THE ACQUISITION OF A NOUN CLASSIFICATION SYSTEM
by a language

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1. INTRODUCTION

The semantic category of shape is grammatically encoded in many languages of the world. In Tarascan, a language spoken in southwestern Mexico, there are for instance three numeral classifiers and a number of classificatory verbs which reflect the shape of the object in question. It is not my intention here to review the literature on this subject (for this see Friedrich 1970); instead, I would like to address myself to the question of some verbal prefixes in Waris, a Papuan language, which have been said to be particles that classify objects according to shape (Brown 1981).[1]

Waris is a Papuan language spoken in the West Sepik Province of Papua New Guinea and also in some parts across the border in Irian Jaya. It has been classified as a Trans-New Guinea Phylum language and is part of the Waris family of languages, which includes a few other languages spoken in the same area (Laycock 1973:46). Until recently nothing of any detail had been published on any of the Waris languages. In an article published in 1981 Brown discussed some aspects of the Waris language among which was what he called shape classifiers. By this term Brown referred to a set of fifteen verbal prefixes that are affixed to certain verbs and classify the preceding objects according to shape. Here are some of his examples:

(1)   nenas   ka-m   li-ra -ho -o

      pineapple I-Dat *class-get*-ben-imp

      'Give me a pineapple'

Another item that takes the classifier li- is *corn*.

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(2) sa   ka-m   put-ra -ho -o
     coconut I-dat class-*get*-ben-imp
     'Give me a coconut'

Brown mentions that most of these classifiers seem to be related
to some verb, in the case of put- to the verb meaning 'pick a hanging
object', but the fact that an introduced item like 'ball' also takes
this classifier, makes it clear that we do not have a case of verb
serialization.

(3) bola ka-m   put-ra -ho -o
     ball I-dat class-*get*-ben-imp
     'Give me a ball'

This example is Brown's main evidence for his hypothesis that we
are dealing here with shape classifying verbal prefixes. Other examples
however call this analysis into question:

(4) valngwo/sumb   ka-m   ev-ra -ho -o
     bow/water container I-dat-class-*get*-ben-imp
     'Give me a bow/water container'

These two artefacts are totally different in shape and so the
least we have to say is that there is no one to one correspondence
between shape and classifier. Let us look at one more example:

(5) ka-m   ivlol   vela-ra -ho -o
     I-dat- *breadfruit section* class-*get*-ben-imp
     'Give me a section of breadfruit'

Other items which require the classifier vela- are coins, shotgun
shells and taro, all of which are in a container at one stage, i.e.
purse or pocket, carton or ground. Here again the items taking this
particular classifier can hardly be said to be of similar shape. As in
the case of the other classifiers we find vela- to be related to a
verb, in this case 'remove from'. So we might well assume that the
above example could be paraphrased as 'remove x and give it to me'.
However, as Brown notes, the classifier must still be used even after
the item has been removed from its container.

The above examples should, I think, suffice to show that we do not have a straightforward case of shape classifying verbal prefixes in Waris, although there is some evidence in favour of this hypothesis (example (3)). We have also seen that we do not have a case of verb serialization, although most of the classifiers seem to be related to verbs. So, what is the nature and function of these classifiers? Before going into a detailed discussion of the various points raised above and thereby turning to my own data, I would like to say a few words on the use of the classifiers. What sort of verbs take the classifiers? Brown says, "The question of what predications in Waris must or may have shape prefixes attached to them is not clear. They now seem to be most prominent, probably obligatory, in contexts of harvesting and handling, and also of existing." (Brown 1981:100). From my data it appears that, with the exception of 'existing' we find the classifiers exclusively prefixed to (synchronically) transitive verbs that affect the location of the object in question, such as 'carry', 'get', 'bring', 'throw away', 'eat'... The fact that verbs like 'see' never take the classifiers is revealing with respect to their origin, as we shall later see.

