Which form predicts all others best? Variations on the Amharic verb "theme"

1. The Productivity of the Verb Root

Amharic verb roots provide large numbers of verbal derivations, and in addition, they predict the meaning of many nominal entries of the lexicon. Even though the "system of roots and patterns is not as widespread and productive in Amharic as in some other languages of the Semitic family" - it still is true that in Amharic sentences and in the lexicon "verb forms tend to predominate".[1] The verb is the language.

A survey of a few dictionary pages will confirm that most entries can either be traced back to verbs, or they are themselves verbs. In a random selection taken from an Amharic dictionary, this is true for 75 to 80 percent of the entries.[2] Experiments have also shown that an exhaustive verb list is a workable substitute for a complete dictionary.[3] In this sense, the verb represents the language.

The question here is, which of the various verb forms represents the verb. In Semitic studies, the "theme" or the "perfect" (more exactly: the 3rd person singular masculine perfect) is established as **the principal part.** In Amharic, it is from such "themes" as **säbbärä, fällägä etc.** that all variations (tenses, aspects, moods) will be derived.

But is this "theme" the optimum? Questions of this kind have been considered in various studies, starting with Armbruster (1910) and Cohen (1936). Among the more recent works there are the studies of Obolensky et al. 1964, Bender and Fulass 1978, and Richter 1987. The verb morphology of Bender and Fulass (to be abbreviated as "BF") offers the advantage that it is exhaustive and explicit.[4] The present investigation proceeds from the findings of BF - with a view to application and language acquisition.

2. Three Forms to Start from

"Principal parts" - such as English **go, went, gone** or French **aller, j'irai,** etc. - are those verb forms which predict all others. In Amharic, most verbs are so regular that there is no need for more than one "principal part". With the exception of about one dozen (BF pp.67-69), for Amharic verbs one single form will do. The question is: which form?

As candidates for the "best Amharic principal part", three options will be investigated:

(a) the **"base form"** like **"flg B"** (often called **"root"**, as in Cowley et al. 1976: 83)
(b) the **"theme"** or **"perfect"** (3rd ps. sg. m.) like **säbbär-ä**, and
(c) the **"infinitive"** or **"verbal noun"** like **mä-sbär**

These different options (a), (b) and (c) will be compared with each other with respect to their "usefulness" for the language learner. Rules will be presented which start from each one of these alternatives (a, b, or c), to generate all other forms. The rules are strictly formalized - strictly enough to satisfy a computer; but they will also be given in common language - common enough to satisfy a language learner.

3. The Programmes Used in this Study

The impact of every rule can be observed when a computer programme applies the rule to generate the different "tenses" for each of BF's 42 different verb classes: **perfect, infinitive, jussive, imperative, gerund,** and **contingent (imperfect)**. The programmes are short and transparent enough so that their workings can be inspected directly; they should be legible also for readers who are not familiar with programming. Every computer with a common version of the language "Basic" will accept these programmes.[5]

3.1 The rules

Concerning the rules, the following remarks seem appropriate:

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[1] Cowley et al. 1976: 82-83
[2] Leslau 1973, pp. 100, 200 and 300.
[3] Bender and Fulass, for instance, have attempted to produce an exhaustive list of all contempary Amharic verbs (1978: 107-129). This list of 1280 "Base forms" would fit on two or three sheets of paper - but it produces several thousand derivations.
[4] Bender and Fulass provide all derivations as explicit sets of rules. The disadvantage of their study - from the perspective of the language learner - is of course the technical and abstract nature of their presentation.
[5] Some strings may have to be renamed in order to be acceptable in compressed versions of "basic". E.g., the string "SUFFIX$" may be have to be renamed as "SUFF$". The programmes can be made available in Basic or Pascal.

The rules of the present study differ considerably from those of BF, because they are written from a different perspective. In BF, all forms are generated from the "root" or "base form", step by step (BF 41-71).

In the present study, all forms are generated afresh for each of the three different kinds of input; every form is generated directly (a) from BF's "base form" or "root", (b) from the "theme" or "perfect", and (c) from the "infinitive".

The programmes of this study consist of parts which are linguistically interesting and others which are not. Those lines which show morphological and phonological rules will be discussed in sections 4 to 6. Those lines which deal with technicalities, with affixes, and with the phonological surface, will largely be ignored.

Rule ordering has turned out to be critical only in a few cases - e.g., where gemination leads to epenthesis.

The following forms serve as input for the different programmes: (a) for the "ROOT.BAS" programme, all of BF's 1280 "roots" or "base forms"; (b) for the "PERF.BAS" programme, a list of perfect forms which represent all of BF's 42 verb classes, and (c) for the "INFIN.BAS" programme, a list of infinitives from all of BF's 42 verb classes.

There are certain routines which the programmes have in common:

At first, the verb lists are identified as "input" and "output" files (cf. lines 20ff. of the programmes "PERF.BAS" and INFIN.BAS in the appendix.) The symbols of the transcription are identified as "vowels", "consonants", "palatals", etc. (lines 80 ff. or lines 20 ff.).

Then the "radicals" of every verb are numbered from left to right as radical(1), radical(2) etc. (lines 140-170).

