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Squibs and Discussion

KIKONGO NASAL HARMONY AND
CONTEXT-SENSITIVE
UNDERSPECIFICATION
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Most recent work on feature underspecification deals with features that are predictable on the basis of other features specified on the same segment, suggesting that underspecification might be segmentally context-free (see among others Pulleyblank (1985), Steriade (1987a), Vago (1987), and Archangeli (1988)). On the other hand, Kiparsky (1982) proposes that the laxness of morpheme-internal antepenultimate vowels in English, such as the first vowel in *alibi*, is underlyingly unmarked. (In contrast, a tense vowel in the same position, such as *nightingale*, is marked underlyingly.) This would appear to be a case of context-sensitive underspecification. But Kiparsky also assumes that no feature can have both + and - values in the same environment in the lexicon (p. 54), and underspecification of antepenultimate vowels follows from this more general principle.

In his analysis of Catalan nasal assimilation, Kiparsky (1985) proposes that the coronal nasal is underlyingly unspecified for its place features when it immediately precedes an obstruent. This context-sensitive underspecification is based on the assumption that lexical rules are structure-preserving and postlexical rules are not. Steriade (1987a) points out that the strongest evidence for underspecification of redundant feature values comes from phenomena such as crossing association lines or segment transparency. Since Catalan nasal underspecification lacks such evidence, and since alternative analyses of Catalan nasal assimilation are possible (for instance, representing the coronal nasal as specified with its own place feature or as sharing a place feature with the following consonant), context-sensitive underspecification remains to be tested.

My heartfelt thanks go to D. Odden. Without his constant encouragement and enlightening suggestions, this squib could not have been written. The data used in this squib are based on work with Mr. Kufimfutu Bakelana, a native Kikongo speaker to whom I owe my gratitude, in a Field Methods course conducted by D. Odden at the Ohio State University during the academic year 1988-1989. I also thank two anonymous reviewers, whose comments helped me clarify my thoughts.

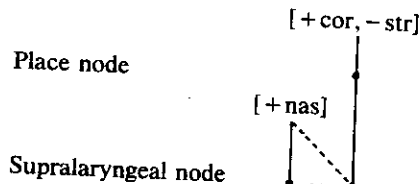
In this squib I will present an analysis of Kikongo nasal harmony that provides evidence for context-sensitive underspecification based on problems in line crossing.

In Kikongo, a Bantu language spoken in southwestern Zaire, the perfective active suffix *-idi* and the perfective passive suffix *-ulu* become *-ini* and *-unu*, respectively, if the verb stem contains a nasal consonant, which may be any number of segments away from the target. For example:¹

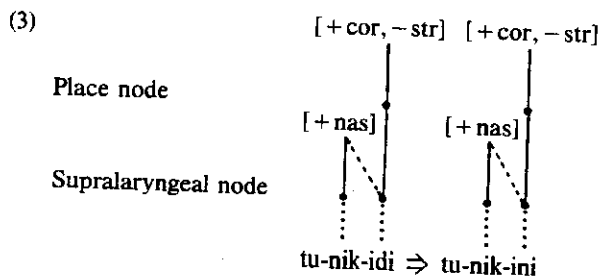
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|--------|--------------------|-------------------------|
| (1) a. | m-bud-idi | 'I hit' |
| | m-bul-ulu | 'I was hit' |
| | n-suk-idi | 'I washed' |
| | n-suk-ulu | 'I was washed' |
| b. | tu-kun-ini | 'we planted' |
| | masangu ma-kin-unu | 'the maize was planted' |
| | tu-nik-ini | 'we ground' |
| | masangu ma-nik-unu | 'the maize was ground' |

To express this process as feature spreading, and to avoid the problem of crossing association lines in cases like *tunikini* (from *tunikidi*), I assume that the feature [-nasal] is not specified on any segment in underlying representation and is filled in by default feature-marking rules at the end of the lexical phonological derivation. Within the feature geometry proposed in Steriade (1987b), the following rule for Kikongo nasal harmony can be assumed:

(2) *Nasal Harmony*



Since the Nasal Harmony rule applies only within the verb stem, I assume that it is a Level 1 rule and that stems are made up of roots and their suffixes. (3) illustrates how this rule applies:



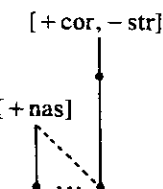
¹ A similar phenomenon in Tshiluba was first reported in Burssens (1946), but there the source of the process is a stem-final nasal.