2. ANALYSIS OF THE VERBAL PREFIXES IN IMONDA

My own data have been collected at Imonda, a village said to speak a very distinct dialect of Waris (Laycock 1973:46). Although it does not affect the following argument, it is fair to say that, given the lexical and structural differences between Waris and Imonda and the absence of mutual intelligibility between the two, the latter should be given the status of an independent language. However, with respect to the verbal prefixes, Imonda and Waris behave the same and it is assumed that the following remarks apply to Waris as well. First of all here is a partial list of the prefixes in Imonda; they are listed prefixed to the verb 'give', whereby nothing is said for the time being about the internal structure of the latter. I will also give some indication of the type of object which collocate with the

prefixes. Furthermore, whenever possible, the verb that seems to be closely associated with the prefix will also be given (-f=present tense):

1)	agaf-aihf	*firewood, netbag*	afaɔfef=*tie together*
2)	as-aihf	*heavy objects*	?
3)	b-aihf	*single banana*	?
4)	bas-aihf	*netbag*	?
5)	blaf-aihf	*something bad*	blafɔf=*to be bad*
6)	ef-aihf	*cup, spear*	efe'f=*to manufacture*
7)	es-aihf	*spinach, Gnetum*	esf=*to deal out*
8)	f-aihf	*tobacco, radio*	?
9)	fe't-aihf	*cooked food*	fe'tf=*remove from fire*
10)	g-aihf	*firewood, book*	?
11)	gwas-aihf	*netbag, saucepan*	?
12)	h-aihf	*axe handle*	hef=*chop down trees*
13)	ij-aihf	*water*	if=*scoop out water*
14)	kaft-aihf	*Gnetum*	kaftaf=*tie up*
15)	kul-aihf	*rope*	kulɔf=*coil up*
16)	l-aihf	*leaves*	lesf=*pile up leaves*
17)	laul-aihf	*axe*	?
18)	logw-aihf	*beer, coke*	logwe'f=*fill in*
19)	ne'f-aihf	*axe handle*	ne'fef=*sharpen*
20)	nis-aihf	*tobacco*	nisf=*tie up in the middle*
21)	pwi-aihf	*coconut*	pwiwalf=*break in two*
22)	pwis-aihf	*piece of pig*	pwisf=*cut*
23)	pɔt-aihf	*coconut*	pɔtf=*pick hanging fruit*
24)	pul-aihf	*grass skirt*	pulif=*take off (skirt)*
25)	t-aihf	*sugar cane*	tɔf=*cut*
26)	w-aihf	*fish, insect*	?

The above list could be considerably extended; so far I have encountered about sixty classifiers, but it is likely that further research would lead to even more of these verbal prefixes. The same prefixes are also used, as mentioned, with verbs such as 'carry', 'put' and the like:

(6) pwis-wagl-f

pref-*go* -pres

'*Carry away from the speaker*' (see 23 above)

In the above example we see that wagl on its own does not mean 'carry', but is an intransitive verb meaning 'go'; so, pwiswaglf could well mean 'cut something and go', but the fact is that even after the cutting is completed one still has to use the same form. In fact pwiswaglf only means carry and nothing else. The same remarks apply to the next example:

(7) pwis-ne-f

pref-*eat*-pres

'*to eat*'

Here again no cutting is involved, the meaning being simply 'to eat'. The function of the prefix pwis- seems to be a delimitation of the range of objects, but it is not shape which is the crucial factor. Rather, the important criterion for an object to take the prefix pwis- seems to be its having been cut at one stage. So, whatever part of a pig one eats/carries/brings, it must have been cut off from the main body first. On the other hand, the shape of this piece is completely unimportant. If this is so then it would appear that what is now the prefix pwis-started out as a full verb in a serial construction but later lost its verbiness despite its still being highly transparent. Here is one more example which is exactly parallel:

(8) if   ka-m   fe't-aih-u

 breadfruit I-O   pref-*give*+rec-imp

 '*Give me a section of breadfruit*' (see above, example 9)

  (The internal structure of -aih will be looked at later)

All kinds of food that are cooked on fire take the same prefix
fe't-, the shape of the food items being of no importance whatsoever,
and as seen above there is an independent verb fe't, which means
'remove from fire'. But again it must be stressed that the above
sentence does not mean 'remove + give', but only 'give'. As in the
case of pwis-, fe't- must have started out as a full verb taking part
in serial constructions where it then lost its verbal status despite
the fact that it can still be used as an independent verb.

