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Editorial

I apologise for the late appearance of this volume, dated 2001, but not appearing until well into 2002. You don't want to know. You really don't.

Three of the papers in this volume have been presented as conference papers, 'Whither the Thesaurus?' at The Australex conference in Canberra in October 1999, 'How and Why the Phonological Word and the Morphosyntactic Word do not Coincide' at the Deutsche Gesellschaft für Sprachwissenschaft conference, Marburg, in March 2000, and 'vP-aspect: Aspectual Base Properties of Indonesian Predicates' at the 9th International Conference of Austronesian Linguistics in Canberra, January 2002. The fourth paper, 'Neutralisation of DRESS and TRAP before /l/ in New Zealand English' is one of a number of interesting papers on neutralisation that students have produced over the past few years. Unfortunately, the format of the courses has never allowed for a full-scale study of any of the potential instances of neutralisation which are found in New Zealand English, though papers like the present one suggest that there is much to be discovered.

Laurie Bauer

Whither the Thesaurus?

Laurie Bauer

When Susan Lloyd, the editor of the 1984 edition of the Penguin Roget's Thesaurus, visited New Zealand, I was interested to hear her say that she thought that people today did not classify the world in the way in which people had in Roget's day. In particular, she felt, people today wanted more lists of superordinates and hyponyms. I do not know whether she was right that this is a matter of period of history, or whether it is simply a matter of Roget's own individual view of classifying the world. But her comment made me reflect on the difficulty for the user in getting the most out of a thesaurus. Similar reflections must have been in the minds of the publishers of reference books for the last 40 years, because there have been considerable innovations made in the way thesauruses are presented since the early 1960s when the word thesaurus was still synonymous with Roget. Some of the changes that have been made to a number of thesauruses are that

- Font size has increased; this may be seen as a parallel development to the improvement in typographical presentation of dictionaries following the publication of Hamlyn's *Encyclopedic World Dictionary* in 1971.

- Quotations and proverbs have been added; this is an interesting development, which I shall consider at some length in a moment. In some thesauruses, illustrative phrases have been added.

- Alphabetical presentation has become more common; although some thesauruses such as the Bloomsbury one retain the thematic presentation of the type used in Roget, the major publishing houses such as Oxford and Collins seem to have adopted the alphabetical listing style. Macquarie has adopted a compromise with the themes listed alphabetically.

- lists have multiplied; the 1962 Penguin Roget's Thesaurus does contain a list of animals and birds, but it makes no attempt at exhaustiveness; it does not contain a list of artists or composers. The 1963 Collins Roget's Thesaurus contains a much fuller list of animals and birds, and also contains a list of artists (simply names) but not one of composers.

One interesting by-product of all of this is that the vocabulary size of the thesauruses must have declined. Certainly, one of my personal complaints about the 1995 Collins Thesaurus is that it simply does not contain enough words for my purposes. Expanding the font size, adding lists and quotations, inevitably means that there is less room for synonyms in a comparably-sized volume; alphabetical presentation must lead to multiple listing of the same words to a much greater extent than was necessary in the thematic style of presentation, because in principle a word with n synonyms will be listed $n + 1$ times, once as each of the synonyms in turn becomes a headword. (In practice, of course, not every synonym becomes a headword, which would seem to limit the value of the alphabetical presentation.)

We can speculate about why publishers should have made these changes. Presumably the thematic presentation of the original Roget was considered to

be too difficult for the average user to deal with efficiently, involving as it does a double look-up. Presumably also it was taken that the average user did not need the large vocabulary that was present in thesauruses earlier in this century — and is still attempted in some. There is a kind of paradox implicit here: thesauruses are presented as tools for increasing our active vocabularies, yet it is dangerous to use a word from a thesaurus that one does not recognise, since in most such works no information is given on usage.

The publishers may have carried out some survey of the ways in which thesauruses are used. There are a few possibilities, and the demands that each places may be distinct.

- Word-games; I include here crossword puzzles, perhaps as the major category, although other games may require the use of synonyms and antonyms.

- Factual writing; the use of precise terms rather than vaguer every-day words often helps factual writing become more concise. The proliferation of colourful, often multiple-word and slangy, terms in recent thesauruses may actually make this task more difficult.

- Creative writing; this is the use that is implicit in the cover decoration of the 1984 Penguin Roget's Thesaurus, where a stanza by Burns is displayed in cursive script, with a crucial word corrected in red several times, to give the familiar final version. If a thesaurus is used in this way, there may be many constraints on the choice of words (connotations, rhyme, alliteration, etc.), and variation may be seen as a positive value in its own right.

The changes that have been occurring in thesauruses, appear to be driven by disparate ideas about how the works will be used. The multiplicity of lists, for instance, appears to be more useful for word-games than for other uses, although they may in some cases also allow for factual precision; the inclusion of quotations and proverbs appears to be less useful for word-games, and seem to reflect spoken language more. The inclusion of quotations, illustrative phrases and proverbs also seems to be providing material on usage that thesauruses previously did not include, and thus to be extending the uses to which a thesaurus might be put. But if that is the purpose, then it is not well fulfilled for the following reasons.

- The number of quotations and proverbs given is remarkably restricted; since something that is a familiar quotation to me need not be one to you and vice versa, a selection of quotations (selected for their pithiness?) may provide pseudo-definitions but does not provide genuine material on usage that a larger number of quotations would provide. If the quotations are to illustrate actual usage, then the literary and/or humorous snippets provided may not actually be as useful as the more humdrum examples listed in the *OED* or made up in dictionaries for foreign learners.

- Lexical collocations such as *dry* collocating with *wine, clothing, weather, ice,* etc., are not provided; this is crucial material on usage and if it is usage that the thesaurus is hoping to capture, such examples are vital.
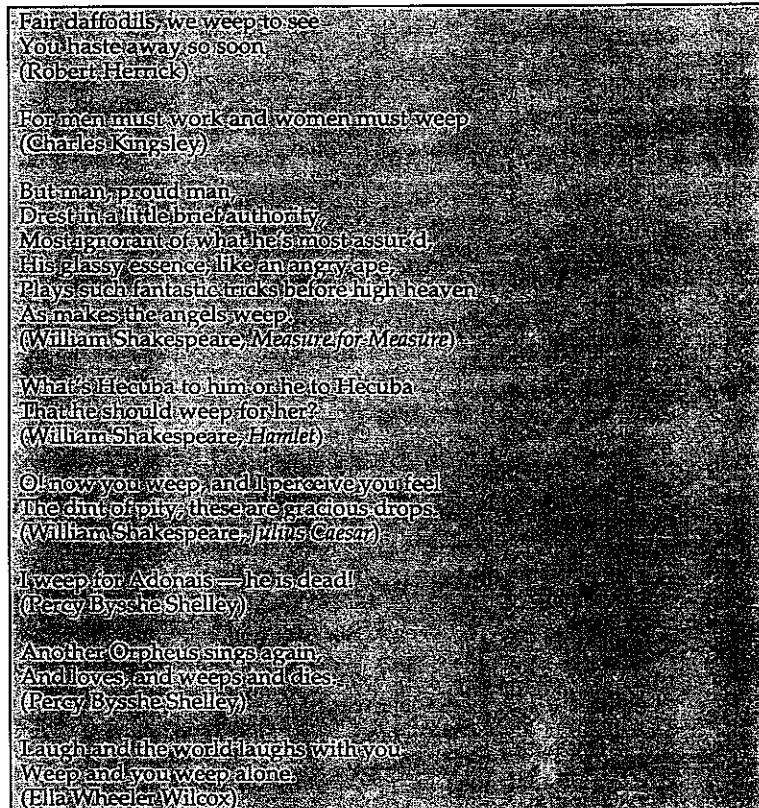
- Grammatical patterns are not provided; a consideration of the grammatical information provided by dictionaries such as COBUILD and BBI, as well as *the Oxford Advanced Learner's* and the *Longman Dictionary of Contemporary English* makes it clear just how much important information is not available from standard dictionaries and thesauruses.

- Material on disputed usages is not provided; dictionaries have recently started to include a lot of such material, and there are specific books of usage, including style manuals and works such as Fowler.