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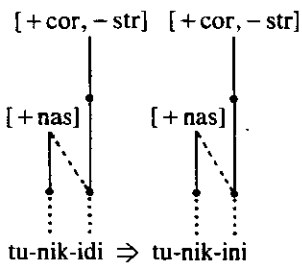
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A systematic exception to this rule is that a nasal followed by an obstruent consonant² does not trigger Nasal Harmony, nor does such a nasal block the rule. For example:

- (4) a. tu-bing-idi 'we hunted'
tu-bing-ulu 'we were hunted'
tu-kong-idi 'we tied'
tu-kong-olo 'we were tied'
- b. tu-meng-ini 'we hated'
tu-meng-ono 'we were hated'
tu-mant-ini 'we climbed'
wu-mant-unu 'it was climbed'

If [+nasal] is always underlyingly specified on nasal consonants, then Nasal Harmony should apply in (4a); if the consonant that follows a nasal is specified as [-nasal] and thereby blocks Nasal Harmony in (4a), then Nasal Harmony should not apply in (4b), either.

An appeal to underspecification will solve this problem. In Kikongo the [+nasal] feature of a preconsonantal nasal is always predictable, since the only consonant clusters in this language are homorganic [+nasal] [-nasal, -sonorant] clusters. Thus, we can solve the problem posed by (4) if we hypothesize that the preconsonantal nasal is not specified for its [+nasal] feature in underlying representation, on the grounds that [+nasal] is noncontrastive in that position (although it is contrastive elsewhere, as in the near minimal pair /kikini/ 'dancer' versus /kizidi/ 'face').³ Accordingly, the reason why Nasal Har-

² There is some evidence for treating these as NC sequences instead of contour segments. In Kikongo a nasal devoices before a voiceless consonant word-initially in all speech rates, and also word-medially in slow, syllable-by-syllable speech. For example:

- (i) ŋsusu 'chicken' zinsusu/zi-ŋsu-su 'chickens'
ŋkosi 'lion' zinkosi/zi-ŋko-si 'lions'
nzo 'house' zinzo/zi-nzo 'houses'

We can explain why a nasal devoices word-initially but not word-medially in normal rate speech by assuming that devoicing applies to tautosyllabic NC sequences and that a word-medial nasal resyllabifies with the preceding vowel because a tautosyllabic NCV sequence is marked with respect to sonority sequencing. Resyllabification of the nasal consonant is possible, of course, only if the nasal is an independent consonant.

³ The phonemic inventory of Kikongo is as follows:

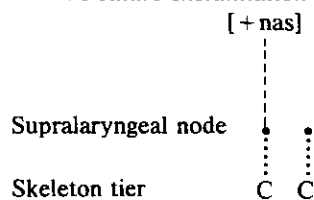
- p t k f s
b d g v z γ m n l
i e a o u

However, there is no crucial evidence in this language that tests radical versus contrastive underspecification. Such evidence could come from roots ending with consonants such as /b/ or /g/, which differ from the corresponding nasals only in the feature [nasal] but do not undergo Nasal Harmony. For example, if the perfective active form of a hypothetical

mony does not occur in *tu-bing-idi* is that no [+nasal] feature is specified in the verb stem, so there is nothing to spread to the suffix. In *tu-meng-ini*, on the other hand, it is the prevocalic nasal /m/ that triggers Nasal Harmony. Since no nasal feature is specified on the preconsonantal nasal or any other intervening segments, nothing blocks Nasal Harmony.

Subsequently, the [+nasal] feature of a preconsonantal nasal is filled in by the following rule:

(5) *Nasal Feature Instantiation*



With such an analysis, it is clear that underspecification of the [+nasal] feature in Kikongo is context-sensitive.

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root *mab-* is *mabini*, then radical underspecification is supported since the root-final consonant is transparent to Nasal Harmony; but if this form is *mabidi*, then contrastive underspecification is supported since the root-final consonant is opaque to Nasal Harmony. Unfortunately, there are no such roots in this language.

ERGATIVE PREDICATES AND
 DATIVE CLITICIZATION IN
 FRENCH CAUSATIVES
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