

A TAGALOG CONSONANT CLUSTER CONSPIRACY*

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0. Introduction
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0. Though capable of participating in rule change, metathesis and assimilation often affect individual lexical items. It would doubtless be of interest to students of a given language if certain apparently sporadic cases of metathesis and assimilation were shown to be rule-governed. If, moreover, the rules governing these changes turned out themselves to be well motivated by phonetic or phonological considerations and not merely arbitrary products of a particular grammar, they would constitute evidence for significant claims about the nature of language. It will be argued below that some instances of metathesis and assimilation in Tagalog that have not heretofore been regarded as predictable are rule-governed in this latter sense.

1. Bloomfield (1917:214, 1933:391) noted that in Tagalog “the suffix [-an], as in [a’sin] ‘salt’: [as’nan] ‘what is to be salted,’ is sometimes accompanied by interchange of two consonants that come together: [a’tip] ‘roofing’: [ap’tan] ‘what is to be roofed’, [ta’nim] ‘that planted’: [tam’nan] ‘what is to have plants put into it.’”¹ The most complete list of such items was published by Blake (1925), who considered the loss of the last root vowel of suffixed forms to be lexically idiosyncratic. The conditions under which these morphophonemically derived consonant clusters arise need not concern us here. Rather, the point at issue is whether changes that subsequently affect such clusters can be predicted.

Consider the following forms given by Blake (300–307):

TABLE 1

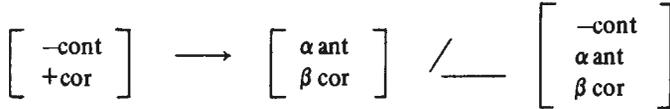
<i>root</i>	<i>meaning</i>	<i>derivative</i>
atip	roof	aptán, aptín
tanim	sow, plant	tamnán
apid	fornicate	aptán, aptín

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¹As will be seen, Bloomfield’s remarks apply as well to the suffix -in.

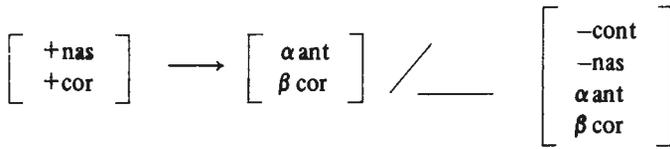
peace plan, rice bowl, horse cart and so forth, even though these collocations produce clusters of consonants in the order coronal – noncoronal. The English assimilation rule for which Bailey's convention has been proposed as an explanation applies only to sequences of NONCONTINUANTS that are in the order coronal – noncoronal and must, therefore, be stated as:

RULE 2 ENGLISH ASSIMILATION



It will be noted in TABLE 1 that clusters of noncontinuants in which the constituent segments differ in nasality undergo an assimilatory change if and only if the initial segment is coronal and the segment that follows is noncoronal. This condition holds regardless of the order of segments with respect to the feature [nasal].² If for the moment we set aside *datŋ*, the remaining assimilations can be expressed by rule as:

RULE 3 TAGALOG ASSIMILATION



As can be seen, both the ENGLISH ASSIMILATION RULE (RULE 2) and the TAGALOG ASSIMILATION RULE (RULE 3) operate to change sequences of noncontinuants that differ in nasality if these segments are in the order coronal – noncoronal, but do not apply to similar sequences that are not in this order. The English rule, however, is more general than the Tagalog rule since it also applies to sequences of segments with the same value for the feature [nasal] while the Tagalog rule does not. The metathesis in *aptán* (< atíp + an) and *tamnán* (< taním + an) can now be seen as changing just that class of coronal - noncoronal sequences that falls outside the scope of RULE 3, but within the scope of RULE 2. Stated differently, these instances of metathesis, taken together with the TAGALOG ASSIMILATION RULE affect exactly the same class of segment sequences that forms the input to the ENGLISH ASSIMILATION RULE.³ It appears likely that the

