

THE RISE AND FALL OF A TRANSDERIVATIONAL  
CONSTRAINT: THE CASE OF MALAY\*

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SINOPSIS

*Dalam karangan ini akan dibentangkan hujah-hujah yang menyokong adanya suatu konstren transderivasi fonologi. Akan kami bincangkan bagaimana konstren ini dihapuskan dan mengapa penganalisaan tiap-tiap bentuk morfem itu dibuat berbeda-beda. Selanjutnya akan kami bandingkan contoh konstren ini dengan beberapa konstren transderivasi sintaksis dan morfologi yang telah dicadangkan dan mengenal fungsi umumnya: iaitu mengelakkan kesamaran atau ketidaktegasan. Akhir sekali, akan kami bincangkan hipotesis yang secara universal tidak menerima potensi kesamaran ini dan kami huraikan satu jenis contoh yang, sekiranya wujud, dapat menunjukkan bahawa hipotesis tersebut tidak benar.*

SYNOPSIS

*In this paper we will present evidence supporting the existence of a phonological transderivational constraint. We will discuss the manner in which it was eliminated, and why individual morphemes were treated differently. We will compare this example with several proposed syntactic and morphological transderivational constraints and note their common function: avoidance of ambiguity. Finally, we will discuss the hypothesis of a universal characterization of when potential ambiguity is not tolerated and describe one type of example which, if found, could readily show that this hypothesis is false.*

Johore Malay (JM) is a dialect spoken predominantly in the State of Johore in Peninsular Malaysia. /məŋ/ is a prefix which serves as a transitive marker.

(1) /gari/	'handcuff'	/məŋ + gari/	'to handcuff'
/paku/	'nail'	/məŋ + paku/	'to nail'

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Together with the suffix /i/ or /kan/, the prefix /məŋ/ also can serve as a causative marker.

- (2) /pukul/ 'to beat' /məŋ+pukul+i/ 'to cause to beat'  
 /serah/ 'to surrender' /məŋ+serah+kan/ 'to cause to surrender'

The final nasal consonant of the prefix /məŋ/ and the initial consonants of root morphemes are involved in some interesting phonological interactions; /məŋ/ and /pəŋ/ are the only nasal-final prefixes in JM. All the phonological interactions that occur with /məŋ/ are exactly the same for /pəŋ/.

A phonological rule of nasal assimilation (NA), whereby a nasal becomes homorganic to a following obstruent, is motivated by the following forms; there are no sequences of nasal plus non-homorganic obstruent in JM.<sup>1</sup>

- |        |   |  |   |
|--------|---|--|---|
| (3) a. | /məŋ+bawa/<br>məmbawə<br>'to carry'       | /məŋ+bunuh/<br>məmbunoh<br>'to kill'                   | /məŋ+buru/<br>məmburu<br>'to hunt'      |
| b.     | /məŋ+daki/<br>məndaki<br>'to climb'       | /məŋ+dokəŋ/<br>məndokəŋ<br>'to carry on one's<br>back' | /məŋ+dakap/<br>məndakap<br>'to embrace' |
| c.     | /məŋ+gali/<br>məŋ+gali<br>'to dig'        | /məŋ+gosok/<br>məŋgosok<br>'to rub'                    | /məŋ+gari/<br>məŋgari<br>'to handcuff'  |
| d.     | /məŋ+jolok/<br>məŋjolak<br>'to pole down' | /məŋ+jawab/<br>məŋjawap<br>'to answer'                 | /məŋ+jahit/<br>məŋjahet<br>'to sew'     |

The velar nasal has been chosen as underlying in the prefix /məŋ/ since it appears on the surface when the prefix is combined with vowel-initial roots.

- |     |                                     |                                     |                                  |
|-----|-------------------------------------|-------------------------------------|----------------------------------|
| (4) | /məŋ+ajar/<br>məŋajar<br>'to teach' | /məŋ+usik/<br>məŋusek<br>'to tease' | /məŋ+isi/<br>məŋisi<br>'to fill' |
|-----|-------------------------------------|-------------------------------------|----------------------------------|

When a root begins with a voiceless obstruent, in place of the underlying final nasal of the prefix and the initial obstruent there appears on the surface only a nasal homorganic to the underlying obstruent. To account for this, we propose a rule of voiceless obstruent delation (VOD) which is to be ordered after NA. VOD is formulated in (5a), (5b) gives a sample derivation, and (6a-d) illustrate the application of NA and VOD on a series of roots with initial voiceless obstruents.