Subsequently, every verb is identified on the basis of its shape. A verb either is "hollow" or "quadriliteral" or - by default - "triliteral". The "triliteral" verbs again are identified as verbs of **"class B"** or **"class C"** or - by default - as **"class A"**. If the perfect serves as input - but only in the case of the perfect - the verb classes (**"B", "C"**) must be indicated in the input file: **fällägä "class B"** vs. **galläbä "class C"**; by default, the other triradicals like **säbbärä** are **"class A"**. All verbs are then cross- classified as verbs with or without "initial a", or "final "a, or "final palatal" (lines 170-240). Note that in the programmes, a consonant "C" and its gemination "**:**" are written **":C"**; in the lists below, this sequence has been inverted for the sake of convenience.

After these introductory steps, a choice is offered between generating the "perfect", the "infinitive", "jussive", "gerund", or "contingent", and the respective forms are generated (lines 260-1070 of the programme, cf. sections 4 to 6 below).

In the subroutines at the end of the programme, certain recurring changes are made; they include the following:

Gemination (line 1090), vowel reduction (from **ä** to **zero** or to **ï**), and vowel raising (from **e, a, o** to **i,** or to **ï,** or to **u**) (lines 1130 etc.) are the most important ones.

Finally the phonological surface form is adjusted: Consonant sequences are identified (line 1170), and the epenthetic "**ï**" is inserted to break the clusters (line 1220). Labialized vowels are considered for changes (lines 1270-1320).

A starred figure at the end of a line, like "*15", indicates the percentage of verbs which are affected by the respective rule.[6] These numbers show the relative "importance" of every rule: they indicate how often a programme line would apply if all Amharic verbs were analysed.

3.2 The transcription

Most symbols used here are the same as in BF. Some are modified; they include gemination (**:),** labialization (**W**) and place holders for vowels (**h W Y**). Digraphs are avoided: every consonant has one letter, so that themes and radicals can be kept symmetrical. So the capital letters **T, C, K** stand for glottalized **t', c', k'**, and **S, Z** and **N** for the palatal fricatives and nasals.

4. Starting from the "Root" or "Base Form"

The most abstract form of a verb - like **sbr, fl:g** - is also called its **"root"** (Cowley et al. 1976); in BF it is termed the **"base form".** BF have designed a "base form" for every Amharic verb, with the purpose of supplying all necessary information in the shortest possible form. The following "base forms" (BF: 24-25) illustrate the absolute minimum for predicting all other verb forms:

Base forms as input list (Samples from BF)
```
sbr      sabara
hwK      awaKa
KWTr     KoTara
ngWd     nagoda
ghlb     gaalaba
fl:g     falaga
hd:s     adasa
mnzr     manazara
```

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[6] The percentages are based on BF (1978: 24-25), where 100 percent equals the exhaustive listing of 1280 verbs.

It can be demonstrated that a simple programme turns these abstract "roots" or "base forms" into full phonological representations of the verb - for example, into the infinitive. The programme (cf. "ROOT.BAS" in the appendix) includes the following linguistic steps:

It takes the "base form" segment by segment and defines all consonants as "radicals" - including the "**h**" (lines 80-90 and 200).

Then it distinguishes the resulting "themes" by the number of their radicals, numbering them from left to right; there are themes of 2, 3 or 4 radicals (lines 240-260).

The programme supplies a "schwa" (**ä**) where no other vowel (**h/a, e** or **o**) is given (line 350). This is inserted before the last radical and before the 2nd radical of quadri- literals, or before the 3rd radical if that is geminated (line 360). The infinitive affixes (**mä -t**) are attached (line 390).

Finally, the underlying "**h**" will be converted to "**ä**" after palatals, but to "**a**" in all other places (lines 90 and 410).

The "Infinitives" of all 1280 Amharic verbs can be generated in this way, and the programme prints them out in groups of radicals in the pattern given here below.

(Note that the symbol "**:**" for gemination is put after the consonant. For the programme it should be in front. Note also that labialization is spelled as **Wä/Wï**. The surface rules - lines 1260-1330 of the programme - change labialization to **o/u** instead.)

Infinitives derived from the "base form" (Samples)
```
Radical no.
    1 2  3   4
mä -  s  b   är     masbar
m-    h  w   äK     maawaK
mä -  KW T   är     maKuTar
mä -  n  g   Wäd    mangad
mä -  g  hl  äb     magaalab
mä -  f  äl: äg     mafalag
m-    h  d:  äs     maadas
mä -m än z   är     mamanzar
etc.
```

So the programme derives the correct infinitives of all 1280 verbs by means of 8 rules (about 8 programme lines). This shows that BF's "base form" does in fact provide all of the necessary information for predicting at least the infinitive; and with the infinitive - as we shall see in the next section - all other forms as well.

5. Starting from the "Theme" or Perfect

The next programme to be discussed generates everything from the "theme" or "perfect" (cf. the programme **PERF.BAS** in the appendix). Traditionally, the **"3rd person masculine perfect"** or **"theme"** is used to represent the Amharic verb. This tradition is firmly established - so firmly that it may seem fruitless to question its status.