There are many more elements like fe't- and pwis- (see list above)
which are exactly parallel in that they are transparently related to
some verb. That these elements are indeed classificatory prefixes may
become clearer when we look at those cases that have no related verb,
such as number 8 or 10 in the above list. The classifiers f- and g-
are just triggered by the appropriate object and have no meaning what-
soever apart from that.

Viewing the verbal prefixes in Imonda/Waris as being former verbs
reanalyzed as classifiers also accounts for their distribution. They
simply occur where an original serial construction would have made
sense:
- remove from fire and give
- remove from fire and carry
- remove from fire and eat

but not:
*remove from fire and like
*remove from fire and see

Note that the prefixes are not used with the verbs from which
they are derived, which is what is expected given the proposed origin
of these prefix+verb constructions,e.g.:
- muglɔl pwisf (*muglɔl pwis-pwisf) *cut off a leg*

Quite generally the prefixes are not used with verbs that denote activities which have to be performed before an item can be given/put/ carried...

- udƆpwegf (≠us" bas-pwegf) *'make a netbag'*
- ahwe'b posf *'dig out sweet potatoes'* [2]

3. RISE OF THE NOUN CLASS SYSTEM

In this section I would like to say a few words on how such a reinterpretation of originally full verbs as noun class markers can come about. That serial verbs are susceptible to reanalysis is well known; by way of comparison let us look at some other examples.

3.1 FROM SERIAL VERB TO PREPOSITION OR BENEFACTIVE MARKER

In African linguistics there has been a lengthy debate about how serial verb construction are best interpreted synchronically (see Givón 1975 for a discussion of this case and for further references). Let us look at two Yoruba examples:

(9) mo   mu'   iwe'   wa'   fu'n o,

    I   took   book   came   gave you

    'I brought the book for you'   (Givón 1975:83)

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2   There are a few cases that are hard to account for under the assumption that the classificatory system is derived for verb serialization.

    as-aihf = *'give something big'* (as- only occurs as classifier)
    blaf-aihf = *'give something bad'* (blaf"f = *'be bad'*; blaful = *'bad'*)

    The origin of these two constructions is far from clear. Granting the existence of an earlier independent unprefixed verb 'give' we could hypothesize that some adjectives preceding verbs were re-analyzed as classifiers once the system was established. [(Noun) - Adjective - give/put > Noun - class+Verb]. This is an area that needs further investigation.

(10) mo so,   fu'n o,

I said   gave you

'I said to you'   (Givón 1975:83)

In the first case (9) the element fu'n could still be interpreted
literally as a full verb, whereas in the second example (10) this is
impossible. After stating the case for a reanalysis of originally full
verbs as prepositions in Niger-Congo languages, Givón takes up the
question of how such a change may be expected to happen; this we will
discuss presently.

In South-East Asian languages the same phenomenon is found. Here are
two examples from Vietnamese:

(11) Lan chay vào   vuờn

run (go) into garden

'Lan ran into the garden'   (Clark 1978:110)

(12) Lan nhìn vào cửa-sổ

look   window

'Lan looked into the window'   (Clark 1978:111)

The element vao in example (11) could be regarded as verb yielding the
translation 'Lan ran, entering the garden'. This is however impossible
in (12); here vao has to be interpreted as a preposition.

In Papuan languages too, we find reinterpreted serial verbs. In
many languages the verb 'give' functions as benefactive marker. In
Abelam, a member of the Ndu language family, we find kway, which can
occur as an independent verb 'give' in the following example:

(13) yate'-kway-kaa-wte'-kwaa

carry Ben fut 1st non-past

'I will carry (it) for you' (Laycock 1965:55)

There are two ways of viewing the Abelam case; either we state
that there is a benefactive marker that is phonetically identical with
the verb 'give' and occupies the same slot as the latter would in
serial constructions, or we do not keep the two forms apart and regard
examples such as (9) as extension of the meaning of 'give'. The

situation in Awtuw, a member of the Ram family, is analogous:

(14) wan-e yiyte ka -lowpa-kow-nem!

     lsg-O gate   IMP-open -BEN-PL

     'Open the gate for me!'