<sup>1</sup> The only exceptions to this statement are reduplicated forms and before the suffix /kan/. For examples and details consult Farid (1976).

(5) a.	Voicelsss obst →	ϕ / nasal—	
b.		/məŋ + palu/	
	NA	məmpalu	
	VOD	məmalu	
(6) a.	/məŋ + pukul/	/məŋ + palu/	/məŋ + pusin/
	məmukul	məmalu	məmusəŋ
	'to beat'	'to club'	'to turn'
b.	/məŋ + tari/	/məŋ + tarik/	/məŋ + taruh/
	mənari	mənarek	mənarah
	'to dance'	'to pull'	'to put'
c.	/məŋ + kail/	/məŋ + kayuh/	/məŋ + koyak/
	məŋael	məŋayoh	məŋoyak
	'to bait'	'to paddle'	'to tear'
d.	/məŋ + samun/ <sup>2</sup>	/məŋ + salin/	/məŋ + samar/
	məñamon	məñalen	mñamar
	'to rob'	'to copy'	'to disguise'

Most interesting is the behavior of č-initial roots. In certain roots the č is not deleted (7), while in others it is optionally deleted (8) and (9).

(7) a.	čatu	'to ration'
	məñčatu + i	'to cause to ration (act.)'
	dičatu + i	'to cause to ration (pas)'
	satu	'one'
	məñatu + i	'to cause to unite (act.)'
	disatu + i	'to cause to unite (pas)'
b.	čolek	'to kidnap'
	məñčolek	'to kidnap (act.)'
	dičolek	'to kidnap (pas)'
	solek	'to make-up'
	məñolek	'to make-up (act.)'
	disolek	'to make-up (pas.)'
c.	čərah	'bright'
	məñčərah + kan	'to cause to brighten for (act.)'
	dičərah + kan	'to cause to brighten for (pas.)'
	sərah	'to surrender'
	məñərah + kan	'to cause to surrender for'
	disərah + kan	'to cause to surrender for (pas.)'
d.	čumbu	'to caress'
	məñčumbu + i	'to cause to caress' (act.)
	dičumbu + i	'to cause to caress (pas.)'
	sumbu	'wick'
	disumbu + i	'to cause to wick (pas.)'

<sup>2</sup> A characteristic of most Malayo-Polynesian languages is the alveopalatal pronunciation of *s*. In Malay it assimilates with the palatal *n* and not the alveolar *n*.

- (8) a. *čium* 'to kiss'  
*məñčium-i* } 'to cause to kiss'  
*məñium-i* }  
*\*sium*
- b. *čubit* 'to pinch'  
*məñčubit+i* } 'to cause to pinch'  
*məñubit+i* }  
*\*subet*
- c. *čonter* 'to smear'  
*məñčonter-i* ~ *mənonter+i* 'to cause to smear'  
*\*sonten*
- (9) a. *čambok* } 'whip'  
*sambok* }  
*məñčambok* ~ *məñambok* 'to whip' (act.)
- b. *čəlok* } 'to dip'  
*səlok* }  
*məñčəlok-saku* ~ *məñəlok-saku* 'to pick pocket'
- c. *čuči* } 'clean'  
*suči* }  
*məñcuci* ~ *məñuči* 'to clean' (act.)

The lack of deletion vs. optional deletion of initial /č/ of roots when prefixed by /məŋ/ appears to be determined by the presence in the lexicon of another root with the same phonological make-up as the one with initial /č/ except that the first phoneme is /s/. This lack of deletion served to avoid homophony of the prefixed forms of roots with initial /č/ and those with initial /s/. This is illustrated in (10).

- (10) /məŋ+pVCV/ /məŋ+tVCV/ /məŋ+kVCV/ /məŋ+sVCV/  
*məmVCV* *mənVCV* *məŋVCV* *məñVCV*  
 /məŋ+čVCV/  
*məñčVCV*

Note that the homorganic nasals are sufficient to distinguish roots with the other initial voiceless obstruents /p t k/.<sup>3</sup> In a sense in these cases the opposition in place of articulation is displaced from the obstruent to the nasal. However, in the case of /s/ and /č/ were the deletion to take place in both cases this opposition would be neutralized. What we have here is an interesting and unusual phenomenon, i.e. the application of a phonological rule is sensitive to whether or not another root exists in the lexicon. This type of phenomenon might be referred to as a transderivational con-

3 However /k/-initial roots and vowel-initial roots both show up with the velar nasal. For example, /məŋ+kawal+kan/məŋkawalkan 'to cause to guard for' vs. /məŋ+awal+kan/məŋawalkan 'to give priority to' (extremely rare). Though in principle this creates homophony, it so happens that there are very few corresponding pairs.

straint. It is only with reference to another derivation that the impending homophony of surface forms can be avoided.