Note that for tri- radicals the verb classes have to be indicated. In the list below this is done by means of "B" and "C". An asterisk indicates that the radical usually occurs with **a-, as-** or **tä-** as derivative prefix. So the list from which all other parts are generated is as follows:

Perfect as input list (all 42 classes)
```
Radical no.
 1  2   3   4
    s  äb:  är  -ä     sabara
    a  w:   äK  -ä     awaKa
    KWäT:  är  -ä      KaTara
    n  äg:Wäd  -ä      nagada
    gWag:Wäl -ä  C     gWaagala
    g  al:  äb  -ä  C  gaalaba
    f  äl:  äg  -ä  B  falaga
    a  d:   äs  -ä  B  adasa
*   a  g:Wäl -ä  B     agala
    KWäl:  äf  -ä  B   Kalafa
    c  äk:Wäl -ä  B    cakala
    s  äm:  a          samaa
```

```
    a  m:   a          amaa
    mWäl:  a           mola
    l  al:  a       C  laalaa
    l  äk:  a       B  lakaa
    K  oT:  a       B  KoTaa
*   m  äS:  -ä        maSa
    a  y:   -ä        aya
    l  äy:  -ä  B     laya
    a  Z:   -ä  B     aZa
    K  oy:  -ä  B     Koya
    d  aN:  -ä  B     daaNa
       l  ak -ä       laaka
       S  om -ä       Soma
       T  es -ä       Tesa, Casa
 m  än äz: är -ä      manazara
 a  n äk: äs -ä       anakasa
 a  n äK:Wär -ä       anaKara
 mWäC äl: äf -ä       moCalafa
*kWäf äk:Wäf -ä       kafakafa
*KWäl am: äT -ä       KalaamaTa
 n  äkWäl: äl -ä      nakalala
 t  är äg:Wäm -ä      taragama
 d  äb al: äK -ä      dabaalaKa
 z  än äg: a          zanagaa
*g  äl at: a          galaataa
 m  än äC:  -ä        manaCa
 a  r  äj:  -ä        araja
 g  ob äN:  -ä        gobaNa
*g  od aN:  -ä        godaaNa
 w  äd aj:  -ä        wadaaja
```

5.1 From Perfect to Infinitive

When going from the perfect to the infinitive, all verbs - except those of class "B" - reduce the vowel of the 2nd radical to zero or to **ï** (72 percent of all verbs; cf. programme lines 570 and 1130). Only the verbs of class "B" geminate the 3rd radical (26 percent of all verbs; cf. lines 580 and 1090). Affixes are attached as appropriate (lines 590, 750 etc.). The resulting list is as follows:

Infinitive derived from Perfect
```
Radical no.
    1  2   3   4
mä-  s   b  är     masbar
m-   a   w  äK     maawaK
mä-  KW  T  är     maKuTar
mä-  n   gWäd      mangad
mä-  gWa gWäl      magWaagal
```

```
mä-    g a l äb      magaalab
mä-    f äll äg      mafalag
m-     a  dd äs      maadas
m-     a  ggWäl      maagal
mä-    KWäll äf      maKalaf
mä-    c äkkWäl      macakal
mä-    s  m a -t     masmaat
m-     a  m a -t     maamaat
mä-    mW l a -t     mamulaat
mä-    l a l a -t    malaalaat
mä-    l äkk a -t    malakaat
mä-    K oTT a -t    maKoTaat
mä-    m  S ä -t     mamSat
m-     a  y ä -t     maayat
mä-    l äyy ä -t    malayat
m-     a  ZZ ä -t    maaZat
mä-    K oyy ä -t    maKoyat
mä-    d aNN ä -t    madaaNat
mä-    l a   k       malaak
mä-    S o   m       maSom
mä-    T e   s       maCes
mä-m  än   z är      mamanzar
m-  a  n   k äs      maankas
m-  a  n   KWär      maanKar
mä-mWäC    l äf      mamoClaf
mä-kWäf    kWäf      makafkaf
mä-KWäl a m äT       maKalaamaT
mä-n äkW   l äl      mankulal
mä-t är    gWäm      matargom
mä-d äb a l äK       madabaalaK
mä-z än    g at      mazangaat
mä-g äl a t a -t     magalaataat
mä-m än    C ä -t    mamanCat
m-  a  r   j ä -t    maarjat
mä-g ob ï N ät       magobiNat
mä-g od a N ät       magodaaNat
mä-w äd a j ät       mawadaajat
```

5.2 From Perfect to Jussive/Imperative

The verbs of class "B" reduce the vowel of the 3rd radical to zero or **ï** (26 percent of all verbs); the others reduce the vowel of the 2nd radical (74 percent of all verbs; cf. programme lines 690, 1130). Both the quadriliterals and the verbs of class "B" geminate the 3rd radical (53 percent; cf. lines 700-710 and 1090). Hollow verbs with "**e''** or "**o**" reduce these vowels to "**i''** or "**u**" (3 percent; line 730).

Jussive/Imperative derived from Perfect
```
 Radical no.
   1  2  3    4
yï-    s  b  är -u     yisbaru
y-     ï  w  äK -u     yiwaKu
yï-    KW T  är -u     yiKuTaru
yï-    n  g  Wäd -u    yingadu
yï-    gWag W l -u     yigWaagulu
yï-    g  al b -u      yigaalbu
yï-    f  äl: ïg -u    yifaligu
y-     a  d: ïs -u     yaadisu
y- *   a  g:Wïl -u     yaagulu
yï-    KWäl: ïf -u     yiKalifu
yï-    c  äk:Wïl -u    yicakulu
yï-    s  m a /-u      yismu
y-     ï  m a /-u      yimu
yï-    mW l a /-u      yimulu
yï-    l al a /-u      yilaalu
yï-    l äk: a /-u     yilaku
yï-    KWäT: a /-u     yiKaTu
yï-*   m  S    -u      yimSu
y-     a  y    -u      yaayu
yï-    lä y:   -u      yilayu
y-     a  Z:   -u      yaaZu
yï-    K oy:   -u      yiKoyu
yï-    d aN:   -u      yidaaNu
yï-       l  ak/-u     yilaaku
```

```
yï-       S  um -u     yiSumu
yï-       T  is -u     yiTiisu, yiCiisu
yï- m än  z  ïr -u     yimanziru
y-  a  n  K  ïs -u     yaanKisu
y-  a  n  K  Wïr -u    yaanKuru
yï- mWäC  l  ïf -u     yimoClifu
yï-*kWäf  k  Wïf -u    yikafkufu
yï-*KWäl am   T -u     yiKalaamTu
yï- n äkW l  ïl -u     yinakulilu
yï- t är  g  Wïm -u    yitargumu
yï- d äb al   K -u     yidabaalKu
yï- z än  g  a /-u     yizangu
yï-*g äl at a /-u      yigalaatu
yï- m än  C    -u      yimanCu
y-  a  r  j    -u      yaarju
yï- gWäb ïN    -u      yigabiNu
yï-*gWäd aN    -u      yigadaaNu
yï- w äd aj    -u      yiwadaaju
```

