Against Split Morphology:
‘inflection’, ‘derivation’, and the structure of the SBCG lexicon

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1 Assumptions of (Split-)Morphological Theory

The following propositions are often assumed in morphological theory

a) Inflection/derivation is a robust, universal distinction (or at least 'the norm'). Distinction can be more fine grained (Sag), but not less?
b) There exists a lexeme/word distinction, supported by an 'intuitive' (Booij, Stump?) difference between pairs like tax/taxes and tax/taxation

c) Metatheoretical assumption: typologically diverse languages should be analyzed using a single (though general) morphological framework

Assumption A is referred to by Bauer (1997) as split morphology.

Criteria for distinguishing inflection from derivation according to Stump (2005, pp. 53-58):

a) Derivation can change part-of-speech class, while inflection cannot
b) Inflection applies to a category without exception; derivation applies sporadically

c) Inflection is semantically regular; derivation is frequently less than fully semantically regular

d) Inflection is syntactically determined; derivation is not

e) Derivational processes apply before inflectional processes

Stump finds exceptions to each of these criteria, but retains the distinction.

Assumption B is intimately connected to Assumption A, with inflection creating words from lexemes, and derivation creating new lexemes from old ones.

\[ infl-cxt : \left[ \begin{array}{l} \text{MTR word} \\ \text{DTR list(lexeme)} \end{array} \right] \]

\[ deriv-cxt : \left[ \begin{array}{l} \text{MTR lexeme} \\ \text{DTR list(lex-sign)} \end{array} \right] \]

Figure 1: Split Morphology in SBCG (Sag 2012)

Data presented here from Niger-Congo noun class systems suggests that these systems do not display an inflection/derivation distinction.

As one of the world’s largest language families (approx. 1500 in Ethnologue), expectations to the split-morphology type should not be considered marginal, and categories of morphological construction should not be assumed when analysing newly documented languages.

Moreover, the diversity of morphological constructions found throughout the world’s languages suggests that fundamentally different analyses may be required for different constructions (perhaps even within the same language).

2 Typology of Niger-Congo Noun Class Systems

Properties typical of Niger-Congo noun class systems (Kießling 2013, pp. 44-45)

a) all nouns assigned to a limited set of noun classes
b) all nouns control, by virtue of their assignment to a class, a system of concordial agreement which penetrates vast sections of the morphosyntax

c) class assignment is governed by semantic principles so that classes could be described as semantic networks (but not necessarily synchronically active/cognitively real (Dingemanse 2006, pp. 22-23))

d) most noun classes form singular-plural pairs or genders

Otoro, Kordofanian (Stevenson 2009)

<table>
<thead>
<tr>
<th>SING</th>
<th>PLUR</th>
</tr>
</thead>
<tbody>
<tr>
<td>gw-</td>
<td>li-</td>
</tr>
<tr>
<td>li-</td>
<td>jw-</td>
</tr>
<tr>
<td>g-</td>
<td>d-</td>
</tr>
<tr>
<td>n-</td>
<td>ny-</td>
</tr>
<tr>
<td>y-</td>
<td>nji-</td>
</tr>
<tr>
<td>j-</td>
<td>d-</td>
</tr>
<tr>
<td>ñ-</td>
<td>ñi-</td>
</tr>
<tr>
<td>ñim-</td>
<td>jim-</td>
</tr>
</tbody>
</table>

Table 1: Example Otoro Paradigms

As is often the case in Niger-Congo noun class systems, there are classes which
participate in multiple ‘genders’, such as gw-, j-, and g-, which form pairs with multiple classes, and ð- and y-, which participate in single and double class genders.

- Moreover, number is present semantically, but is not an active morphosyntactic feature (Welmers 1973).
- In Indo-European, there exist patterns (such as SV agreement) which are sensitive to number, but not gender. In Niger-Congo, however, one often finds systems where there exist no constructions which are sensitive to number distinct from class.

3 Number as a derivational process?

- Lumun (Smits 2011) represents a particularly irregular number system.

Table 2: Lumun NC markers and their ‘genders’

<table>
<thead>
<tr>
<th>NCM</th>
<th>SING</th>
<th>PLUR</th>
</tr>
</thead>
<tbody>
<tr>
<td>p-</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>t-</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>c-</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>k-</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>m-</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>n-</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>ð-</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>y-</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>l-</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Ø-</td>
<td>✓</td>
<td>✓</td>
</tr>
</tbody>
</table>

- 26 distinct genders from only 11 different class markers
- Number is NOT semantically regular, with functions such as collective and singulative as well
- Smits argues, following Schadeberg (2001), that number marking should be considered a derivational rather than inflectional process.
- Problems:
  a) Gender-based analysis would posit widespread accidental homophony
  b) Agreement is inflection par excellence. An analysis where class marking on nouns is derivational but inflectional on agreement targets is highly undesirable.

4 Paradigm Networks

- Paradigm networks such as the following can be found throughout the Niger-Congo family (Hepburn-Gray 2016).