²Of the 239 roots listed in Blake's Appendix A, 16 have suffixed forms that contain a sequence of noncontinuants which differ in nasality. In 6 cases the constituent segments are in the order coronal-noncoronal before assimilatory changes occur. All of these clusters are changed by assimilation. (*baníg, ganáp, kiníg ~ kinúg, liníb, panagŋníp, datŋ*), while all 10 of the clusters not manifesting this order remain unchanged. The probability that these assimilations are sporadic is therefore extremely small. As only 6 of the 16 items in question contain a segment sequence in the presumed marked order, the chances are 6/16 or 3/8 that a purely random change in any given derived consonant cluster will affect one of these sequences. It follows that the probability of 6 changes occurring by chance in coronal-noncoronal clusters without a change in any other cluster is 3/8·3/8·3/8·3/8·3/8·3/8 or 3⁶/8⁶ or 729/262,144 or about 1/360. The probability is actually smaller than this, since the chances must be recalculated after each change, but the point would appear to be established that these assimilations are not sporadic.

³Strictly speaking, this statement is incorrect. The ENGLISH ASSIMILATION RULE applies

assimilation of the same type, however, is found in at least one other Tagalog form. It is reasonably certain that Tagalog *gi-tnáq* 'middle' reflects Proto-Austronesian **teŋaq* 'middle' (the loss of **e* in this form can be explained, but is not directly relevant to the present discussion). Dyen (1953) has also associated *tíŋa* 'half-tael weight' with the same reconstruction. Unfortunately for our purposes these variant shapes of the same original root cannot be assigned to a single underlying form in a synchronic description of Tagalog. Nonetheless, this example provides an important bit of testimony to the explanatory relevance of Bailey's marking convention. Even though *gítnáq* must now be regarded as an underlying form, its known diachronic derivation adds force to the argument that the assimilation in *datíŋ:datnán* is not accidental.

2. Though not so indicated formally, the Tagalog rules discussed above apply only to derived consonant clusters. Given present phonological theory, it is impossible to formulate a rule that will apply only to derived clusters and not to underlying clusters.⁶ While this assumption of the theory may be essentially correct, some modification in it will evidently be required to account for the Tagalog facts. Most Tagalog roots are disyllabic. With relatively few exceptions, underlying consonant clusters consist of 1. the homorganic prenasalization of a nonnasal obstruent in medial position (as in *bunsóq*, *gindáy*, *lambák*, *sunkáad*) or 2. the juxtaposition of consonants in reduplicated CVC monosyllables (as in *bidbid*, *binbin*, *kutkót*, *ŋitŋit*, *patpát*, *títítŋ*). Members of type 1 consonant clusters never differ in coronality and need not enter further in the discussion. Type 2 consonant clusters, on the other hand, can be in the order coronal – noncoronal (as in the first 5 examples). All underlying coronal – noncoronal consonant sequences in Tagalog appear to be of this type. Forms that contain such clusters remain unchanged by metathesis or assimilation.⁷

3. These structurally very different Tagalog rules display what Kisseberth (1970) has referred to as 'functional unity'. Whatever the input, the rules 'conspire' to produce only unmarked outputs. It is an important question whether facts of the kind discussed above permit one to capture the notion 'linguistically significant generalization' solely in terms of

⁶I am indebted to D. M. Perlmutter for having brought this point to my attention.