In (8) we see roots with initial /č/ where no corresponding root with initial /s/ exists; in this case the deletion of /č/ is optional. We assume in this case that the original situation was these cases did delete and that the unusual transderivational constraint is on its way out and is being replaced by a lack of deletion of /č/ in all cases. At the present time the variant with /č/ retained is more frequent and is especially found in foreign borrowings, e.g. /mən + čelen/ → *məñčelen* 'to challenge' and not \**məñelen*. We assume that the historical sequence of stages is represented in (11a-c).

(11a) Regular deletion; all voiceless obstruents.

(11b) Deletion of /č/ blocked where corresponding root exists with initial /s/.

(11c) Deletion of /č/ blocked everywhere, i.e. /č/ doesn't delete.

The data in (9) provide support for the historical analysis proposed thus far. In these cases we find variation not only in the prefixed form, with vs. without č, but also in the form of the root. Here we assume that the root originally had an initial /č/. The /s/-initial root would be a back formation. As stage (11c) becomes the rule, a surface form like *məñambok* would be interpreted as coming from a root with initial /s/.

The question immediately arises as to why some /č/-initial roots, those in (8), without corresponding /s/-initial roots, would be treated differently from others, those in (9). We assume that the difference is connected with the relative frequency of usage of the prefixed vs. unprefixed forms of these two classes. A glance at the glosses in class (8) will reveal that the causatives here would have an extremely limited sphere of usage. Presumably the causatives in this group would be heard less than 1/100 as frequently as the corresponding non-causative; conceivably, they might not be heard even once in a speaker's lifetime. In class (9), however, the transitives would have a much wider scope of application, and thus, presumably, could play a much greater role in the speaker's determination of an underlying form for this root.

What must be emphasized is the method of avoidance of the potential homophony. On the basis of the later development we infer that the individual lexical items were not merely marked as exceptions, but rather a transderivational constraint was instituted. A situation came to exist whereby one metaphorically "checked" the lexicon for the presence of another root and if one existed, the rule was blocked. Later this presumably costly-to-the-grammar "check" was eliminated. One may assume that the fact that this potential ambiguity involved a significant class of roots, at least twenty pairs, may have been involved in the method of avoidance.

What we have proposed is the rise of a transderivational constraint serving to avoid homophony between prefixed forms of /č/ and /s/-initial

roots by blocking the application of a phonological rule, VOD, in those /č/-initial roots. This transderivational constraint is being eliminated by the generalization of the non-application of VOD to all instances with /č/. As a result, some prefixed forms which are semantically non-peripheral, exhibiting the earlier deleted form of the root have been interpreted as being from underlying /s/-initial roots.

Several syntactic transderivational constraints have been proposed recently. Lakoff (1973) illustrates that some forms of ambiguity are not permitted in natural language with (12).

(12a) John and Mary entered the room, and he took off his coat.

(12b) \*John and Bill entered the room, and he took off his coat.<sup>4</sup>

In Grinder and Postal (1971) the term transderivational is used to describe the constraint that would block the derivation in (12b) in either of its readings. It is transderivational in that the ambiguity is not a property of a single derivation. The purpose of this instance of a transderivational constraint appears to be to avoid referential ambiguity.

Hankamer (1973) is concerned with characterizing what kind of ambiguity is unacceptable. He formulates *The Structural Recoverability Hypothesis*: "Deletion rules involving variables are universally subject to a transderivational condition which prevents them from applying in such a way as to introduce structural ambiguity."<sup>5</sup> He notes two ways in which this condition can be manifested. First, both, or all, ambiguous outputs can be blocked. Hankamer cites as an example that although there is a rule which deletes constituents from a comparative clause under identity with a constituent marked by the comparative morpheme *more* or *-er* if the comparative clause contains a V+NP+NP sequence, neither NP can be deleted. This follows since deletion of a constituent of the type X from a sequence XX would result in structural ambiguity.<sup>6</sup> Consider (13a) in which deletion is blocked whether (13a)'s source would correspond to (13b) or (13c).

(13a) \*In Berlin there are more widows, than matchmakers give wealthy old bachelors.

(13b) ———, than matchmakers give widows wealthy old bachelors.