(15) Awtiy-re tey aeye rokra-kow-ka

     Awtiy-O 3fs food cook -BEN-PF

     'She's cooked food for Awtiy'

The Ben marker kow occurs as independent verb 'give', but the meaning
of 'give' need not be present in (15) and is certainly absent in (14).
(Examples (14) and (15) are from H. Feldman, pers.comm.) Whether we
call cases such as Abelam or Awtuw instances of extension or reanalysis
is a matter of terminology.

Now, how is it possible for such reanalyses to happen? Givón
takes up this question and lists three criteria of which I would like
to mention two.

A) Semantic criteria

"The shift from verb to preposition usually involves the
depletion of some semantic material out of the erstwhile verb."
(Givón 1975:82)

It seems rather obvious that for a reanalysis of a verb as a
preposition to be possible the full verbal meaning of the preposition-
to-be must weaken and eventually disappear altogether. The question
is not that a reanalysis takes place but rather how and why it can
take place. Givón's second criterion seems to be more pertinent to
this question:

B) Morphological criteria

"One of the first things that may happen to erstwhile serial
verbs, as suggested in Li and Thompson (1973) and Pike (1970) is loss
of the ability to take normal verb affixes, such as modalities, sub-
ject agreement or object pronouns. This process is obviously gradual,
so that a verb may lose its ability to take some affixes but not all
at the same time." (Givón 1975:84)

If such morpholological limitations of the sort described above occur, the verbal status of the elements in question is undoubtedly weakened and a gradual semantic reinterpretation may take place. This process would be furthered if the former full verb were to disappear altogether, as an independent verb, from the language.

In Imonda serial constructions, only the last verb can take affixes, the exception being that of number cross-reference markers. This is not the place to go into any details of this aspect of Imonda grammar. I will mention only one case: object agreement markers are suffixed to the verb stem; in the prefix+verb constructions we find that these markers still recall the former verbal status of the prefixes, as they are still suffixed to the latter:

(16) ud ɔ   ka-m   bas-aíh-u
      netbag   I-dat pref-*give*+rec-imp
      'Give me a netbag'

(17) ud ɔ   ka-m   bas-abt -aíh-u
      netbag I-dat-pref-dual-*give*+rec-imp
      'Give me two netbags'

(18) ud ɔ   ka-m   bas-ab-aíh-u
      netbag I-dat   pref-pl-*give*+rec-imp
      'Give me 3+ netbags'

Synchronically these object number affixes constitute something of an anomaly as they have now become prefixes. Moreover they only occur in prefix+verb constructions - for all other cases different agreement markers are used. This may have contributed to the obscuring of the original verb (see below 3.3.)

It seems that morphological limitation does not contribute much to an understanding of the situation in Imonda. The first verb in serial constructions can only take number affixes and so cannot become restricted very much in this respect. There are however a variety of other factors which contributed to the reanalysis of the former verbs as prefixes. To an examination of these factors we will now turn.

3.2 THE STATUS OF THE SECOND VERB IN THE COMPOUND

If we look at the various verbs that occupy the second slot in
the original serial construction we can discern several categories.
First there are those that occur as independent verbs with the same
meaning. Second, there are those that also occur independently but
their meaning is (synchronically) different without the classifiers,
and third, there are those that do not occur independently. Within
this last category there are some verbs that are phonologically very
reduced. Let us look at some examples from these different categories.
3.2.1 Ne 'eat' is an example for this category. On its own it can
take a wide variety of objects. In fact it is not clear what objects,
if any, can not take the unprefixed verb form. Here are some examples
of the prefixes attached to ne:

(19) watei   fa-ne - f
      betel class-*eat*-pres
      'to eat betel nut'

(20) waw ɔ   we-ne - f
      frog class-*eat*-pres
      'to eat a frog'

(21) if   fe't-ne -f
      breadfruit class-*eat*-pres
      'to eat breadfruit'

3.2.2 Verbs such as wagl 'go' and pia 'come' belong to this category.
These are "the most favored verbs for serializing constructions"
(Foley and Olson, to appear:32) and, as in many other languages, they
take part in serialization in Imonda/Waris in constructions such as
'take out of the fire and go'. Synchronically however, these verbs
have to be interpreted as transitive verbs 'carry' and 'bring', when
they occur with the classifiers.