Where collocational material and grammatical patterning are concerned, I believe there is still room for substantial improvements in reference works. Consider, as a simple example, the verb *weep*. Even assuming that we have a dictionary definition of *weep*, the following information is needed to give a better picture of the use of the verb:

- The verb *weep* is formal or literary; heroines in romantic historical novels may weep — most people today cry.

- The subject of the verb can be any rational being. The use of an animal name as the subject of *weep* would be a case of personification. A fortiori, any other type of subject would involve personification. Although crocodiles used to be said to weep, this now sounds dated to my ear.

- The subject of the verb can be the eye, though usually the eye of a rational being.

- There is a parallel use where the subject can be any type of wound which oozes fluid: *wound, cut, gash*, etc. are possible subjects in this usage. Figuratively it may still be possible to talk about one's heart weeping, but this is extremely literary. Walls which ooze moisture may be said to weep, as may trees whose branches have been cut off. Explosives are said to weep if they exude moisture, and welds may also be said to weep if fluid seeps through them.

- Within the class of rational beings, there is a fixed phrase *Jesus wept*, with the past tense obligatory, whose meaning is not compositionally determinable from the meanings of the subject and the verb.

- The verb is normally used intransitively. However, where it is used transitively it is almost always used with a cognate object which must be sub-modified. Note the contrast between *He sang songs* which does not demand sub-modification of the cognate object, and *?She wept tears*,[1] *She wept hot tears, He wept tears of joy, She wept crocodile tears*. BBI and the OED include a transitive use *weep oneself to sleep* which I do not have in my usage. Similarly, as far as I am concerned, *cry* has now replaced *weep* in *weep one's eyes out*.

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[1] It has been suggested to me that *She wept a tear* is better than *She wept tears*, and acceptable. Personally, I remain unconvinced, which at least suggests that it is not as likely as an instance with a submodified noun.

- With intransitive usage, the following preposition may be *for* (a person, a loss, an emotion) or *over* (a person, an event) or *with* (an emotion, usu. joy).

- There is a quotation from Ella Wheeler Wilcox that has acquired the status of a proverb: *Laugh and the world laughs with you, weep and you weep alone.* There is a genuine proverb, now not widely used, I think, that something is *enough to make an angel weep*.

- There are various well-known quotations from Shakespeare to Shelley which include the word *weep*.

> Fair daffodils, we weep to see
> You haste away so soon.
> (Robert Herrick)
>
> For men must work and women must weep
> (Charles Kingsley)
>
> But man, proud man,
> Drest in a little brief authority,
> Most ignorant of what he's most assur'd,
> His glassy essence, like an angry ape,
> Plays such fantastic tricks before high heaven
> As makes the angels weep.
> (William Shakespeare, *Measure for Measure*)
>
> What's Hecuba to him or he to Hecuba
> That he should weep for her?
> (William Shakespeare, *Hamlet*)
>
> O, now you weep, and I perceive you feel
> The dint of pity, these are gracious drops.
> (William Shakespeare, *Julius Caesar*)
>
> I weep for Adonais — he is dead!
> (Percy Bysshe Shelley)
>
> Another Orpheus sings again,
> And loves and weeps and dies.
> (Percy Bysshe Shelley)
>
> Laugh and the world laughs with you
> Weep and you weep alone.
> (Ella Wheeler Wilcox)

Most of the information given here is well-known and is listed in appropriate publications. But if we want to produce a full word-book, it seems to me we must go beyond what the current dictionary and the current thesaurus provide between them. It also seems to me that the technology is now available to do this.

Imagine, if you will, a CD-ROM with a suitable search-engine which includes in its databases

(a)   a standard dictionary

(b)   a standard dictionary of quotations

(c)   a standard dictionary of proverbs

(d)   a standard biographical dictionary

(e)   a standard gazetteer

(f)   the collocational and grammatical information from a good EFL dictionary

(g)   information on usage from style manuals and the like

In principle, it ought to be possible to build a thesaurus on the headwords and definitions of a standard dictionary; in fact, the definitions would have to be re-written in some suitable standard format to achieve this, but the thesaurus could then be seen as an epiphenomenon of the other information available. For lists of composers or artists, it would simply be necessary to enter 'composer' or 'artist' in the search engine to get lists from the biographical dictionary. Normal Boolean searching could limit this to just French artists, for example, or just artists born in the 19th century. Similarly, a search of the gazetteer would give a list of British ports or of Italian rivers. Searching for many items would also call up the collocational material — formatting this for the user is a major problem in printed EFL works, and would remain so in a CD format, but because the CD can store more information, space limitations would not be so severe, and it might be possible to give rather more help to the user. Using a full dictionary of quotations would not only provide rather more collocational material, but would mean that the selectivity of current thesauruses would become outmoded. It would be even more useful to the reader trying to find out how to use a word if non-epigrammatic quotations from corpora or 'good writers' were added to this material. The resultant work would be of value not only to the three groups of users mentioned above, but also to ESL/EFL users at all levels. The material could be made even more useful by making the search-engine capable of grep-type searches with variables, so that crossword-puzzlers or Scrabble-players could search for words containing '_ t _ a _' (or whatever) — even if it would spoil the fun for the dedicated puzzler.

With the advent of powerful computing in so many homes, and the CD-ROM which allows so much material to be stored in so little space, it seems to me that it ought now to be possible to create a word-book which is neither dictionary nor thesaurus but which does the job of both and is more powerful than the current combination of both. It would be a word-encyclopedia. Now all we need is a publisher willing to pay for the development of such a tool.

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How and Why the Phonological Word and the Morphosyntactic Word do not Coincide

Laurie Bauer

Introduction

It is hard to think of a phonological feature more closely correlated with the word than vowel harmony (VH). In most languages that show such harmony its domain is stated to be the word, and VH is often defined with reference to the word (thus implicitly Carr 1993: 119; Gussenhoven & Jacobs 1998: 191). There are, of course, exceptions. In Wari' (Everett & Kern 1997: 413) vowels are identical when there is an intervening [ɾ], but not inevitably, only about 73% of the time. While this may exhaust the vowels in the word, it need not. Thus the domain of harmony is smaller than the word. In Somali (Saeed 1987: 19) the domain of VH is greater than the word, spreading from nouns, verbs and adjectives to associated conjunctions, determiners, classifiers, auxiliaries, etc. Such languages are of interest when considering VH globally, but do not detract from the basic equation of VH with the word. Yet we will see that the phonological word defined in terms of strict VH and the morphosyntactic word do not seem to match entirely, and, what is more, that there are good reasons for the mismatches, although the reasons for mismatches vary slightly from language to language.

Languages

I will consider in detail the VH systems in four languages in this paper: Finnish (a Finno-Ugric language spoken in Finland), Turkish (a Turkic language spoken in Turkey), Turkana (a Eastern Nilotic language spoken in northern Kenya) and Chukchee (a Chukchee-Kamchatkan language spoken in the Kolyma region of North East Siberia).

Finnish has an eight-vowel system, as shown below, with the added possibility of distinctive length:

i y u

e ø o

æ ɑ

VH in Finnish is front-back harmony, with /i/ and /e/ being neutral vowels which may co-occur with either series. Morphologically, Finnish is exclusively suffixing, and suffixes typically have two allomorphs, one containing only vowels from the front series, the other containing only vowels of the corresponding height from the back series. VH spreads left to right. Roots which contain only neutral vowels typically take front harmonising affixes (although this may be changing in new coinages Sulkula & Karjalainen 1992: 378):

pøytæ	'table'	pøytænæ
poutɑ	'fine weather'	poutɑnɑ
tie	'road'	tiellæ

(Ringen & Heinämäkki 1999: 305-6).