5.3 From Perfect to Gerund

The vowel of the 3rd radical is reduced to zero or "**ï''** (about 91 percent of all verbs, cf. the programme lines 820 and 1130); the hollow verbs with "**a''** also reduce it to "ï" (6 percent, cf. line 830). Quadri- literals reduce the vowel of the 2nd syllable in the same way (27 percent, lines 840 and 1130). Only the verbs of Class "B" geminate the 3rd radical (28 percent, lines 850 and 1090).

Gerund derived from Perfect
```
Radical no.
 1   2  3   4
   s ä b  r -o      sabro
   a   w  K -o      awKo
   KWä T  r -o      KaTro
   n ä gWïd -o      nagudo
   gwa gWïl -o      gwagulo
   g a l  b -o      galbo
   f äll ïg -o      falligo
   a  dd ïs -o      addiso
*  a  ggWïl -o      aggulo
   K oll ïf -o      Kollifo
   c äkkWïl -o      cakkulo
   s ä m   -to      samto
   a   m   -to      amto
   mWä l   -to      molto
   l a l   -to      lalto
   l äkk ï -to      lakkito
   KWäTT ï -to      KaTTito
*  m ä S   -to      maSto
   a   y   -to      ayto
   l äyy ï -to      layyito
   a  ZZ ï -to      aZZito
   KWäyy ï -to      Kayyito
   d aNN ï -to      daNNito
   l ï   k -o       liko
   S o   m -o       Somo
   C e   s -o       Ceso
 mä n  z ïr -o      manziro
 a  n  k ïs -o      ankiso
 a  n  KWïr -o      anKuro
 mWäC  l ïf -o      moClifo
*kWäf  kWïf -o      kafkufo
*KWäl a m  T -o     KalamTo
 n äk u l  l -o     nakullo
 t är   gWïm -o     targumo
 d äb a l  K -o     dabalKo
 z än   g ï -to     zangito
*g äl a t   -to     galatto
 m än   C ï -to     manCito
 a  r   j ï -to     arjito
 gWäb   N ï -to     gabNito
*gWäd a N   -to     gadaNto
 w äd a j   -to     wadajto
```

5.4 From Perfect to Contingent

All verbs except hollow verbs in **o/e** reduce the vowel of the 3rd radical (about 91 percent of all verbs, cf. programme lines 950 and 1130). The verbs of classes "B" and "C" and the "quadri- literals" geminate the 3rd radical (61 percent, 960-980, 1090). Hollow verbs with "**a**" reduce it to "ï" (6 percent, 990).

Contingent derived from Perfect

```
 Radical no.
   1  2   3   4
yï-    s  äb   r  -all    yisabraal
y-     a  w    K  -all    yaawKaal
yï-    KWäT    r  -all    yiKaTral
yï-    n  äg W d -all     yinagudaal
yï-    gWag:Wïl -all      yigWaagulaal
yï-    g  al:  ïb -all    yigaalibaal
yï-    f  äl:  ïg -all    yifaligaal
y-     a  d:   ïs -all    yaadisaal
y- *   a  g:Wïl -all      yaagulaal
yï-    KWäl:  ïf -all     yiKalifaal
yï-    c  äk:Wïl -all     yicakulaal
yï-    s  äm   a  -ll     yisamaal
y-     a  m    a  -ll     yaamaal
yï-    mWäl   a  -ll      yimolaal
yï-    l  al:  a  -ll     yilaalaal
yï-    l  äk:  a  -ll     yilakaal
yï-    KWäT:  a  -ll      yiKaTaal
yï-*   m  äS      -all    yimaSaal
y-     a  y       -all    yaayaal
yï-    l  äy:     -all    yilayaal
y-     a  Z:      -all    yaaZaal
yï-    KWäy:     -all     yiKayaal
yï-    d  aN:     -all    yidaaNaal
yï-       l  ïk   -all    yilikaal
yï-       S  om   -all    yiSomaal
yï-       T  es   -all    yiCesaal
```

```
yï- m än äz: ïr -all      yimanaziral
y-  a  n äk: ïs -all      yaanakisaal
y-  a  n äK:Wïr -all      yaanakuraal
yï- mWäC äl: ïf -all      yimoCalifaal
yï-*kWäf äk:Wïf -all      yikafakufaal
yï-*KWäl am: ïT -all      yaaKalaamiTaal
yï- n äkWäl: ïl -all      yinakalilaal
yï- t är äg:Wïm -all      yitaragumaal
yï- d äb al: ïK -all      yidabaaliKaal
yï- z än äg: a  -ll       yizanagaal
yï-*g äl at: a  -ll       yigalaataal
yï- m än äC:     -all     yimanaCaal
y-  a  r äj:     -all     yaarajaal
yï- gWäb äN:    -all      yigabaNaal
yï-*gWäd aN:    -all      yigadaaNaal
yï- w äd aj:    -all      yiwadaajaal
```

6. Starting from the Infinitive

The infinitive or "verbal noun" must be considered a natural candidate for the role of a "principal part". The infinitive is, after all, commonly used to represent the verb in many other languages, including Afro- Asiatic languages.