3.2.3 Many verbs that take classifiers never occur independently.
One example is (e-)ha *'put'*.

(22) sapoh   fai-ha -f
      tobacco class-put-pres
      'to put tobacco (over there)'

(23) fo   bai-ha -f
      banana class-put-pres
      'to put a banana (over there)'

(24) ihu   pɔt-eha-f
      mango class-put-pres
      'to put mango (over there)'

I have shown the equivalent for 'put' as (e-)ha. Nowhere in the
language does ehaf or haf appear as a full verb. It seems that the
original verb was ehaf and that whenever the prefix-verb ended in a
vowel, some fusion took place between this vowel and the initial
vowel of ehaf, e.g. fa+ehaf=faihaf; as these phonological variations
are of no importance to the present discussion I have nothing more to
say about them. 'Put' is at the second stage of the continuum inter-
mediate between independent verbs like ne, and verbs that can disappear
altogether. Before the rise of the noun classification system there
must have been an independent verb 'put' in Imonda. Somewhere along
the way of reanalysis it lost this status and thus its meaning became
opaque. The meaning 'put' now began to be felt by native speakers to
be carried by the whole compound, i.e. the verbal complex ceased to
be perceived as a case of serialization. At the same time the alter-
nations at the beginning of what was now felt to be a simple verb were
reinterpreted as having the function of delimiting the range of
objects. The case of 'put' by no means stands alone. A further
obscuring of the verbal status can be seen in the case of 'give',
which is full of irregularities. As this is one of the most frequently
occurring and therefore most important verbs in Imonda, I will discuss
it in some detail.

We have already seen many examples involving 'give', so it is not necessary to repeat them here. As in the last example there is no independent verb 'give' which does not carry a prefix. In this respect Imonda might be different from Waris although it is not clear from Brown's article whether the element ra, which he glosses as 'get' (see above) can be used independently, i.e. without prefixes. In Imonda there is in fact very little evidence left of a former full verb. In earlier examples involving this verb I avoided the question of the internal structure of the element -aíh. I simply glossed it as 'give + recipient'. A separation of these two elements is in fact only just still possible. Here is the paradigm of this·verb using the form faíhf:

	Sb=Sg	Sb=Pl
Ob=Sg	f-aí-h-f	f-a'í-h-f
Ob=Dl	j-abt-aí-h f	j-abt-a'í-h-f
Ob=Pl	j-ab-aí-h-f	j-ab-a'í-h-f

f-/j- :classifier

abt:Ob=Dl

ab:Ob=Pl

h:Rec=Sg

ai:give (Sb=Sg)

a'i:give(Sb=Pl)

(note the irregular change of prefix f->j- where the object is non-singular.)

Note: Imonda distinguishes Sg, Dl and Pl for Sb and Ob, whereas in the Ben/Rec we only find the distinction of Sg vs. Pl. I have not given the Sb Dual forms as they are straightforward and are obtained by prefixing e- to the Sg form. The above table gives the forms for rec=Sg; here are the corresponding forms for rec=Pl:

	Sb=Sg	Sb=Pl
Ob=Sg	f-aí-f	f-a'í-f
Ob=Dl	j-abt-íf	j-abt-íf
Ob=Pl	j-o'bw-íf	j-o'bw-íf

(All of the above forms are present tense)