Turkish has an eight-vowel system, as well, but a very different one:

i y ɯ u

e ø ɑ o

Turkish has two patterns of VH, back (palatal) harmony and roundness (labial) harmony. Palatal harmony works as follows: if the first vowel in a word is [+back], then so are all the others. The labial harmony is more complex, even if we omit the cases where consonants can impose labial harmony: if the first vowel in a word is unrounded, then so are all the others; but if the first vowel in a word is rounded, the following vowels are rounded if they are also [+ high], but become unrounded as soon as they are [- high], Again, this implies that harmonic patterns spread from left to right. Turkish, like Finnish, is exclusively suffixing. The VH patterns mean that some affixes, those with open vowels, have two allomorphs, one with unrounded front vowels, one with unrounded back, such as the plural marker *-ler/-lar*. Other affixes, those with close vowels, have four allomorphs, such as the first person singular possessive marker, *-im/-ym/-um/-um*.

el	'hand'	eller	'hands'
tarla	'field'	tarlalar	'fields'
el	'hand'	elim	'my hand'
alɯn	'forehead'	alɯnɯm	'my forehead'
køj	'village'	køjym	'my village'
kojun	'bosom'	kojunum	'my bosom'

(Lewis 1967)

Turkana has an nine-vowel system with every vowel occurring in contrastive voiced and voiceless versions, in which the harmonising feature is the tongue-root position. The approximants [j] and [w] act as [+ ATR] vowels, and vowels preceding them are also [+ ATR]. The vowel [a] has no [+ ATR] counterpart, and vowels preceding [a] in a word are always [- ATR].

i u

ɪ ʊ

e o

ɛ ɔ

a

Turkana has both prefixes and suffixes. Prefixes are all weak, and harmonise with the root to which they are attached. Suffixes are said to be either dominant or weak. Weak suffixes harmonise with the root to which they are attached. Dominant suffixes, which may be either [± ATR], all contain [- high] vowels. Suffixes attached outside a dominant suffix can only be weak, and thus harmonise with the stem to which they are attached. Vowels in roots harmonise with dominant suffixes. It follows that VH in Turkana does not work simply left to right, but cyclically from the root outwards.

ibusokiṇ
e-ibus-o-kin-ị
3-fall-link-DAT-VERB
'it has fallen down'

ibusɔkɪna
e-ibus-o-kin-a
3-fall-link-DAT-ASP (dominant)
'it has thrown itself down'

(Dimmendaal 1983: 25)

Chukchee has a six-vowel system as shown below.

i u

e ə o

a

Vowels are divided into two sets, recessive and dominant. Confusingly, /e/ and /ə/ may belong to either set, though /i/ and /u/ are always recessive and /o/ and /a/ are always dominant. If there is one dominant vowel in a word, all the vowels in that word become dominant: /i/ is replaced by /e/, /u/ is replaced by /o/ and non-dominant /e/ (which may derive historically from /æ/) is replaced by /a/. /ə/ does not alternate, but may act as either a dominant vowel and trigger dominant harmony or as a recessive vowel and leave vowels recessive. Even roots which lack a vowel altogether may trigger dominant harmony. The dominant vowel which triggers dominant harmony may occur anywhere in the word, so that VH spreads outwards from a dominant vowel (or vowelless morph).

ətləg	'father'	ətləge (*ətləga)	'father (erg.)'

təlek	'to move'	təlagərgən	'step, path'
cəmce	'near'	cəmcaɲ	'nearer'

(Spencer 1999)

Exceptions

I want now to look at classes of exception to VH which affect more than one of these four languages.

Connected speech

Trivially, it may be that in any given text adjacent words have the same harmonic pattern, and therefore that a particular harmonic pattern may, on occasions, not define word boundaries. Vroomen et al (1998: 146) found in one text of Finnish that fewer than 20% of word-boundaries are locatable solely on the basis of VH. A brief glance at a Finnish text shows that sequences of three or four words with the same harmony are not infrequent. It can be argued, of course, that this does not affect a native speaker's competence in recognising words or the domain of the VH, but it does mean that VH cannot be associated exclusively with the domain of the word.

Foreign words

Although many foreign loans accept native patterns of VH, especially well-established words, there are loans which break the VH patterns in Finnish and in Turkish. In Finnish, words like /olympia/ 'olympic' and /tyranni/ 'tyrant' are roots which are disharmonic (Ringen & Heinämäkki 1999: 306). In Turkish a root such as *feribot* 'ferry' breaks both palatal and labial harmonies (Lewis 1967: 17). However, according to Bogoras (1922: 649) loan words in Chukchee are all harmonic, e.g. *komak* 'paper' from Russian *bumaga*, *yekut* 'Yakut' from Russian *Wkut'*, and Dimmendaal (1983) doesn't mention loan words in relation to VH in Turkana.

The general rule for suffixal harmony with disharmonic roots in Finnish and Turkish seems to be to harmonise with the last vowel in the root (in line with the general left-to-right spreading of VH in these languages). Ringen & Heinämäkki (1999: 308-9) found general agreement among their informants that a final back-harmonic vowel triggered back harmony in following suffixes, though a final front-harmonic vowel did not universally trigger front harmony. We might interpret this by saying that back harmony seems to be the unmarked choice. Lewis (1967: 19) comments that although it used to be the case in Turkish that loan roots with final-syllable back vowels sometimes took front harmony, this usage is now dying out.

Exceptional native words

According to Lewis (1967: 17) Turkish has about 10 exceptional native words which are not harmonically consistent. Some of these are lexicalised compounds (see below), others have harmonic alternatives. Exceptional words in Chukchee all appear to allow /i/ as a neutral vowel, e.g. *yatirgn* 'the act of

coming' from *yet* 'to come'. No such words are reported in any of my sources for Finnish.

Words containing invariable affixes

Lewis (1967: 17) lists seven invariable suffixes in Turkish, which thus are disharmonic in some words. Some of these suffixes are said elsewhere to be enclitic, since they are exceptional in their behaviour with regard to stress as well. Bogoras (1922: 651) lists two particles in Chukchee which resist the force of harmony.

Compounds

In Finnish, Turkish and Turkana compounds act as single morphosyntactic words but as two or more words as defined by VH. (Compounds are very rare in Turkana, but the general principle applies.) In Chukchee, on the other hand, compound words are within the domain of vowel harmony.

> êeq-êeq- alvam-valˆn
> tʃiq + elve + tva + ln
> excessively + different + be + PERS
> 'quite extraordinary being'

(Bogoras 1922: 892)

> tʃot-tagnetɪ
> tʃot + tegn + eti
> pillow + edge +ALL
> 'to the pillow's edge (i.e. to the outer tent)'

(ibid: 894)

Discussion

Comparing the categories

In all of the languages discussed, VH is a pervasive phenomenon; and yet in none of these languages does it function without exceptions. The strongest apparent exception is the case of compounds. Here we have to ask ourselves precisely what the domain of the VH is, or what its function is. In Chukchee VH really does seem to delimit the morphosyntactic word; in the other languages considered, it appears to delimit the lexical unit (the non-compound lexeme).[1] Once this domain is properly explained, it becomes clear why the morphosyntactic word does not fully match the domain of VH in languages like Finnish, Turkish and Turkana, but why the two nevertheless so often coincide.

Although my sources do not give sufficient evidence for me to be sure of the historical chain of events, it seems likely that invariable affixes arise from

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[1] We appear to lack a suitable term for this element: LEXEME includes compound lexemes, BASE may also include compound bases, STEM excludes inflectional affixes, MORPHEME is too small a unit, WORD is far too ambiguous. I use LEXICAL UNIT here as a not very felicitous attempt to plug this gap in our terminology.

lexical units diachronically, and have simply retained the harmonic properties of the original constructions. In other words, diachronic morphological processes are not necessarily reflected in VH. As far as Turkish is concerned, this suggestion is supported by the fact that many of the exceptional items are also exceptional with regard to their stress, which in general has a demarcative function in Turkish, falling on the last syllable of the word. Where two phonological phenomena treat a particular string as being a sequence of two words but morphosyntax treats the same string as a single word, it seems at least a reasonable hypothesis that this is due to morphosyntactic change.

The other major category of problems for VH systems is provided by foreign elements, where the source language does not have a corresponding pattern of VH. Again, the precise diachronic process is not clear from sources, so we must speculate, but it seems that (a) VH systems will adapt loan words within certain limits and that (b) at some point, foreign loan words can have the effect of reducing the productivity of the VH process. Alternatively, we might see loan-phonology as creating a system which is distinct from native phonology, with VH being restricted to the native tier.