(13c) ———, than matchmakers give wealthy old bachelors widows.

4 Lakoff (1973 : 442). It should be noted that (12b) may be acceptable if *he* is somehow disambiguated. This disambiguation could be a result of prior reference; for example, if (12b) was preceded by the utterance. "You know that crazy guy Bill." This disambiguation might also be the result of an extralinguistic gesture like pointing. What is involved here is the interplay of syntax and pragmatics, in particular the process of pronominalization and its function of referring. The constraint only holds if the pronoun *he* is not otherwise disambiguated.

5 Hankamer (1973 : 40)

6 *Ibid.*

The second means by which structural ambiguity is avoided is by blocking only one derivation. Hankamer cites an example of this involving Gapping:

- (14a) Jack calls Joe Mike and Sam Harry.  
 (14b) ———, and [Jack calls] Sam Harry.  
 (14c) ———, and Sam \*[calls Joe] Harry.<sup>7</sup>

(14a) can only be derived from (14b) not (14c). To account for this type of solution Hankamer proposed *The Peripheral Gap Principle* "If any interpretation is possible for an unacceptably ambiguous structure it will be the interpretation under which the location [of the deletion] is peripheral rather than internal."<sup>8</sup> Hankamer does not suggest a possible motivation for this principle, nor does he deal with the question of why one of the method rather than the other is used in a particular case. Notice in the example from Malay the second type of avoidance is utilized, i.e. only the deletion of /č/ is blocked. This raises the important question of why /s/ and not /č/ is allowed to delete; the only explanation that we can offer is that /s/ is a more frequently encountered phoneme than /č/. The correctness of Hankamer analyses are not in question here, they are presented to illustrate one type of ambiguity potentially caused by the application of a syntactic rule which may be avoided by means of a transderivational constraint.

In 'A Case of Systematic Avoidance of Homonyms' Kisseberth and Abaskeikh (1974) propose a transderivational constraint which applies to the application of a morphological rule. Kisseberth and Abaskeikh argue that the normal means of forming the past tense of stems ending in l or ɿ with an applied suffix in Chi Mwi: Ni is ablaut. However, if the ablauted form would be identical to the past tense of the non-applied stem, then a suffixed form of the past tense is employed. Compare /mo:l/ 'shave' which forms the past of the applied in the normal manner, with /su:l/ 'want', where were the past of the applied to be formed in the normal manner, i.e., by the ablaut for stems ending in l or ɿ, it would be identical to the past of the non-applied. Instead, /su:l/ forms the past of the applied by means of suffixation.

- |      |                     |              |                         |
|------|---------------------|--------------|-------------------------|
| (15) | past of non-applied | applied stem | past of applied         |
|      | /mo:l/              | mo:z-el-e    | mo:l-el-                |
|      | /su:l/              | sul-i:l-e    | su:l-il-                |
|      |                     |              | *sul-i:l-e sul-il-i:l-e |

Notice the application of a rule change ɿ → z in the past tense. One of the strongest arguments in favour of Kisseberth and Abaskeikh's is that in cases where the normal ɿ → z rule exceptionally does not apply to a morpheme, the suffixed form of the past of the applied occurs, since ablaut would create a past tense applied form which was identical to the past

<sup>7</sup> *Ibid.*, p. 31.

<sup>8</sup> *Ibid.*, p. 51.

tense non-applied. This transderivational constraint serves to avoid morphological ambiguity.

In the foregoing discussion transderivational constraints have been proposed to account for referential, structural, morphological and lexical ambiguity. They have been proposed as conditions on syntactic, morphological and phonological rules. The common denominator of all these proposed transderivational constraints is the *avoidance of ambiguity*.

In order to claim that avoidance of ambiguity is always the motivation of a transderivational constraint, i.e., that it is the only motivation of a transderivational constraint, one would have to show that all proposed transderivational constraints which have other functions are wrong, i.e. that some other device is more appropriate to account for the data in each case. This will not be done here; we have not surveyed all the proposed transderivational constraints.

We will, however, question the appropriateness of one transderivational constraint proposed in an article cited above. Grinder and Postal propose a transderivational constraint to account for the ungrammaticality of (16b) and (16c).

(16a) The wheat Harry bought seems to be regenerating itself.

(16b) \*The oats Harry bought seem to be regenerating itself.

(16c) \*The oats Harry bought seem to be regenerating themselves.