On the basis of the above forms we can say that of the element
-aíh the diphthong seems to have been the stem of the verb 'give',
as this is the element which changes (is raised to -a'í-) when the
subject is pluralized. On the other hand presence vs. absence of the
velar fricative h signals the number of the recipient (i.e. Sg vs.
Pl). However, it is impossible to separate 'give' from rec where the
object is non-singular and rec is plural. In this case the element í
is all that is left. Worse still, the case of faíhf is exceptional
in so far as there is a morphological distinction between Sb plural
and Sb singular where the recipient is plural and the object singular,
i.e. faíf vs. fa'íf. For all other prefixes this distinction is
absent; so for instance, we would have the following paradigm for bas-
aíhf, Rec being Pl:

	Sb=Sg	Sb=Pl
Ob=Sg	bas-íf	bas-íf
Ob=Dl	bas-abt-íf	bas-abt-íf
Ob=Pl	bas-o'bw-íf	bas-o'bw-íf

We see that in this case all that is left to indicate 'give' and
rec is the element í. It is not surprising then that what presumably
had been a full verb originally, ceased to be perceived as such after
it had become completely opaque. What seems to have happened is that,
as in the case of 'put', the meaning of the original second verb, i.e.
'give', began to be carried by the whole verbal complex and again the
alternations at the beginning were reinterpreted as elements clas-
sifying the objects. The case of 'give' has been discussed in some
detail because it is a very important and frequent verb and its
phonetic reduction and irregularities may very well have contributed

to the reanalysis of serial constructions it took part in.

The process of phonetic reduction is taken to the extreme in the case of -ia 'get':

(25) lampu stua-ja -nei   f-ia -u
      lamp store-loc-source class-*get*-imp
      'get a lamp from the store'

(26) sa   jɛf-ja -nei   pɔt-ai -u
      coconut house-loc-source class-*get*-imp
      'get a coconut from the house'

The element that at one stage must have been an independent verb is reduced to zero in some forms such as in past tense:

(27) agwɔ   ah-ja-nei   g-abt-n?
      woman Q-loc-source class-dual-past
      'where did you get these two women from?'

To finish off this section here is a summary of what I have said so far. There can be no doubt that the class+verb constructions had originally started out as verb serializations. There is no way we can analyze the related verbs as being derived from the classifiers (Brown 1981:99) as the range of objects a verb can take is entirely determined by the meaning of the original full verb and not by con-siderations of shape. The second verb in the original serialization provides the current meaning of the class+verb construction. Some of these verbs still occur independently. Others are only found with the classifying prefixes. Some frequent verbs such as 'give' or 'get' are phonologically very reduced. This may well have obscured their verbal status and thus facilitated reanalysis.

3.3 THE STATUS OF THE FIRST VERB IN THE COMPOUND

We have seen above that many of the elements which on a
synchronic basis must be analysed as object-classifying verbal prefixes
are closely related to fully independent verbs. A great many of these
prefixes have exactly the same phonological form as the related verb:

(28) watei   ka-m   tit-ai   -h -u
      betel nut I-O class-give-rec-imp
      'Give me areca nut'

The classifier tit- is derived from the verb tit 'get areca nut'
from the tree'. The verb tit is very specific in meaning and can only
refer to areca nut and so verbs prefixed by tit- have a class member-
ship of one. This, incidentally, is just another clear argument
against analysing the prefixes as shape classifiers. Whereas the
relation between the prefix and the corresponding verb is abundantly
clear in the vast majority, this is not so in the case of some verbs
which, significantly, occur frequently. Here are the most important
ones:

(29) flaui ka-m   f-ai -h -u
      axe   I-O class-give-rec-imp
      'Give me the axe'

(30) jahaf ka-m   l-ai   -h   -u
      Gnetum I-O class-give-rec-imp
      'Give me some Gnetum leaves'

(31) sa   ka-m   pwi-ai -h -u
      coconut I-O class-give-rec-imp
      'Give me the coconut'

(32) tɔbtɔ   ka-m   w-ai   h -u
      fish   I-O class-give-rec-imp
      'Give me the fish'

(33) po   ka-m i(j)-ai -h -u
      water I-O   class-give-rec-imp
      'Give me some water'