If we look at other languages, or even more widely in the languages we've examined, we find similar cases of exceptions from general phonological principles. In Swahili, where stress regularly falls on the penultimate syllable, there are some exceptions for Arabic loan words (Ashton 1944: 5). In Finnish, the general principle of first syllable demarcative stress and then subsidiary stress on every odd-numbered syllable is broken in compounds, which take a subsidiary stress on the first syllable of the second element (Sulkula & Karjalainen 1992: 381). In Tongan, compounds provide an exception to the rule of penultimate stress in the word (Churchward 1953: 5). In Turkish the negative suffix is exceptional in rejecting word-final stress (Kornfilt 1997: 515). In Hopi, where stress is in general predictable from segmental structure, some words show irregular patterns, and occasional morphs regularly cause such irregularities, such as /soʔon/ 'not' which takes irregular first syllable stress in a word like /soʔonkje/ 'impossible' (Kalectaca 1978). Other similar examples are easy to find. Note that I am not claiming here that all phonological irregularities arise through these mechanisms, but simply that these mechanisms are regular sources of phonological irregularity. Inkelas (1999) gives a good coverage of an irregular stress pattern in Turkish (which she terms Sezer stem cophonology) whose origins are obscure to me, but which may not have arisen through any of the mechanisms I have been discussing.

Stress and the English compound

My particular interest in the mismatch between morphosyntactic criteria for the word and phonological criteria for the word has been in the domain of English compounding. As is well-known, English distinguishes compounds such as *blackbird* from syntactic phrases such as *black bird* by stress (correlating with other semantic and syntactic features), and English has two stress patterns with N+N sequences so that *apple cake* gets so-called compound stress, while *apple pie* gets so-called phrasal stress (to the extent that stress patterns are predictable in N+N constructions at all). There are linguists who see this stress difference as criterial in distinguishing compounds from other N-bar constructions, and others who believe that the stress distinction is essentially irrelevant (see Bauer

1998 for a discussion including this position), and that both strings have the same morphosyntactic status.

We have plenty of comparative evidence that in other Germanic languages, compounds are treated as single words in terms of stress, and the English system is not found elsewhere in Germanic. Let us thus assume that English inherited the compound-stress pattern from its Germanic past. This leaves the question of where the phrase-stressed N+N construction comes from.

Again we must speculate. However, we may note that Levi (1978) argues that N+N constructions are in complementary distribution with non-predicate-adjective + N constructions. Thus we get *Australian High Commission*, where there is an adjective corresponding to *Australia*, but *New Zealand High Commission* where there is no established adjective corresponding to the name *New Zealand*. In British English we find *school colours* with a noun modifier contrasting with *regimental colours* with an adjectival modifier.[2] These A+N structures are, naturally enough, phrase-stressed, and involve adjectives with a Romance structure. It is frequently the case that where the modifying noun in an N+N structure of Romance origin and has a Romance stress pattern, the same phrasal stress is applied: *conversion factor, demolition derby, information highway*, etc. Is it then possible that the phrase-stressed N+N sequences arise through the influence of loan patterns, and that they represent a separate system from the native compound stress? I believe that this is extremely likely, and that N+N constructions are one place where the phonology and the morphosyntax have diverged over the centuries. Hirst (1998: 57), commenting on the English stress system in general, says

> Typologically, English has a hybrid stress system: on the level of the word stress rules are in many ways similar to those of Romance languages in that the pattern of stress is basically determined with reference to the right edge of the word (with stress on the penultimate or antepenultimate syllable); Germanic suffixes, however, such as *-ing* and *-ly*, generally do not affect stress, and compound words in English, as in other Germanic languages, are generally stressed on the initial element.

(See also Lass 1992: 85). So-called phrasal stress may be seen as determining stress with reference to the right edge of the word (i.e. in the Romance pattern) as opposed to so-called compound stress. If I am right here, the phonology is simply irrelevant to the morphosyntax, and should not be used as evidence for the morphosyntactic status of N+N constructions (this is not excluding the possibility that there might be other morphosyntactic criteria which are more useful).

Conclusion

We may imagine that in an ideal world, the phonological and the morphosyntactic words would match. What I have shown is that mismatches can arise through the workings of history: through morphosyntactic change and through borrowing. Such historically induced variation may cause only

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[2] The distribution may not be predictable. The old-fashioned word *Home Office* contrasts with *Foreign Office* but *domestic policy* contrasts with *foreign policy*. There are also places where the complementary distribution breaks down: *language policy / linguistic policy*.

minor perturbations in the native pattern (Chukchee VH) or it may cause major ones (the English stress system). Because languages are systems which change over time, we cannot assume that the phonological definition of the word and the morphosyntactic one will match in any given synchronic state. Accordingly, phonological structure cannot be assumed to correlate with the morphosyntactic structure of the word, even though it may do so in some languages to a very high degree. Any argument which uses phonological criteria to define a morphosyntactic unit must be treated with great suspicion: entropy can easily upset any such equation.

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Neutralisation of DRESS and TRAP before /l/ in New Zealand English

Hannah Buchanan

Abstract

This paper reports on the pilot test of an experiment designed to explore the potential neutralisation of DRESS and TRAP[1] before /l/ in New Zealand English (NZE). The experiment has two parts: production and perception. The results indicate that there is production evidence of neutralisation for these speakers and that perception does not necessarily match production. In fact, these speakers were not able to match production and perception any more accurately than would be anticipated by chance alone. I interpret the results as evidence of the quantal nature of the relationship between the articulatory and acoustic parameters of speech (Stevens 1989). I conclude by suggesting some improvements to the current research design.

Introduction

This paper is a revised version of an assignment presented for a course in Laboratory Phonology, completed as part of an MA in 1999. In Laboratory Phonology we explored the relationship between phonetics and phonology by looking at a range of issues from theoretical phonological perspectives and then seeing how experimenting in the speech laboratory reinforced, altered, questioned or refuted our possible theoretical understandings. Our final assignment required us to design and pilot test an experiment (or set of experiments) to investigate some aspect of neutralisation in New Zealand English (NZE). Because the experiments described here were intended only as a pilot test, numbers are too low for the results to be anything more than suggestive. Nevertheless, the methodology and such results as were obtained may be of interest for people intending to look further in this area.

Background

Distinctiveness is a fundamental concept in phonology. However, in many languages there are situations where two (or more) phonemes that usually contrast, fail to do so in a certain environment. This observation poses some theoretical challenges[2] which have prompted a range of 'solutions'. Among these is the notion of neutralisation which is especially linked with Trubetzkoy and the Prague School. In his *Principles of Phonology*, Trubetzkoy (1969: 228-42) discusses various aspects of neutralisation. Following his discussion, we can take a word like *speak* (/spik/ or /sbik/?) and interpret it as a 'suspension of contrast' (Lass 1984: 40) between /p/ and /b/. We have neither /p/ nor /b/, but an archiphoneme (probably represented as /P/) which is, according to Trubetzkoy (1969: 79), 'the sum of distinctive properties that the two phonemes have in common.'

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[1] Throughout this paper, I use the lexical set terms introduced by Wells (1982).
[2] For example: What does this mean for Liljencrants & Lindblom's 1972 principle of maximal perceptual contrast in vowel systems?

While some recent experimental work has provided support for this traditional notion of neutralisation (see, for example, Jassem & Richter 1989 on Polish word- or phrase-final obstruents), the majority of the results suggest that some adjustments are in order. For example, Lass (1984: 47), citing nasals in Kannada, argues that neutralisation need not be restricted to bilateral oppositions. Fourakis (1984) suggests that the domain of neutralisation should be extended from the segment to the word. Others have suggested that it is more accurate to speak of partial or incomplete neutralisation (see, for example, Port & O'Dell 1985 and Port & Crawford 1989 for evidence of partial neutralisation in German word-final obstruents). Discussion has also focused on the best way to explore neutralisation experimentally. In this context, Dinnsen (1985: 272) made the point that the existing findings in this area suggest that production and perception 'are at least partially independent' and perhaps should be considered separately.