As input, there are the infinitives of 42 verb sub- classes; cf. the full list 5.1 above and the samples here below:

Infinitive as input (Samples)
```
Radical no.
   1   2   3   4
mä-   s   b  är     masbar
m-    a   w  äK     maawaK
mä-   KW  T  är     maKuTar
mä-   n   gWäd      mangad
mä-   gWa gWäl      magWaagal
mä-   g a l äb      magaalab
mä-   f äll äg      mafalag
```

etc.

Note that gemination like in **fällägä** is not indicated by an abstract symbol like "B" for the "class B verbs" - rather, the signal is the actual gemination of the radical ("**ll**" or "**l:**"), as given with the infinitive.

It can be demonstrated that from this list of infinitives (5.1) all other forms are generated by a simple programme: perfect, jussive- imperative, gerund, and contingent (cf. the programme "INFIN.BAS" in the appendix).

6.1 From Infinitive to Perfect

To go from the Infinitive to the Perfect, only the following changes have to be made: Hollow verbs are exempted from gemination and from the insertion of schwa "**ä**" (**9** percent of all verbs, cf. programme line 532). All other verbs are geminated in the 3rd radical (91 percent, lines 532B and 1090), and a schwa "**ä**" is inserted with this radical (25 percent, line 536). The resulting list is the same as given above in section 5.

6.2 From Infinitive to Jussive/Imperative

Verbs of class "B" and quadri- literals reduce the vowel of the 3rd radical to zero or **ï** (**26 percent plus 27** percent, programme lines 690, 1130). Verbs of class "A" with initial "**a**" reduce it to "ï" (3 percent, line 720). Hollow verbs with "**o**" or "**e**" reduce these to "**u**" or "i" (3 percent, lines 730-740).

6.3 From Infinitive to Gerund

The following changes produce the gerund form: The vowel of the third radical is "reduced" from **ä to ï** or zero (about 91 percent of all verbs, cf. lines 820 and 1130 of the programme). In "hollow" verbs the "**a**" is reduced in the same way (6 percent, line 830). Tri- radicals except those with initial "**a**" receive a schwa (**ä**) in the 2nd radical (28 percent, line 850). Tri- Radicals with a second radical "**u**" change it to "**o**" (2 percent, line 855). Verbs with final "**a**" receive no verb final schwa "**ä**" (12 percent, line 860); for a few exceptions cf. BF p.67f.).

6.4 From Infinitive to Contingent

The vowel of the third syllable is reduced to zero or **ï** (91 percent, cf. programme lines 950 and 1130). Verbs other than those with "**a**" as second radical receive a schwa **ä** (**line 960**). **Verbs of class "C"** and quadri- literals are geminated (7 and 27 percent, lines 970-980, 1090). Hollow verbs with "**a**" reduce it to "**ï**" (6 percent, 990).

7. Conclusions

The question was whether (a) the base form ("root"), or (b) the perfect ("theme"), or (c) the infinitive would be the best predictor of all other principal parts. The study leads to the following conclusions:

7.1 Base form (root)

The **"base form"** or **"root"** has the advantage that there are no ambiguities. The whole purpose of creating such a form was, of course, to supply an "underlying" minimal form which predicts all others unambiguously.

With respect to learning the language, however, the "base form" has the serious disadvantage that it is not part of the spoken language: Abstractions have no life or sound like "real words" and cannot be assimilated like the rest of the language.

7.2 The Perfect or "Theme"

The **perfect or "theme"** has the advantage that the rules based on it build up the complex forms without first deleting any affixes except the **-ä.** The other advantage is that the "perfect" is traditionally available in dictionaries and grammatical descriptions.

However, the serious deficiency of the perfect should not be overlooked: the perfect form cannot predict the behaviour of tri- radical verbs without extraneous information such as "class B / class C".

How large, in exact figures, is this "disadvantage" from the perspective of language acquisition? According to our percentage figures, the perfect as a basis for predicting other forms is deficient for every third verb.

7.3 The Infinitive

The **"Infinitive"** has the advantage - like the "base form" - that all morphological forms can be predicted unambiguously. There is no need to add morphological labels such as "class "A", "class "B" to the verb. All of the necessary information is already contained in the Infinitive as it is. There also is a small gain in terms of rule economy: The generation of verbs from the infinitive takes one or two rules less than the perfect does - but this gain is so small that is seems negligible.

One disadvantage of the infinitive is that some of the rules may seem "unnatural": They are "unnatural" in the sense that the infinitive affixes (**mä- -t)** must be deleted before other forms can be built up.

If the number of programme lines is taken as another basis of comparison, then it emerges that derivations need about the same number of rules whether the perfect or the infinitive serves as the basis. Judged strictly by the number of programme lines, the infinitive looks like the optimum:

Number of programme lines needed

Derivation from:

to:	(a) Root/Base Form	(b) Perfect/Theme	(c) Infinitive
Perfect	-	-	2
Infinitive	(8)	2	-
Juss./Imperat.		6	4
Gerund		5	5
Contingent		5	5
Total:	(24)	18	16 lines

7.4 Summary

To summarize: the behaviour of the verbs of class "B" and "C" cannot be predicted on the basis of the perfect form alone. Since 26 percent of all Amharic verbs are of class "B", and another 7 percent of "class C", this means the information given in the "theme" or "perfect" is under- differentiated in more than one third of all verbs.