Table 4: Botanical Paradigm Network in Bainounk (Cobbinah 2013, p. 319)

<table>
<thead>
<tr>
<th>NC Paradigm</th>
<th>-dooma ‘kaba’</th>
<th>-taat ‘annona’</th>
</tr>
</thead>
<tbody>
<tr>
<td>si-/mun-</td>
<td>‘kaba tree’</td>
<td>‘annona tree’</td>
</tr>
<tr>
<td>bu-/-/di-</td>
<td>‘kaba fruit’</td>
<td>‘annona fruit’</td>
</tr>
<tr>
<td>ja-</td>
<td>‘leaves of the kaba tree’</td>
<td>‘leaves of the annona tree’</td>
</tr>
</tbody>
</table>

Table 5: Ethnic Group Paradigm in Cicipu (McGill 2007, p. 61)

<table>
<thead>
<tr>
<th>Class</th>
<th>Acipu</th>
<th>Karishen</th>
<th>Kadonho</th>
<th>Hausa</th>
<th>Gloss</th>
</tr>
</thead>
<tbody>
<tr>
<td>8</td>
<td>c-cipu</td>
<td>Ø-risínō</td>
<td>d-dipó</td>
<td>k-kşgő</td>
<td>Person</td>
</tr>
<tr>
<td>2</td>
<td>á-cipu</td>
<td>Ø-risínō</td>
<td>Ø-dipó</td>
<td>Ø-kşgő</td>
<td>People</td>
</tr>
<tr>
<td>1</td>
<td>k-o-risín</td>
<td>kő-dipó</td>
<td>k-kşgő</td>
<td>Town/Area</td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>ci-cipu</td>
<td>ti-risínō</td>
<td>tl-dipó</td>
<td>tl-kşgő</td>
<td>Language</td>
</tr>
</tbody>
</table>

- Problems:
  a) no principled way to choose a base lexeme, from which others are derived
  b) could posit separate lexeme from which all are derived, but this lexeme never surfaces then
- Koenig (1999, p. 150) discusses a similar example in English: regress/regressive/regression vs. *agress/agressive/agression. The absence of the verb agress is explained as a missing root, which is only constructionally introduced in the agressive/agression constructions. However, it is not a root that is missing, but the verb cell in a derivational paradigm.
5 Paradigms in Morphological Theory

- Stump and Finkel (2013) distinguish between the canonical extremes of the pure word-and-paradigm morphology (PWPM) hypothesis and the pure exponence-based morphology (PEM) hypothesis.

Table 6: Differences between the PWPM and PEM hypotheses (Stump and Finkel 2013, p. 265)

<table>
<thead>
<tr>
<th>Criterion</th>
<th>PWPM</th>
<th>PEM</th>
</tr>
</thead>
<tbody>
<tr>
<td>IC membership</td>
<td>represented by means of a set of lexically listed principal parts</td>
<td>represented by means of one or more stems</td>
</tr>
<tr>
<td>Rules</td>
<td>implicative rules formulated in terms of realized cells</td>
<td>rules of exponence formulated in terms of stems</td>
</tr>
</tbody>
</table>

- S&F argue that the principal part/diacritic distinction is a false one, but use diacritic in formalism.
- For rules, they propose hybrid model with rules of exponence as primary and implicative rules of referral to cover syncretism.
- Evidence for necessity of rules of exponence based on stem variation in Sanskrit. Since diversity is assumed here, rules of exponence are not motivated for these Niger-Congo languages.
- The efficiency of paradigm diacritics for languages with large inflectional paradigms is less obvious for these NC languages, since the paradigm diacritic only specifies two paradigm cells, both of which can be specified already by a single morphosyntactic feature (CLASS).
- Introduction of paradigm diacritics would be akin to introducing the notion of gender to these languages. See Schadeberg (2001) for arguments against a ‘gender-based’ analysis of Swahili.

6 Formalism

- Propose a Word and Paradigm (Blevins 2006) model of morphology for these Niger-Congo languages.
- In the theory proposed here, a lexeme is not a type of sign. A lexeme is simply the knowledge that a set of words is paradigmatically related, and the information that is shared between this set of words. (See Blevins 2006 for the notion of ‘abstractive’ stems, lexemes etc.)
- Paradigm cells which are not priciple parts are generated via analogy (an-cxt).

Compounds (comp-cxt) remain a distinct construction type, as somewhat of a hybrid word/phrase construction.

- I adapt the following from Koenig (1999).

Figure 4: Construct types

\[ \text{head} \Rightarrow [\text{LXM} \mu\text{-FEAT} \mu\text{-PROP}] \]

Figure 5: Head Feature Types Signature

Here \( L \) represents the (possibly empty) set of semantic frames which may be associated with a particular paradigm cell (past time reference, etc.).

- Different types of an-cxt take the principle part of a lexeme, and associate the morphosyntactic features of the desired paradigm cell with the new word.
- The phonology of the word is determined by a function, which takes as input the phonology of the principle part and the features of the new paradigm cell. This function contains the ‘implicative rules’ of the PWPM approach, which generates a proportional analogy with the corresponding exemplar paradigm.
Figure 7: Type Signature of an-cxt

> An example of an analogical construction

Figure 8: The 'fruit' construction of the botanical paradigm network

References