Taking discussion of neutralisation to an NZE context, the influence of /l/ (and to a lesser extent /r/), cannot be overlooked. As noted by Bauer (1986: 242), /l/ has a huge effect on the NZE stressed vowel system. This influence was noted in early commentaries on NZE (see Wall [1939] 1959: 16-18 and Turner 1966: 98, 103) and continues to warrant attention (see, for example, Trudgill & Hannah [1982] 1994: 25). While /l/ has a potentially neutralising effect on a range of vowels in NZE, the focus of this paper is the potential neutralisation of the vowels DRESS and TRAP preceding /l/ (Maclagan 1982: 24 and Bauer 1986: 243 both mention this possible neutralisation).

This experiment

My motivation for this experiment came initially from my own awareness of neutralisation of DRESS and TRAP before /l/ in my own speech, and in the speech of other native speakers of NZE. I became aware of this after returning to Wellington from two years living in Melbourne, Australia. I had a job interview with an 'Alan'. I was really quite surprised when I met her, and then later, after getting the job, I realised that when I talked about my new boss, other people asked what he was like. Sexist assumptions aside, I realised there was something interesting happening with my pronunciation of this, and other similar words. At least perceptually, I was sure that I neutralised DRESS and TRAP before /l/, and that some other speakers of NZE did the same.

Once I started to study linguistics, and particularly during the Laboratory Phonology course, I became a bit fascinated with this particular feature of NZE. On the basis of my own knowledge of NZE, and due to the reading I had done on neutralisation more generally, I felt that it was imperative to include both production and perception components in this experiment.

For production, there were three tasks. First, subjects were recorded producing words containing DRESS and TRAP in an environment where no neutralisation was known to occur in NZE, i.e. preceding /d/ in the words *head* and *had* (*hut* was also recorded to have STRUT baseline although I did not use this information). This provided baseline or 'neutral' tokens of their production of the relevant vowels. Second, subjects were recorded reading a word list which included the following: *Ellen, Alan, telly, tally, melody, malady, celery* and *salary*. These target words were spread throughout the list and never occurred adjacently. Third, subjects were recorded reading the above words only presented as pairs, i.e. potential minimal pairs.

To test perception, on a subsequent occasion, subjects were played samples of their own production of the target words and were tested for a matching of production and perception via two perceptual tasks. The first task played back the target words in isolation in a random order, and the subjects had to identify the word with no comparative information. The second task played back the word pairs together four times. For example, the pair *Alan/Ellen* would be played in four different combinations (randomly selected) which could have included: *Alan-Ellen, Ellen-Alan, Alan-Alan, Ellen-Alan*. Subjects had to identify what each sequence was. Further details of each stage of the experiment are outlined below, and samples of each of the Tasks (both production and perception are included in the appendices).

Subjects

Because this was just a pilot test for an experiment, I only had two subjects. Two native NZE speakers were the subjects for this experiment. Both were female: Subject 1 (S1) was 19 years old and Subject 2 (S2), 54 years old. They were selected to provide an age comparison only. Other sociolinguistic factors were not taken into consideration for this pilot test. Based on my own observations, I thought that neutralisation of DRESS and TRAP before /l/ might be a change in progress in NZE, and a relatively recent one. I selected these two speakers because I thought they would demonstrate a difference in degree of neutralisation. I (wrongly, as it turns out) assumed that the younger speaker (S1) would produce a greater degree of neutralisation than the older speaker (S2). Based on my understanding of the literature I thought that subjects might perceive neutralisation even if the production data showed phonetic differences.

Part I: Production

This part of the experiment was designed to answer the following question:

1. Is there production evidence of neutralisation of DRESS and TRAP before /l/ in the speech of these two native NZE speakers?

Testing procedures

Three production tasks were recorded in the Speech Laboratory using xwaves (TM) (an audio waveform editing program that used to be distributed by Entropic,Inc., along with the ESPS(TM) signal processing utilities). Task 1, *Baseline Production*, recorded the subjects reading the words *head, had, hut*. This task was designed to get data of production of these phonemes in an environment where no neutralisation was known to take place. Task 2, *Wordlist Production*, consisted of a list of 33 words which included the target words *Alan, Ellen, telly, tally, melody, malady, celery, salary* interspersed throughout the list (some sample lines are: *sign, salary, sand / apricot, apple, Alan / migraine, melody, metal*). This task was designed to elicit tokens of the relevant word pairs without too much overt attention being drawn to them (subjects were not aware, at this point, which words I was interested in). Task 3, *Potential Minimal Pair Production*, had only the relevant word pairs arranged on the page, and was designed to elicit the maximally distinct production that the speaker was capable of. At the time of the experiment, I was working as an ESOL teacher. The task instructions stated: 'I want to use these recordings as models for my

ESOL students. Please read the following words as clearly as possible. Read across.'

Analysis procedures

Speech wave and spectrogram files were created for each token. Formant tracks were produced using the ESPS routine called 'formant'. I collected F1 and F2 data only. To select a measurement point, I followed the methodology used by Watson et al (1998: 191):

    i.   I used amplitude information from the speech wave as well as from the spectrogram to identify the mid-point of each vowel.

    ii.   I selected a point near the middle of the vowel and where the formant track appeared to be the most stable.

Results

The results from the production section are presented below, by speaker. The scale of the graphs has been adjusted to focus on the relevant part of the vowel space. Exact formant values for each figure are detailed in the appendices.

Figure 1 shows that S1's baseline production of the DRESS, TRAP and STRUT vowels is reasonably dispersed within the vowel space.

Figure 1: Baseline production (Subject 1)
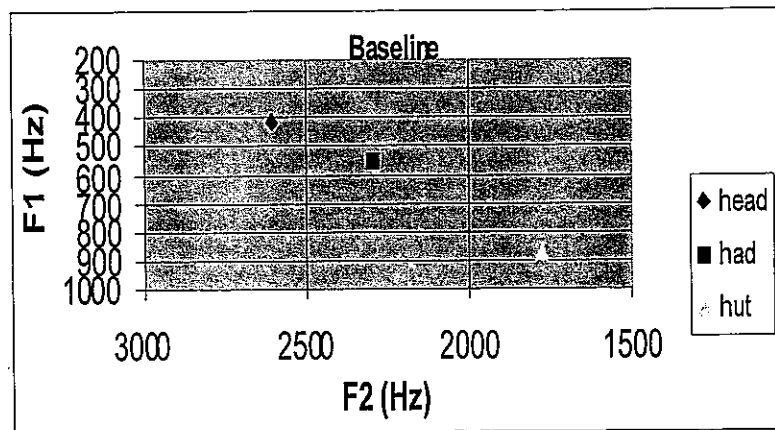
Figure 2: Production of DRESS and TRAP pre /l/ in a wordlist (Subject 1)
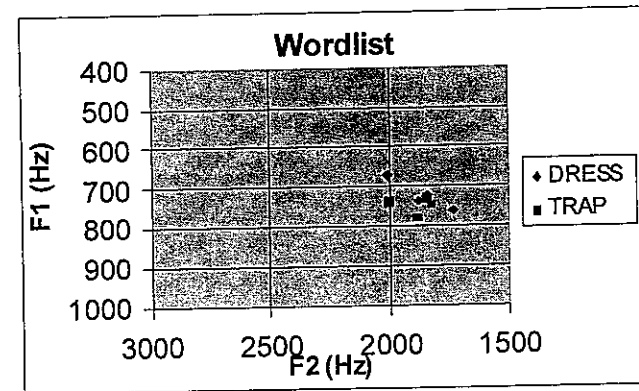
Neutralisation is indicated in Figure 2 with five of the eight tokens having very similar F1 and F2 values. Vowel height (indicated by F1) is almost identical for all the tokens and lies somewhere between the values for TRAP and STRUT. The productions are clustered closer to the baseline STRUT than either DRESS or TRAP, although retraction (i.e. lower F2 values) is to be expected due to the following /l/ (see Bauer 1986: 243).

