, most appropriate after [š] .

substitution and simplification take place is merely an indication of the de-
gree to which the loanword has been incorporated into the native lexicon).   How-
ever, note that while unsimplified clusters of consonant plus r and consonant
plus l may occur (as in (8)), simplified clusters, like those in (9), always
contain the substituted l sound.   Thus, while substitution of a native sound
for a foreign sound does not necessarily imply cluster simplification, cluster
simplification does imply sound substitution; consequently, forms such as those
in (10) never occur.

(10)   *[oaysikirima]   *[osikola]

The implication of this is that there must be a hierarchy of loanword incorpora-
tion processes, and sound substitution is previous to—or primary with respect
to—the processes which reflect constraints against consonant clusters.

5.   Nasal Clusters

     Finally, I will discuss the processes which modify nasal clusters.   Some
treatments of borrowing (see Hyman [1970], for example) have suggested that bor-
rowing languages treat source language words as underlying forms and, therefore,
that it is the synchronic phonological rules of the borrowing language which
modify loanwords.   We shall see that this approach is insufficient to handle the
examples about to be duscussed.

     First, look at the distribution of stop consonants in OshiKwanyama, as shown
in (11).

(11)   intervocalically   word initially   after a nasal

         p   yes   yes   no

         t   yes   yes   no

         k   yes   yes   no

         b   yes   no   yes

         d   yes   yes   yes

         g   no   no   yes

In the native system of the language, the voiceless stops are all underlyingly
distinct, since they all contrast in intervocalic position and in initial posi-
tion.   The voiced alveolar stop d is also contrastive in these environments;

however, on occasion it will alternate with l . The bilabial b also is con-
trastive intervocalically, but it is never word-initial and sometimes alter-
nates with v . Finally, the voiced velar stop g is most restricted in its
occurrence: it is found only after [ŋ] . None of the voiceless stops occur
after nasals—only voiced stops may occur in this environment. When nasals and
stops come together as a result of morpheme conjunction, the results are illus-
trated in (12): nasal plus p gives m , nasal plus t gives n , and nasal
plus k gives [ŋ] .

(12)	native root	non-nasal precedes		nasal precedes[8]	
	-pat-	[olupati]	'rib'	[e:mati]	'ribs'
	-pot-	[okupota]	'to be rude'	[omote]	'good-for-nothing'
	-tan-	[okatana]	'little calf'	[onana]	'calf'
	-tuŋgwa-	[okatuŋgwa]	'little basket'	[onuŋgwa]	'basket'
	-kak-	[olukaku]	'shoe'	[e:ŋaku]	'shoes'
	-kwat-	[okukwata]	'to take, seize'	[oŋwate]	'prisoner of war'
	-viŋg-	[oluviŋga]	'horn'	[e:mbiŋga]	'horns'
	-vel-	[okuvela]	'to arrive'	[embedi]	'arrival'
	-ly-	[okulya]	'to eat'	[e:ndya]	'food'
	-lum-	[omulumenu]	'human male'	[ondume]	'male' of Cl. 4 nouns

The sequence mb arises from nasal plus v , and nd comes from nasal plus l .
The sequence ŋg arose historically from nasal plus k although no synchronic
alternations now remain.

   What, then, occurs in loanwords? If the source language word has an initial
voiced stop, normally the loanword is modified in one of two ways (as illustrat-
ed in (13)): either a homorganic nasal is inserted before the voiced stop, as
in 'bet' and 'gold', or else the word is assigned the nasal-final form of the
class 4 prefix. In the latter case the loanwords will, accordingly, have ini-
tial syllables which resemble native words of this class, such as [ombele]
'knife', [ondudu] 'hill', or [oŋgodi] 'rope'.

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   [8]The underlying form of the prefix, in each of these cases, ends in a nasal,
thus, /e:N + pati/ 'ribs', /oN + pote/ 'good-for-nothing', /oN + tana/
'calf', etc.

(13)   Eng   [bɛt]   [mbeta]   'bet, gamble' (verb)

      Eng   [gowld]   [ošiŋgolodo]   'gold'

      Germ   [bibɛl]   [ombibela]   'bible'

      Eng   [dæm]   [ondama]   'dam'

      Eng   [dɔŋkiy]   [ondoŋgi]   'donkey'

    Source language words which contain clusters of nasal plus voiceless stop
are normally modified as well:

(14)   Eng   [stæmp]   [sitamba]   'stamp' (verb)

      Afr   [pɔmp]   [opomba]   'pump'

      Eng   [pɹɪnt]   [pelenda]   'print' (verb)

      Germ   [tɪntə]   [otinda]   'ink'

      Afr   [trɔŋk]   [ondoloŋgo]   'prison'

      Eng   [ɪŋk]   [oiŋga]   'ink'