Psycho-linguistically, the "theme" (perf. 3rd ps. m.) is not a good starting point for acquiring the Amharic verb morphology: all tri- radical verbs must be learnt as verbs of "class A", "B" or "C" - a task which is cumbersome and undesirable. It is also unnecessary: We have shown that the "infinitive" would provide all necessary information.

But given the Semiticist tradition, and given the small bonus in "naturalness", the shortcomings of the perfect probably will have to be accepted.

References

Armbruster, 1910, "Initia Amharica, vol.1 Grammar, vol.2 English-Amharic Vocabulary with Phrases", Cambridge: Univ. Press [esp. vol.1 pp.198-391, and vol.2 pp.457-497]

Bender, Marvin L., and Hailu Fulass, 1978, "Amharic Verb Morphology", East Lansing: Mich. State Univ. [esp. pp.43-44, 107-129

Cohen, Marcel, 1936, "Traite' de langue amharique", Institut d'Ethiopie", Paris

Cowley, Roger, Marvin L. Bender, and Charles A. Ferguson, 1976, "The Amharic Language: Description", pp. 77-89 in Bender, ed. 1976

Leslau, Wolf, 1973, "English-Amharic Context Dictionary", Wiesbaden: Harrassowitz.

Obolensky, Serge, Debebow Zelelie, and Mulugeta Andualem, 1964, "Amharic Basic Course", vols. 1 and 2, Washington: FSI [esp. vol.2 pp.595-571]

Richter, Renate, 1987, "Lehrbuch der amharischen Sprache", Leipzig: VEB [pp.153ff., passim]