Figure 3: Production of DRESS and TRAP before /l / in a potential minimal pair environment (Subject 1)
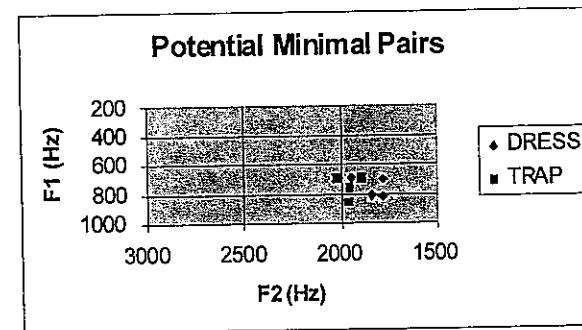
As with Figure 2, neutralisation is indicated in Figure 3 in the production of the pairs *Ellen/Alan, melody/malady, celery/salary* and *telly/tally* when presented as minimal pairs, although there is slightly less overlap in production than when they are in the wordlist environment (i.e. when the relevant words are not presented adjacently). While vowel height (F1) is similar throughout, DRESS and TRAP tokens are almost separated into two groups according to F2 (*Ellen* is

the exception, clustering with the TRAP group). However, it is DRESS not TRAP which is produced further back.
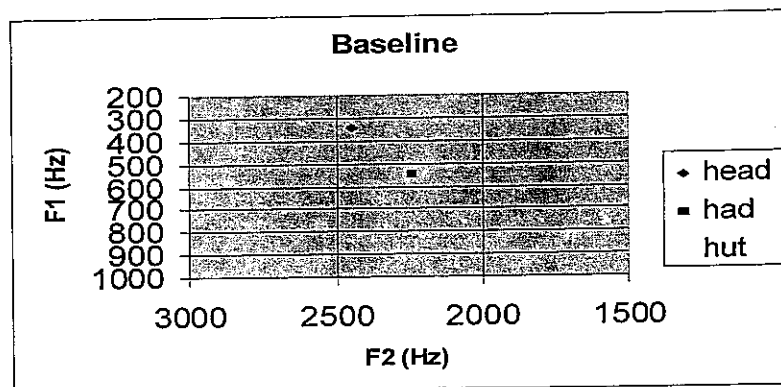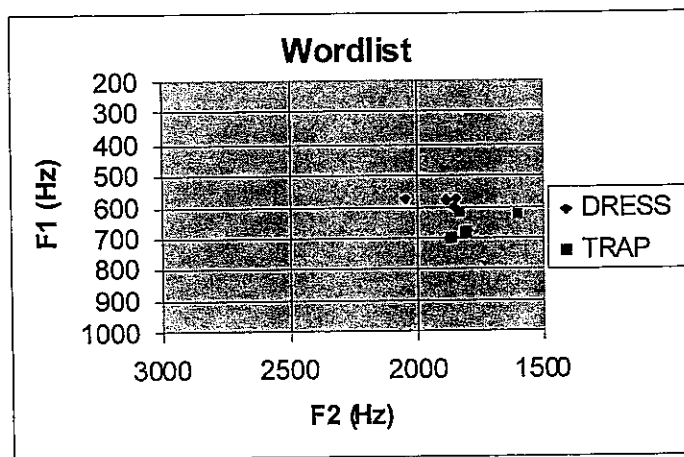
Figure 4: Baseline production (Subject 2)

Figure 4 shows that S2's baseline production of TRAP is almost identical to that of S1. Her productions of DRESS and STRUT are closer and more back.

Figure 5: Production of DRESS and TRAP before /l/ in a wordlist (Subject 2)

Neutralisation is indicated in Figure 5. Six of S2's eight tokens have almost identical F1 and F2 values. Vowel height for all the DRESS tokens closely approximates that of her baseline production of TRAP. The TRAP tokens here are slightly more open than in her baseline production.

Figure 6: Production of DRESS and TRAP before /l/ in a potential minimal pair environment (Subject 2)
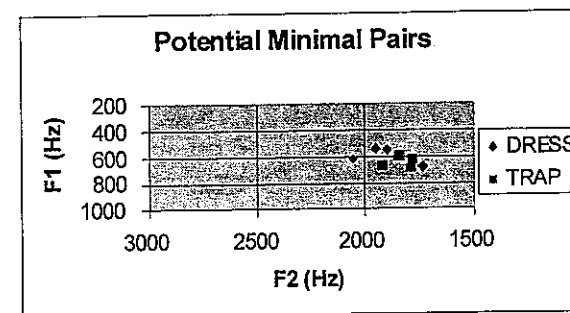
Figure 6 indicates that even in the potential minimal pair environment S2 neutralises. As for S1, there seems to be a slight F2 distinction being drawn on here, with this speaker having DRESS tokens (apart from *melody*) slightly more front than their TRAP counterparts.

Part II: Perception

This part of the experiment was designed to answer the following questions:

2. Is there a difference between the production and perception of potential neutralisations for these two NZE speakers?

3. Are the subjects able to identify the words at a level better than that predicted by chance?

Testing procedures

Because neither subject produced significantly different tokens of the target words in the two different contexts (i.e. wordlist and potential minimal pairs), I made an arbitrary choice to only use tokens from the wordlist production as the stimulus for testing perceptual discrimination. (In hindsight, I see that it would have been preferable to use the potential minimal pair tokens because they were produced in the context of a potential contrast).

Subjects returned to the Speech Laboratory and I played them back individual files and also sequences of files which were samples of their own speech. Task 4, *Perception of Words in Isolation*, was designed to test how accurately the relevant words were perceived in isolation, with neither context nor contrast. In this task subjects were played the target words with a 10 second pause between them. They had to write down what word they had heard. Task 5, *Perception of Potential Word Pairs*, was designed to see if perceptual accuracy improved when there was a contextual comparison available. This time target words were played back in pairs (e.g. *Alan-Ellen*). Respondents had to identify the word and the ordering of the pairs. This was repeated four times for each pair. After Task 5, I got some verbal feedback from the subjects about how they had found the tasks.

Results

Subject 1:

Figure 7 shows that when S1 was played back samples of her own production in isolation (i.e. each word was played and then there was a pause while she identified which word it was), perception matched production six out of eight times. That is, S1 was able to correctly identify her production of the target words six out of eight times. Where perception did not match production is indicated in **bold**.

Figure 7: Perception of Words in Isolation (S1)

Said (Production)	Heard (Perception)
Ellen	Ellen
melody	melody
salary	salary
telly	telly
malady	malady
celery	celery
tally	**telly**
Alan	**Ellen**

Figure 8: Perception of Potential Minimal Pairs (S1)

Heard the word pairs in sequence four times (in random order)   Identified the correct order of the word pairs

Ellen/Alan	2/4
telly/tally	0/4
melody/malady	0/4
celery/salary	1/4

Figure 8 indicates that when S1 listened to the target words in a sequence (Task 5 as described above), she had difficulty finding an accurate match between her production and perception of these pairs. Comparative information (i.e. having two tokens in sequence) appears to have been a hindrance rather than a help.

Subject 2:

S2's results, as indicated in Figure 9, show that her perception of the target words, when played in isolation (task 4) matched her production 50% of the time. Where perception did not match production is indicated in **bold**.

Figure 9: Perception of Words in Isolation (S2)

Said (Production)	Heard (Perception)
Alan	Alan
Ellen	Ellen
malady	malady
celery	celery
telly	**tally**
tally	**telly**

melody	malady
salary	celery

Figure 10, below, shows that S2 was slightly more 'successful' with the minimal pairs activity than S1.

Figure 10: Perception of Potential Minimal Pairs (S2)

Heard the word pairs in sequence four times (in random order)   Identified the correct order of the word pairs

Ellen/Alan	4/4
telly/tally	1/4
melody/malady	0/4
celery/salary	1/4

Both subjects commented on how difficult the perceptual tasks were. S1 reported that Task 4 and Task 5 were equally difficult: 'I wouldn't be surprised if I got them all wrong.' S2, commenting on Task 4, said 'I really had no idea, I was just guessing.' Her results reflect this perfectly.

Discussion

Referring back to the three research questions we see that:

1. There is production evidence of neutralisation of DRESS and TRAP before /l/ in the speech of these two native NZE speakers.