Note what happens to the (underlined) voiceless stops: they are voiced after
nasals. But note, this modification cannot be the result of applying a synchron-
ic phonological rule. OshiKwanyama has no rule that voices stops after nasals.
Instead the OshiKwanyama rule would *delete* the voiceless stops, as in (12). If
it were the synchronic phonological rule operating here, one would find forms
like *[šitama] or *[oiŋa] , instead of [šitamba] and [oiŋga] . Thus, treat-
ing the source language words as underlying forms predicts an incorrect result;
the actual modification which occurs is the result of an independent loanword in-
corporation process, which is not the same as any synchronic phonological rule.
This loanword incorporation process is derived from the prohibition against na-
sal plus voiceless stop clusters, but since it is a particular positive response
to this negative prohibition, the incorporation process must be considered a dif-
ferent and separate entity from the constraint. The prohibition against nasal
plus voiceless stop could be expressed in a number of different ways, for exam-
ple, vowel insertion between the nasal and the stop; however, the particular
method that OshiKwanyama has chosen (voicing of the stop) is a language-specific
loanword incorporation process. Therefore, it is evident that loanword incorpor-
ation processes need not be identical either to phonological rules or to morpheme
structure constraints.

Note also that, on the surface, nasal plus voiceless stop clusters are, in fact, allowed in OshiKwanyama. Native words have them as a result of certain fast speech rules. Thus, 'tree' may be pronounced [omuti] , [omːti] , [omti] , or even [onti] in increasingly more casual and faster speech. However, the loanwords are modified in spite of this. It seems clear that in this case the loanword incorporation process is derived not from surface structure, as suggested by Shibatani [1973], but as a result of the deep structure constraints. Additional support for this analysis is provided by an article by Kaye and Nykiel [1979], which points out similar effects of deep phonotactic constraints on English-source loanwords in Odawa.

Lastly, consider the data in (15).

(15) Afr   [papiːr]   [ombapila]   'paper, letter'
      Eng   [pɪk]   [ombiki]   'pick-axe'
      Afr   [kɛrk]   [oŋgeleka]   'church'
      Germ   [kamel]   [oŋgamelo]   'camel'
      Afr   [trɔŋk]   [ondoloŋgo]   'prison'

Although OshiKwanyama allows voiceless stops in native words to occur both in stem-initial and word-initial position, nevertheless a small number of loanwords with initial p , t , or k undergo the modification illustrated above; the word in each case is assigned the oN-form (rather than the o-form) of the class 4 prefix, even though initial op , ot , or ok are perfectly allowable sequences. However, there are no sequences of these sounds in this particular class of nouns. Thus, it is possible to find words like the adverb [opo] 'here', the pronoun [otwa] 'we', or the noun [okakadona] 'girl' (class 9), but no such sequences occur in the native nouns of class 4 because of the rule illustrated in (12), which gives m from nasal plus p , n from nasal plus t , and [ŋ] from nasal plus k . However, these initial voiceless stops could have been retained without inserting a preceding nasal if the words had been assigned to class 3 or class 5, both of which allow stem-initial voiceless stops (see, for example, 'table' in (7)). Furthermore, class 4 has no single, coherent semantic characterization; thus, the loanwords certainly did not have to be assigned to class 4 because of their meaning.

It would appear that these words were merely assigned to class 4 because this

is the class that most loanwords are assigned to; however, once in class 4, a class-specific constraint against stem-initial voiceless stops gave rise to the use of the ƆN- form of the prefix. Note that this constraint must be of very low priority because, in fact, the majority of loanwords in this class with stem-initial voiceless stops were not assigned a nasal form of the prefix (see 'pen' in (7)). However, once the ƆN- prefix form was assigned, the incorporation process illustrated in (14) then came into effect and voiced all of these post-nasal voiceless stops.

6. Conclusion

Four conclusions obtain from these OshiKwanyama data. First, the evidence shown in section 4 leads to the conclusion that there is a hierarchy of loanword incorporation processes in OshiKwanyama: the constraint against consonant-final words gives rise to the most important loanword incorporation process—the one which adds final vowels to all loanwords. Next the process which substitutes sounds applies, and lastly, the processes which derive from constraints against clusters, such as vowel insertion and consonant deletion, will apply.

Second, as exemplified in (14), loanword incorporation processes in Oshi-Kwanyama are not necessarily the same as the synchronic phonological rules of the language nor are they identical to the morpheme or word structure constraints; however, the incorporation processes may certainly be (indirectly) derived from these constraints. Note that these conclusions are further supported by my work on borrowing in TshiLuba and Latvian (see Steinbergs [1981, 1982]).

Third, there are incorporation processes in OshiKwanyama which derive not from the surface structure (as Shibatani [1973] suggests), but rather from the deep structure constraints. This conclusion is further supported by the work of Kaye and Nykiel [1979].

Finally, as exemplified in (15), OshiKwanyama has a loanword incorporation process that derives from a constraint which does not even hold across the phonology of the language, but which is specific only to a particular class of nouns.

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