(34) te'h   ka-m   t-ai -h -u

       firewood I-O   class-*give*-rec-imp

       'Give me firewood'

(35) sue   ka-m   g-ai -h -u

       fire I-O   class-*give*-rec-imp

       'Give me fire'

(36) poi   ka-m   s-ai -h -u

       pitpit I-O class-*give*-rec-imp

       'Give me pitpit (saccharum)'

Some of the above classifiers can still be related to verbs but are very much reduced phonologically and native speakers do not perceive any connection between the two. Taking them one by one, the following comments apply:

(30) 1-: This classifier collocates with greens, i.e. leaves. It seems to be derived from the verb les 'put on top on each other'. Interestingly, the introduced item 'book' can take this classifier too.

(31) pwi-: Pwi seems to be related to the verb pwiwal 'break in two'. The range of objects is defined accordingly, i.e., whether they are normally broken or not. The introduced item 'biscuit' is subsumed under this category.

(32) w-: In this case I was unable to find a related verb. The objects that go with w- are small animals such as fish and frogs. So, presumably, this verb (now having dropped out of use?) must have meant something like 'capture' or 'kill'.

(33) i(j)-: There is a related verb i 'scoop water out'. This does not, however, refer to the ordinary fetching of drinking water, but rather to the specific case of scooping water out of an area dammed up for the purpose of collecting fish. So the semantic link between the classifier and the verb is rather obscured to the native speaker.

(34) t-: There is the verb tɔ 'break' and the range of objects
accordingly consists of breakable objects. But again the verb has
been reduced to a single consonant, thereby obscuring its origin.

(36) s-: The related verb here is se 'remove from ground'; the same
remarks are in order as above.

(29)/(35) f- + g-: These two classifiers are by far the most
frequently occurring ones. There is no hope of finding verbs from
which they might have been derived, given the disparate sort of
objects they collocate with. Often, and particularly so in the case
of f-, these classifiers can replace others. It is therefore not
surprising to learn that the vast majority of introduced items can
co-occur with these two; more about this in the next section.

The foregoing discussion has shown that some of the most fre-
quently used classifiers either do not have any related verb at all
(any more), or else the link to these verbs is obscured through
phonological reduction. These circumstances again furthered reinter-
pretation of the verbs as prefixes.

The last two sections have provided some explanation (and
speculation) as to how this possibly unique type of reanalysis of
serial verbs could come about. Now, given this classificatory system,
it is revealing to examine how the language integrates loan items.

4. TREATMENT OF LOANWORDS

In the previous sections of this paper I have described the
prefix+verb construction in Imonda and have argued the case for
reinterpretation of former serial verb sequences as noun classifying
prefix plus verb. I have pointed out that the first serial verb has
lost its verbiness altogether and is now regarded as a delimiter of
the sort of object that the (now simple) verb can take. Of this we
can be certain on the basis of the evidence presented above. However
additional valuable evidence is gained from looking at the way in
which Imonda accommodates loanwords. Like many other languages it
had to absorb a vast amount of new vocabulary with the beginning of

contact with European culture. Which particular prefix would a loan-word be associated with? Two possibilities can be envisaged. On the one hand it would be conceivable that all introduced items take one of the two semantically least marked prefixes, i.e. f- or g-. On the other hand the new objects might be thought to be similar in either shape or use to some traditional one and would consequently take the same prefix. Both these strategies are in fact widely used as we will now see.

4.1 USE OF F-/G- CLASSIFIERS

Most of the introduced items can occur with either f- or g-, f-being more widely used. However there are some which do not:

(37) kopwi ka-m i(j)-ai -h -u
coffee I-O class-*give*-rec-imp
'*Give me coffee (liquid)*'

The use of f-aihu or g-aihu would render the above sentence ungram-matical. Although it has not been tested thoroughly, it is my impres-sion that only a few loan words can not take one or the other of these semantically unmarked prefixes. Sometimes an informant would hesitate and would not be at all sure whether a given construction was accep-table or not:

(38) ? bia ka-m g-ai -h -u
beer I-O class-*give*-rec-imp
'*Give me some beer*'

·It appears that in this example the prefix logw-, related to the verb 'fill in', is preferred. With respect to the reanalysis problem, those cases where a loanword triggers a more specific classifier are more revealing.