    Contrary to my predictions, both subjects neutralised, and this was generally in the vicinity of TRAP.[3] It is a matter of interpretation whether this is seen as absolute or partial neutralisation.

2. There is a difference between production and perception for these speakers.

3. The subjects were not generally able to identify the words at a level better than that predicted by chance.

The perceptual results suggest that regardless of the degree of neutralisation occurring in production, neutralisation is a 'psychological reality' (Hawkins 1984: 110) for both subjects. As the subjects indicated themselves, they were not able to assign a production unambiguously to one phoneme or the other. I interpret this as support for Stevens's 'quantal theory' of speech. Stevens (1989) identifies three regions (I, II and III) which are relevant in a representation of the relationship between auditory and acoustic parameters. Regions I and III are 'plateau-like regions' (Stevens 1989: 5) but region II can be considered a 'threshold region' (Stevens 1989: 4). This means that small articulatory adjustments occurring in region II have more significant perceptual consequences than articulatory changes occurring in regions I or III. So, in relation to the current experiment, I suggest that the baseline productions of DRESS and TRAP occur in one of the plateau regions and the articulatory and

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[3] Bauer 1986: 243 notes that this is the general tendency in NZE, although not the only possibility.

acoustic cues used to signal distinction between these 'baseline' phonemes can be accessed unambiguously. However, in the environment of following /l/, the articulatory / acoustic relation between DRESS and TRAP moves into region II. While some articulatory distinction is maintained, acoustic salience is lost. Speakers are no longer able to clearly perceive the distinction between the phonemes.

I included four relevant word pairs so that I would be able to test for possible lexical diffusion effects. While I did not use any statistical analysis tools on this data because of the small number of responses, it appears that there could be some support for lexical diffusion[4]. Both speakers were able to perceive *Ellen/Alan* more accurately than the other pairs even though they did not both produce maximal difference for this pair. It seems that a combination of phonetic and pragmatic factors is working against neutralisation of this pair: The vowel is in initial position and these proper nouns are likely to occur in exactly the same context. Misinterpretation could cause communication difficulties that are unlikely with the other pairs which appear to all be neutralised (in both production and perception) to a similar degree.

Conclusion

This pilot test has been successful in that it has provided me with data to answer the research questions I set. However, there are a number of improvements that could be made:

Part I: Production:

i.   Analyse vowel duration as well as F1 and F2

ii. Collect multiple tokens and then take average formant values for each word (this would guard against an atypical production skewing the results)

iii. Re-test the measurements made to ensure accuracy and consistency of methodology

iv. Pay closer attention to the placement of the target words in the wordlist – i.e. think about the words that come immediately before or after the target word and any possible influence they may have on the pronunciation

Part II: Perception:

i.   Include a perceptual task for baseline productions (i.e. Can listeners distinguish accurately between *head, had* and *hut*?). I assumed that they could, but have no evidence for this.

ii. Use the minimal pair tokens rather than the wordlist ones to test perception.

iii. Use a specific statistical analysis tool for interpreting the perceptual results.

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[4] Note that the relationship between lexical diffusion and frequency effects could also be relevant in this discussion.

iv. Include a 'confidence measure' (e.g. respondents have to rate how confident they are in the accuracy of each response). This would be in place of gathering anecdotal evidence of listeners' responses to the perceptual tasks and would be very useful in distinguishing between results that occurred by chance and those that reflect actual perceptual accuracy.

The experiment could also be expanded more generally by including a greater range of subjects. This would allow for a better understanding of the neutralisation process and could enable us to answer questions such as: Is the general tendency to neutralise towards TRAP? Do we have an archiphoneme (/E/) in the relevant position? Is this a change in progress in NZE, or is it age-graded? The experiment could also be improved by testing perception not only of the subjects' own speech but also the speech of others in their speech community.

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Appendices

S1 - Task 1 - Baseline Production

	F1	F2
head	420	2608
had	556	2293
hut	869	1778

S1 - Task 2 - Wordlist Production

	F1	F2		F1	F2
Ellen	671	2010	Alan	740	2005
telly	737	1880	tally	728	1841
melody	722	1842	malady	778	1884
celery	760	1733	salary	746	1828

S1 - Task 3 - Potential Minimal Pair Production

	F1	F2		F1	F2
Ellen	702	1950	Alan	765	1954
telly	812	1844	tally	860	1959
melody	823	1785	malady	702	2021
celery	703	1779	salary	700	1892

S2 - Task 1 - Baseline Production

	F1	F2
head	342	2448
had	549	2247
hut	762	1578

S2 - Task 2 - Wordlist Production

	F1	F2		F1	F2
Ellen	575	1847	Alan	699	1864
telly	575	2050	tally	620	1832
melody	602	1853	malady	685	1809
celery	579	1885	salary	626	1600

S2 - Task 3 - Potential Minimal Pair Production

	F1	F2		F1	F2
Ellen	618	2053	Alan	676	1917
telly	540	1949	tally	599	1841
melody	681	1737	malady	698	1786
celery	555	1901	salary	628	1780

Production Tasks (1-3)

TASK 1

Read the following words. Pause between each one

head
had
hut

TASK 2

Read the following words. Read across. Read as naturally as possible.

bay	buy	boy
boot	boat	bout
sign	salary	sand
apricot	apple	Alan
hat	happy	Henry
migraine	malady	metal
tongue	table	telly
engine	egg	Ellen
celery	scissors	secretary
music	melody	microphone
temporary	tally	tomato

TASK 3

I want to use these recordings as models for my ESOL students. Please read the following words as clearly as possible. Read across.

Ellen	Alan
telly	tally
melody	malady
celery	salary

TASK 4
Write down the word you hear next to the appropriate number.

1............................

2............................

3............................

4............................

5............................

6............................

7............................

8............................

TASK 5

The following word pairs are numbered. Listen to the recording and write down what you hear (e.g. 1-1, 1-2, 2-2, 2-1). All possible combinations will not necessarily appear in a given sequence. Some combinations may appear more than once.

1. Ellen		2. Alan	
a)	b)	c)	d)
1. telly		2. tally	
a)	b)	c)	d)
1. melody		2. malady	
a)	b)	c)	d)
1. celery		2. salary	
a)	b)	c)	d)

vP-aspect: Aspectual Base Properties of Indonesian Predicates[1]

Yono Sukarno

Abstract:

This paper focuses on verbal phrase aspect (vP-aspect) of Bahasa Indonesia (BI). In BI, vP-aspect is morphologically marked on the predicate. I claim that the suffix *-kan* marks an aspect, which I refer to as *kan*-aspect, indicating that the object undergoes *change*. This is in a stark contrast with *i*-aspect, where the object is stationary and unchanged. The analysis is based on the notion that a predicate should be analysed within the environment in which it occurs, namely, within the *v*P (for instance, Tenny 1987, 1994, Croft 1998, Chomsky 1995, Arad 1998 among others), with the core argument determining the aspectual property of an event structure (Tenny 1987, Arad 1998, Ritter and Rosen 1998). The paper also gives indications of how to account for Hale and Keyser's (1993) LOCATION *vs* LOCATUM predicates in terms of aspect, namely, which argument undergoes *change* in a given event.

1. vP-aspect

Given that there are two main categories of aspect, the first one, commonly known as *tense aspect*, includes, for instance, [+perfective] and [-perfective], subjunctive, and so on. There is a large number of works in the literature on *tense aspect*, for instance, Reichenbach (1947), Comrie (1976), Smith (1997), Giorgi and Pianesi (1997), among others.

Quite separate from *tense aspect*, the second category concerns some aspectual properties encoded in the event structure. Some discuss this second category in terms of *telicity, delimitedness, boundedness* of the event, *affectedness* on the object and so on, for instance, Tenny (1987, 1994), Arad (1998), Smith (1997), Ritter and Rosen (1998), Croft (1998).

Although the two categories are interdependent, each can be discussed separately. We shall focus on the second category, which I refer to as *v*P-aspect[2]. Before we proceed, some points should be noted.