Appendix
The programmes (a) ROOT.BAS, (b) PERF.BAS and (c) INFIN.BAS

```
1 ' (a) ROOT.BAS
2 '[Lines 20ff, 100ff, 280ff, 370ff, 420ff, 480f are not of interest here]
80 CONS$="PTCKptckbdjgmnNfsSzZlrwy"
90 PALA$="CcjNSZy" : LABI$="WY" : GEMI$=":" : A$="h"
200 IF INSTR(CONS$,SEGM$(I))<>0 THEN GOSUB 220 : GOTO 150
210 RADI$(R)=RADI$(R)+SEGM$(I) :              GOTO 150
220 IF LEN(RADI$(R)) <3 THEN RADI$(R)=RADI$(R)+" " : GOTO 220
230 R=R+1 : RADI$(R)=SEGM$(I) : RETURN
240 IF R=2 THEN T$(1)="   "    : T$(2)="   "   : T$(3)=RADI$(1) : T$(4)=RADI$(2)
250 IF R=3 THEN T$(1)="   "    : T$(2)=RADI$(1) : T$(3)=RADI$(2) : T$(4)=RADI$(3)
260 IF R=4 THEN T$(1)=RADI$(1) : T$(2)=RADI$(2) : T$(3)=RADI$(3) : T$(4)=RADI$(4)
270 IF LEN(T$(3))<4 THEN T$(3)=T$(3)+" " : GOTO 270
350 IF MID$(FORM$, 1,1)<>"h" AND MID$(FORM$, 1,1)<>" " AND MID$(FORM$, 3,1)=" " THEN
FORM$=MID$(FORM$,1,2)+"ä"+MID$(FORM$,4,15)
360 IF MID$(FORM$, 8,1) ="|" AND MID$(FORM$, 4,1)<>"h" AND MID$(FORM$, 6,1)=" " THEN
FORM$=MID$(FORM$,1,5)+ "ä"+MID$(FORM$,7,15)
410 IF INSTR(PALA$,J$)<>0  AND MID$(INFI$,13,1)="h" THEN
INFI$=LEFT$(INFI$,12)+"ä"+MID$(INFI$,14,10)
470 PRINT 2,LEFT$(INFI$,3)+LEFT$(Z$,1)+MID$(INFI$,4,15) : PRINT
LEFT$(INFI$,3)+LEFT$(Z$,1)+MID$(INFI$,4,15)


2 ' (b) PERF.BAS
20 CLS : CLEAR : CONS$="bcCdfghjkKlmnNpPrsStTwyzZ" : VOWEL$="aeiouäïWY"
30 INPUT "End or File in [e]/[VERBPERF.LST]";F$(1) : IF F$(1)="e" THEN END
40 IF F$(1)="" THEN    F$(1)="VERBPERF.LST"
50 INPUT"Part= [PER/INF/JUS/GER/CON]";PART$
60 OPEN F$(1) FOR INPUT AS  1
70 INPUT "File out           [VERB.LST]";F$(2)
80 IF F$(2)="" THEN    F$(2)="VERB.LST"
90 OPEN F$(2) FOR APPEND AS  2
100 IF EOF(1) THEN CLOSE : GOTO 30
110 LINE INPUT 1,VERB$ : : IF VERB$="" THEN GOTO 100
115 DERIV$=LEFT$(VERB$,1) : VERB$=MID$(VERB$,2)
120 '
130 '**defining radicals
140 RADICAL$(1) =MID$(VERB$, 1,3)
150 RADICAL$(2) =MID$(VERB$, 4,3)
160 RADICAL$(3) =MID$(VERB$, 8,3)
170 RADICAL$(4) =MID$(VERB$,11,1)  :    CLASS$="Clss."+MID$(VERB$,16,1)
180 IF      RADICAL$(1)  <>"  " THEN CLASS$="Quadr."  : GOTO 210     '*27
190 IF LEFT$(RADICAL$(3),2) ="  " THEN CLASS$="Hollow"  : GOTO 210     '*9
200 IF CLASS$="Clss. " OR CLASS$="Clss." THEN CLASS$="Clss.A"              '*33
210 IF LEFT$(RADICAL$(1),1)="a"    THEN TYPE$ ="Initi.a" : GOTO 230 : ELSE   TYPE$ =""
220 IF LEFT$(RADICAL$(2),1)="a"    THEN TYPE$ ="Initi.a" : ELSE TYPE$ ="" '*9
230 IF MID$ (RADICAL$(3),3)="a"    THEN FINAL$="Final.a" : ELSE FINAL$="" '*12
240 IF MID$ (RADICAL$(3),3,1)="ä" AND LEFT$(RADICAL$(4),1)=" " THEN FINIS$="Palatal" '*6
250 '
260 '**selecting parts of verbs**
270 IF PART$="PER" THEN GOTO  530
280 IF PART$="INF" THEN GOSUB 560
290 IF PART$="JUS" THEN GOSUB 680
300 IF PART$="GER" THEN GOSUB 810
310 IF PART$="CON" THEN GOSUB 940
320 '
330 '**putting radicals together
```

```
340 FULLVERB$=PREFIX$+RADICAL$(1)+RADICAL$(2)+GEMINAT$+RADICAL$(3)+RADICAL$(4)+SUFFIX$
350 '
360 '**surface phonology
370 '**epenthetic vowel in >2 clusters
380 CLUST=0 : VOWEL=0
390 FOR I=10 TO 14 : GOSUB 1170 : NEXT I : GOSUB 1220
400 FOR I=10 TO 16 : GOSUB 1170 : NEXT I : GOSUB 1220
410 FOR I= 7 TO 14 : GOSUB 1170 : NEXT I : GOSUB 1220
420 FOR I= 7 TO 16 : GOSUB 1170 : NEXT I : GOSUB 1220
430 '
440 '**labialized vowels
450 FOR I= 5 TO 13 : GOSUB 1270 : NEXT I
460 '
470 '**printing out
480 PRINT 2,FULLVERB$ : PRINT FULLVERB$,PART$,CLASS$
490 FOR I=1 TO 4 : RADICAL$(I)="" : NEXT I : GEMINAT$=""
500 GOTO 100
510 '
520 '**principal parts
530 '**perfect
540 FULLVERB$=VERB$ : GOSUB 1260 : GOTO 480
550 '
560 '**infinitive
570 IF CLASS$<>"Clss.B" THEN REDUCE=2 : GOSUB 1130             '*72
580 IF CLASS$ ="Clss.B" THEN GOSUB 1090 : ELSE GEMINAT$=" "    '*26
590 '**inf.affixes
600 IF TYPE$="Initi.a" THEN PREFIX$="m- " : GOTO 620
610 PREFIX$="mä-"
620 IF MID$ (RADICAL$(4),1)<>" " THEN SUFFIX$="   " : RETURN
630 IF FINAL$="Final.a" THEN SUFFIX$=" -t"          : RETURN
640 IF FINIS$="Palatal" THEN SUFFIX$=" -t"          : RETURN
650 SUFFIX$="-ät"
660 RETURN
670 '
680 '**jussive
690 IF CLASS$="Clss.B" THEN REDUCE=3  : GOSUB 1130 : ELSE REDUCE=2 : GOSUB 1130 '*26