(16d) The oats Harry bought seem to be self-generating.<sup>11</sup>

They propose constraint (65): "A derivation will be ill-formed if it contains a structure in which an NP whose head is the lexical item OATS is the Antecedent for coreferential anaphoric pronouns which morphologically mark the contrast singular/plural."<sup>9</sup> They claim that "A constraint like (65) is not representable within terms of any hitherto proposed theory of linguistic rules. It has a property we can tell transderivational, that is, the definition, in particular, the phrase, 'morphologically mark the contrast singular/plural', must refer to the set of derivations, not just to the properties of the trees internal to derivations."<sup>10</sup> In other words what they are claiming is that one must check the other sentences in which the pronouns *itself* and *themselves* are used. We do not see why these other sentences or these derivations must be checked, and thus why a transderivational constraint must be invoked here.

Whether or not the pronouns *itself* or *themselves* can be used to refer to oats is a function of whether certain grammatical (or semantic) properties of these morphemes match. Thus the reason *itself* or *themselves* cannot be used to refer to *oats* is the same kind of reason that *themselves* cannot be used to refer to *wheat* or that *she* cannot refer to *Bill*. Regardless of the

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9 Grinder & Postal (1971 : 291).

10 *Ibid.*, p. 292 FN 24.



manner of representing these features, which features are utilized, and how they are introduced, it seems to us reasonable to assume that the reason that *itself* and *themselves* cannot be used to refer to *oats* is that some features of these morphemes do not match, and thus has nothing to do with other derivations. We feel that the appeal to a transderivational constraint here is unwarranted.

We have seen several cases of ambiguity which have been avoided in natural languages, yet we know that some ambiguity is tolerated. Either there is a way to characterize those instances where it is avoided or there is no difference in kind between the two classes. We will refer to the first possibility as the Universal Non-Toleration Hypothesis (UNH). UNH could be disproved by two examples of potential ambiguity which are alike in every way except that one is avoided and the other is tolerated. The problem of what characteristics we compare, and how to evaluate when they are the same is, of course, considerable. In (17) we list some tentative characteristics of the instance presented above.

- (17a) The ambiguity is introduced by the application of a phonological rule.
- (17b) The ambiguity which is introduced is lexical, and the ambiguous items are roots, rather than affixal morphemes.
- (17c) Both instances which create the potential homophony were introduced by the application of the same rule.
- (17d) This phonological rule is of a more general nature, i.e. other segments are also affected by its application.
- (17e) This is a rule of deletion.
- (17f) A previous assimilation results in a displaced contrast which would be suspended were the rule to apply regularly.
- (17g) The potential ambiguity does not involve only an isolated example, but involves a whole class; presumably the number of examples or size of the class could be pertinent.
- (17h) Some instance of the application of this deletion rule to the pertinent segments do not introduce ambiguity.

The reality of UNH and, in particular, the characterization of when ambiguity is unacceptable would be very revealing about language. We assume that not a single union of characteristics, but a set of separate union would be necessary to define the environment for non-toleration, i.e., a different set of characteristics would be necessary to define it when it was introduced by a phonological, rather than a syntactic rule or when the ambiguity is structural, rather than lexical. Not only is this assumption intuitively appealing, but the structural ambiguity ruled out by Hankamer, which would result from the deletion of a constituent X from a sequence XX, does not seem to apply for phonological rules, since degemination is a common phonological process.

The characteristics listed in (17) can be compared with other instances of the avoidance of ambiguity in order to make stronger claims about the ultimate nature of this universal characterization. At the present stage all we may do is suggest that if the characteristics (17a-g) are found in an example where ambiguity is allowed, UNH is invalid.

#### REFERENCES

- FARID M. ONN, 1976. *Aspects of Malay Phonology and Morphology*. Unpublished University of Illinois Ph.D. dissertation.
- GRINDER, J.T. and P. POSTAL. 1971. 'Missing Antecedents.' *Linguistic Inquiry*, 2.3, 269-312.
- HANKAMER, JORGE. 1973. 'Unacceptable Ambiguity.' *Linguistic Inquiry*, 4.1, 17-68.
- KISSEBERTH, CHARLES M. and MOHAMMAD IMAM ABASHEIKH. 1974. 'A Case of Systematic Avoidance of Homonyms.' *Studies in the Linguistic Sciences*, 4.1, 107-124.
- LAKOFF, GEORGE. 1973. 'Some thoughts on transderivational constraints.' In B.B. Kachru, R.B. Lees, Y.M. alkiel, A. Pietrangeli & S. Saporta (eds). *Issue in Linguistics: Papers in Honor of Henry & Renee Kahane*. University of Illinois Press.