4.2   SELECTION OF CLASSIFIERS ON THE BASIS OF SHAPE AND USE

At the beginning of this paper we saw the Waris example presented
by Brown of the item 'ball' taking the same prefix as 'coconut', this
despite the fact that p'¹t- is transparently related to a verb meaning
'pick a hanging fruit'.   This example was Brown's main evidence in
favour of treating the prefixes as shape classifiers.   We have seen
that this analysis cannot be upheld.   What this and other examples
show is that native speakers try and find a common factor of all
objects that take the same classifier, now that the latter's source
verb has been semantically depleted.   Here is another example:

(39)   we/ban   ka-m   kul-ai -h -u
       rope/belt   I-O   class-*give*-rec-imp
       'Give me the rope/belt'

The verb associated with the classifier kul- is kul" (coil up).   This
is another clear instance of shape-based prefix choice.

We have already seen another case of shape-based choice of prefix,
namely that of 'book' which was classified together with 'greens' due
to its having many leaves, i.e. pages, put on top of another.   Often
one cannot decide whether it is shape or use which was the basis of
the choice.   So for instance, introduced containers usually take the
same prefixes as those of traditional origin.   A typical example of
use-based choice is the classification of shotgun along with the
traditional bow.   In some cases it is neither shape nor use which is
important but rather some other common feature.   This was demonstrated
by one of Brown's examples (5).

We have seen that there is a variety of strategies to deal with
the problem of accommodating a large influx of new nouns into the noun
classification system.   Sometimes different prefixes are possible for
one and the same noun according to different criteria applied.   As
the time of contact with European culture dates back no further than
World War 2, the process of 'prefix choosing' is still going on and it
will be interesting to see the outcome of the battle between the

varying strategies. It seems that the main struggle is between shape/
used-based classification and the semantically neutral f-/g- prefixes.
Should the latter 'carry the day' it could have far reaching con-
sequences for the whole of the noun classification system. It could
effectuate a reduction of the number of prefixes and therefore of
noun classes under the pressure of a large number of nouns which take
one of these two prefixes. It appears that this process has already
started independent of the loan words, as many traditional items can
take one of the two unmarked prefixes in addition to their more
specific one.

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ON THE KUMAN "LIQUIDS"

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Highlands languages are well-known for the complexity of their "liquid" phonemes. Kuman, spoken by about sixty thousand people in the northern half of the Simbu Province, is no exception. Although the number of liquid phonemes in Kuman is fewer than in some languages to the west, alternations between them make the issue somewhat more complex. This paper examines these alternations, and attempts to make some historical statements on the Kuman liquids.[1]

1. PHONOLOGICAL AND GRAMMATICAL BACKGROUND

In this section, I give the necessary phonological and grammatical background which allows the discussion of the liquid alternations to proceed without unnecessary explanatory interruptions.

1.1 SEGMENTAL PHONOLOGY

Kuman has been analysed in the past (e.g., Trefry 1969, Nilles 1969) as having fourteen consonant and five vowel phonemes. The vowel phonemes /i e a o u/ are canonically lax [ɪ ɛ ɑ ɔ ʊ]. The consonant phonemes established by Trefry (1969) are shown below in Table 1. A general discussion of the allophones of the consonant phonemes is not relevant here. However, two phonemes require very brief mention: /gl/ is voiceless [kɬ] finally and before a voiceless consonant, and voiced [gl] elsewhere; while /n/ has a syllabic allophone [n̩] word-finally after a consonant, or word-medially between two consonants.

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[1]   Kuman belongs to the Central Family of the East New Guinea Highlands Stock (Wurm 1975). This paper is based partly on the work of Nilles (1969) and Trefry (1969), and partly on a short period of fieldwork in Kond village (a few kilometres west of Kundiawa) and work with Kuman-speakers in Port Moresby.