700 IF CLASS$="Quadr." THEN REDUCE=2  : GOSUB 1130 :       REDUCE=3 : GOSUB 1130 '*27
710 IF CLASS$="Clss.B" THEN GOSUB 1090 : ELSE GEMINAT$=" "       '*26
720 IF CLASS$="Clss.A" AND MID$(RADICAL$(2),1,1)="a" THEN RADICAL$(2)="ï"+MID$(RADICAL$(2),2,2)
'*3
730 IF CLASS$="Hollow" AND MID$(RADICAL$(2),3,1)="o" THEN RADICAL$(2)=LEFT$(RADICAL$(2),2)+"u"
'*2
740 IF CLASS$="Hollow" AND MID$(RADICAL$(2),3,1)="e" THEN RADICAL$(2)=LEFT$(RADICAL$(2),2)+"i"
'*1
750 '**juss.affixes
760 IF TYPE$="Initi.a" THEN PREFIX$="y- " : GOTO 780
770 PREFIX$="yï-"
780 SUFFIX$="-/u"
790 RETURN
800 '
810 '**gerund
820 REDUCE=3 : GOSUB 1130
830 IF CLASS$="Hollow"  AND MID$(RADICAL$(2),3,1)="a" THEN RADICAL$(2)= LEFT$(RADICAL$(2),2)+"ï"
'*6
840 IF CLASS$="Quadr."  THEN REDUCE=2  : GOSUB 1130                        '*27
850 IF CLASS$="Clss.B"  THEN GOSUB 1090 : ELSE GEMINAT$=" "              '*28
860 IF FINAL$="Final.a" THEN RADICAL$(3)=LEFT$(RADICAL$(3),2)+" "        '*12
870 '**gerund.affixes
880 PREFIX$="    "
890 IF MID$ (RADICAL$(4),1)<>" " THEN SUFFIX$=" -o" : RETURN
900 IF FINAL$="Final.a" THEN SUFFIX$="-to" : RETURN
910 SUFFIX$="-to"
920 RETURN
930 '
940 '**contingent
950 REDUCE=3  : GOSUB 1130
960 IF CLASS$="Clss.B" THEN GOSUB 1090 : ELSE GEMINAT$=" "       '*26
970 IF CLASS$="Clss.C" THEN GOSUB 1090                           '*7
980 IF CLASS$="Quadr." THEN GOSUB 1090                           '*27
990 IF CLASS$="Hollow"  AND MID$(RADICAL$(2),3,1)="a" THEN RADICAL$(2)= LEFT$(RADICAL$(2),2)+"ï"
'*6
1000 '**conting.affixes
1010 IF TYPE$="Initi.a" THEN PREFIX$="y- " : GOTO 1030
1020 PREFIX$="yï-"
1030 IF FINAL$="Final.a" THEN SUFFIX$=" -ll" : RETURN
```

```
1040 SUFFIX$="-all"
1050 RETURN
1060 '
1070 '**routines:
1080 '**gemination
1090 GEMINAT$=LEFT$(RADICAL$(3),1)
1100 RETURN
1110 '
1120 '**vowel reduction
1130 IF MID$(RADICAL$(REDUCE),3)="ä" THEN RADICAL$(REDUCE)=LEFT$(RADICAL$(REDUCE),2)+" "
1140 RETURN
1150 '
1160 '**identifying cons. clusters
1170 IF INSTR(CONS$, MID$(FULLVERB$,I,1))<>0 THEN CLUST=CLUST+1
1180 IF INSTR(VOWEL$,MID$(FULLVERB$,I,1))<>0 THEN VOWEL=VOWEL+1
1190 RETURN
1200 '
1210 '**breaking clusters with "ï"
1220 IF CLUST>2 AND VOWEL=0 AND MID$(FULLVERB$,13,1)=" " THEN
FULLVERB$=LEFT$(FULLVERB$,12)+"ï"+MID$(FULLVERB$,14)
1230 CLUST=0 : VOWEL=0
1240 RETURN
1250 '
1260 '**labialized vowels
1270 'LABIAL= INSTR(FULLVERB$,"W ")
1280 'IF LABIAL<>0 THEN FULLVERB$=LEFT$(FULLVERB$,(LABIAL-1))+" u"+MID$(FULLVERB$,(LABIAL+2))
1290 'LABIAL= INSTR(FULLVERB$,"Wä")
1300 'IF LABIAL<>0 THEN FULLVERB$=LEFT$(FULLVERB$,(LABIAL-1))+" o"+MID$(FULLVERB$,(LABIAL+2))
1310 'LABIAL= INSTR(FULLVERB$, "W")
1320 'IF LABIAL<>0 THEN FULLVERB$=LEFT$(FULLVERB$,(LABIAL-1))+ "w"+MID$(FULLVERB$,(LABIAL+1))
1330 RETURN

3 ' (c) INFIN.BAS
4 ' [Only the differences against (b) are listed here]
110 LINE INPUT 1,INFI$ : : IF INFI$="" THEN GOTO 100
115 VERB$=MID$(INFI$,4)
150 RADICAL$(2) =MID$(VERB$, 4,3) : GEMINAT$=MID$(VERB$,7,1)
170 RADICAL$(4) =MID$(VERB,11,1)
195 IF GEMINAT$= " "               THEN CLASS$="Clss.A" : GOTO 205        '*33
200 IF GEMINAT$<>" "               THEN CLASS$="Clss.B" : GOTO 210        '*27
205 IF GEMINAT$= " " AND MID$(RADICAL$(2),3,1)="a" THEN CLASS$="Clss.C" : GOTO 210
235 FINIS$=""
270 IF PART$="PER" THEN GOSUB 530
280 IF PART$="INF" THEN GOTO  560
532 IF TYPE$="Hollow" THEN GOTO 540 : ELSE GOSUB 1090   '*9
536 IF MID$(RADICAL$(2),1,1)<>"a" AND MID$(RADICAL$(2),3,1)=" " THEN
RADICAL$(2)=LEFT$(RADICAL$(2),2)+"ä" '*25
540 '**perf.affix
542 IF FINAL$="Final.a" OR FINIS$="Palatal" THEN SUFFIX$="  " : GOTO 544
543 SUFFIX$=" -ä"
544 RETURN
570 FULLVERB$=INFI$
580 '  [delete lines 580 to 650]
660 GOSUB 1270
840 '  [delete line 840]
690 IF CLASS$="Clss.B" OR CLASS$="Quadr." THEN REDUCE=3  : GOSUB 1130
700 '  [delete lines 700-710]
840 '  [delete line 840]
850 IF CLASS$<>"Quadr." AND TYPE$<>"Initi.a" AND MID$(RADICAL$(2),3,1)=" " THEN
RADICAL$(2)=LEFT$(RADICAL$(2),2)+"ä"
855 IF CLASS$<>"Quadr." AND                  MID$(RADICAL$(2),3,1)="u" THEN
RADICAL$(2)=LEFT$(RADICAL$(2),2)+"o"
960 IF LEFT$(RADICAL$(2),1)<>"a" AND MID$(RADICAL$(2),3,1)=" " THEN
RADICAL$(2)=LEFT$(RADICAL$(2),2)+"ä"
```