⁷This statement is in need of qualification. Laktaw (1914) recorded a number of reduplicated CVC monosyllables in which the preconsonantal nasal is unassimilated. Some of the same items appear in Panganiban (1966) with nasal assimilation, as in *banbán* (L), *bambán* (P) 'bast fiber', *bunbón* (L), *bumbón* (P) 'dam of branches and twigs', *bunbún-an* (L), *bumbún-an* (P) 'fontanel'. Furthermore, many of the forms which Blake (1925) lists as having suffixed alternants which have undergone vowel deletion followed by metathesis or assimilation appear in Laktaw either without vowel deletion, or with vowel deletion but no subsequent change in the resultant cluster, as in *banig:banigán* (L), *banig:batgán* (B) 'mat', *ganáp:ganapín* (L), *ganáp:gampán* (B) 'fulfill, do duty', *atíp:atipán* (L), *atíp:aptán* (B) 'roof', *panagínip:panaginpán* (L), *panagínip:panagimpán* (B) 'dream'. At the same time, Laktaw lists *taním:tanmán* 'plant', which has already undergone vowel deletion and metathesis. Between Laktaw (1914) who seems to have recorded a somewhat conservative variety of speech for his time, and Bloomfield (1917) and Blake (1925), we apparently have evidence of a sound change early in its progress. The last stem vowel in suffixed roots was at first deleted in some forms but not in others. Metathesis of successive homonasal noncontinuants in the order coronal – noncoronal evidently occurred before similar heteronasal noncontinuants were affected by assimilation. Sometime between 1914 and 1966 nasals in both underlying and derived clusters began to assimilate to adjacent obstruents if these segments were in the order coronal – noncoronal. This change is apparently still in progress, as not all forms have been affected (as *binbín*, *ŋitŋit*). In NO CASE, however, has metathesis occurred between the members of a cluster in a reduplicated monosyllable, even though there is a sizeable number of such forms in the language. Why reduplication should block metathesis but not assimilation is not immediately obvious, but the facts seem clear enough. An explanation of these facts must await further investigation.

the partial structural identity of rules, as proposed by Chomsky and Halle (1968). Exclusive reliance on the principle of rule collapsibility as an indication of the degree of significant generalization attained in a grammar provides no formal means of recognizing that these Tagalog rules are at bottom manifestations of a single phenomenon.⁸

4. To summarize, Tagalog has 2 assimilation rules and 1 metathesis rule which collectively change all derived clusters of noncontinuants that are in the order coronal – noncoronal. These 3 rules taken together show an exact functional correspondence to the ENGLISH ASSIMILATION RULE. Each Tagalog rule operates on a subset of coronal – noncoronal noncontinuant sequences that differs from its complementary subsets in terms of various characteristics of values for the feature [nasal]. It is observed that a structurally-defined rule may be uniquely exemplified provided that such a proposed rule can be shown to be a special case of a more richly exemplified functionally-defined rule. In conflict with present phonological theory, the TAGALOG METATHESIS RULE is seen to apply to derived consonant clusters but not to underlying consonant clusters. It is suggested that the constraint on this rule results, in some as yet poorly understood way, from a feature peculiar to monosyllabic reduplications. Finally, it is noted that the interrelationship of these facts of metathesis and assimilation in Tagalog cannot be captured if one admits only structural criteria as relevant to the definition of the notion 'linguistically significant generalization'.

Many instances of metathesis and assimilation in Tagalog derived consonant clusters appear to be sporadic. Some of these, like *halik:hagkán*, *hagkín* 'kiss' or *patnógot:panon-tán* 'preceding' are clearly irregular. The mere fact that not all cases of metathesis and assimilation in Tagalog are predictable, however, should not discourage our efforts to account for those cases whose functional regularity can be related to universal marking conventions. A phonological theory incorporating such observations about marked and unmarked clusters thus lends explanatory value to certain types of linguistic change that would otherwise appear to be without motivation.

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⁸Recent proposals as to how a consideration of markedness might be formally incorporated into phonological descriptions have been made by Schachter (1969) and Kisseberth (1970). Schachter has suggested that certain phonological rules (P-rules) have the general form:

$$A \rightarrow Nf / X \text{ — } Y$$

where *f* is any feature, and *N* is a metatheoretically-specified natural value for that feature in the context *X — Y*. Kisseberth, on the other hand, has proposed the use of derivational constraints in phonology as a means of blocking certain theoretically possible rule outputs. The present evidence favors Kisseberth's approach. Thus, given P-rules of the form that Schachter has proposed, one can state that the 'natural' value for the feature [coronal] is minus in the environment preceding a noncoronal segment. But this does not permit us to account for an assimilation of the type *datiŋ:datnán*, even though this change brings about the same unmarking as an assimilation of the type *ganáp:gampán*. To account for facts like the preceding one in terms of contextually determined natural feature values, it would be necessary to state in addition that the natural value for the feature [coronal] is plus in the environment following a coronal segment. What is needed apparently is not a formalism that expresses the natural value for a feature in a given context, but rather one that specifies certain sequences of feature values as unnatural.

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