1.1 Scope of discussion

For simplicity, the discussion presented here is limited to aspects that are morphologically marked by the suffixes *-kan* and *-i*. There are others, like for instance, those marked with the nominal suffix *-an* that require combination

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[2] This type of aspect is also referred to as *Aktionsart(en)*, however *v*P-aspect is more explanatory because what will be presented here deals with some aspectual properties of the verbal phrase, rather than those of the verb alone (cf. Tobin 1993). The inclusion of object arguments follows, for instance, Tenny (1987), Arad (1998), Ritter and Rosen (1998), Chomsky (1995), among others.

with the prefix *ber-* or *ke-* , indicating, for instance, aimlessness or adversarial experiences, and so on. Those and the aspects that are marked with nominal affixes are worth a separate paper.

1.2. *Motivation for the inquiry*

The initial inquiry is based on a simple question as to why sometimes we add the suffix *–kan*, and not *–i*, to the predicate, or vice versa, and why sometimes we use neither, e.g., *mengirimkan, mengirimi, mengirim*, all of which mean 'to send'. Sneddon (1996) describes both suffixes as optional, because the three verbs mean the same.

1.3. *Simple data*[3]

The examples to be presented in the sections that follow will be mainly of mono-clausal expressions. The Active prefix *meN-* is used on occasions to ease the presentation, although I will not discuss derivation that involves VOICE.

1.4. *The suffixes* -kan *and* -i *in the literature*

The suffix *–kan* (but not *–i*) has been discussed quite extensively in the literature, mainly within the morphological component (Voskuil 1996, Tarigan 1985, Sneddon 1996, among others). A handful of syntactic analyses of (surface) structure involving *–kan* (Chung 1976, Baker 1988, Den Dikken 1995) focus exclusively on so-called 'Dative alternation'. There is no need to discuss all the analyses in the literature. They are good as far as the data provided are concerned. However, I am going to disagree with them. And rather than assigning many functions to these suffixes, as has been done in the literature, I argue that they have a single function, namely, as a *v*P-aspect markers. And analysing the suffixes in terms of aspect, as it turns out, gives us a simple picture; the affixation is not as complicated as some might have us believe.

2. *Kan*-aspect and the notion of change

Since I shall argue here that the suffix *–kan* marks an aspect, I shall refer to the related aspect as *kan*-aspect. Some simple examples are provided in the sub-sections that follow, to demonstrate that, with *kan*-aspect, the object, i.e., the core participant, not the oblique, undergoes *change*. Following Dowty (1991), I call the object that undergoes *change* THEME as a convenient term. Included in the *change* are, for instance, change of location (or 'shift-through location', 'translocation', 'move'), change of state (mood, size, condition and so on), change of perception, change hands/possessors, and so on. Included in the change of location is the *change* involving a transient point in the shift before the THEME reaches its final destination. It will be apparent that *change* is also notional, not just physical.

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[3] Three major BI dictionaries consulted are: *Kamus Lengkap*, 'A Complete Dictionary', Bandung: Hasta (1980), *Kamus Besar Bahasa Indonesia*, 'A Large Dictionary Of Bahasa Indonesia' Jakarta: Balai Pustaka (1988), and *Kamus Ungkapan*, 'A Dictionary of Expressions' Jakarta: Gramedia (1985).

2.1. Kan-*aspect with verbs*

It does not seem to matter whether the verb-BASE is that of *intransitive* (be that of *unaccusative* or *unergative*), (1), *transitive* (2), or *ditransitive* class, (3): *kan*-aspect selects a THEME. Like Arad (1998: 40–57), I propose a predicate-based approach, where the characterisation of predicates depends on the structures in which they appear, rather than their structure being determined by their lexical characterization as *unaccusative*, *unergative*, and so on.

(1)a. Adik   bangun   [adik is a THEME]
     little brother/sister   wake up
     'Little brother woke up'

   b. Ibu   meN-bangun-kan   adik   [adik remains a THEME]
     mother   ACT-wake -KAN   little brother/sister
     Mother woke up little brother'

   c. *Ibu   meN-bangun   adik
     mother   ACT-wake   little brother/sister
     'Mother woke up little brother'

By *waking up little brother*, (1b), *mother* changes the state of *little brother* from being asleep to being awake. The expression can also be interpreted as *mother* makes or causes *little brother* to wake up. In (1a), *little brother woke up*, but what caused him to wake up is not stated in the expression, perhaps because there is no obvious cause, or perhaps because the *cause* is not relevant. Expression (1c) is not allowed.

(2)a. Saya meN-pukul meja ini   (dengan tongkat)
     1sg ACT-hit   table this   (with stick)
     'I hit the table (with a stick)'

   b. Saya   meN-pukul-kan   tongkat ini   (ke meja)
     1sg   ACT-hit-KAN   stick this   (to table)
     'I hit this stick (against the table)'

   c. *Saya meN-pukul-kan meja ini   (dengan tongkat)
     1sg   ACT-hit-KAN   table this   (with stick)
     'I hit the table (with a stick)'

   d. *Saya meN-pukul   tongkat ini   (ke meja)
     1sg   ACT-hit   stick this   (to table)
     'I hit this stick (against the table)'

When *I hit the stick against the table*, (2b), there is a sense that *the stick* shifts from one location to another, with *the table* as the final destination of the shift. The event of hitting the table is completed at the same time the stick reaches the table. In contrast, when *I hit the table (with a stick)* as in (2a), the argument *meja ini*, 'the table', is stationary. And again, adopting Dowty's (1991) terminology, I shall call the stationary, unchanged argument, PATIENT, as a short, convenient name. In terms of *importance*, we can say that the primary information given by the expression in (2b) is about the THEME *tongkat ini*, 'the stick', which is in contrast with the PATIENT *meja ini*, 'the table'. Examples (2c) and (2d), which are the inverse of (2a) and (2b) respectively, are not allowed for obvious reason: (2c) includes *change* as an entailment in the event, while (2d) does not. Those obliques (read: peripheral arguments) that mean *against the table*, *with a stick*, are of secondary importance, in fact, they can be left out,

hence the parentheses. In summary, we call an argument THEME because it is involved in an event that has *change* as an entailment, and PATIENT, because the event lacks this entailment.

(3)a. Ayah (selalu) meN-beri bantuan (kepada para korban)
father always) ACT-give help (to the victims)
'Father (always) gives/gave donation (to the victims)'

b. Ayah (*selalu) meN-beri-**kan** bantuan (kepada para korban)
father (always) ACT-give-KAN help (to the victims)
'Father (always) gave donation (to the victims)'

Basically, the difference between (3a) and (3b) is that for (3a) we can ask a question as to whether the event occurs regularly, perhaps as *father's* habit that he gives donation to *the victims*. In (3b), on the other hand, we are dealing with a one-off event, namely, the donation changes hands at this particular moment only, and that is the reason the expression cannot include *selalu*, 'always'. That is (3a) is atelic while (3b) is telic. Only in (3b) is there a focus on the change taking place. Note the dative preposition *kepada*, 'to', although in parentheses, it is worth a mention as a warning that the suffix *-kan* is not a 'benefactive marker' as some call it (for instance, Chung 1976, Sneddon 1996), nor is it a 'phonetic cliticization' of the preposition *kepada* (Baker 1988). In fact, it is also apparent in examples (1) and (2) above. We can substitute the benefactive *untuk*, 'for' for the dative preposition *kepada*, for both (3a) and (3b), as in (4).

(4)a. Ayah (selalu) meN-beri bantuan (untuk para korban)
father (always) ACT-give help (for the victims)
'Father (always) gives/gave donation (for the victims)'

b. Ayah (*selalu) meN-beri-kan bantuan (untuk para korban)
father (always) ACT-give-KAN help (for the victims)
'Father (always) gave donation (for the victims)'

In terms of event, both (3b) and (4b) are eventive, and *kan*-aspect indicates *change* in both expressions. It is the preposition *untuk* in (4b) that gives the interpretation that the donation travels through a 'third hand' (perhaps through a charitable agency, a bank, and so on), as against the *direct path* in (3b). With *untuk*, 'for', on behalf of', there is a sense that an extra point exists along the path. Thus, one may call *the victims* GOAL, or, BENEFACTOR. However, in all examples, (3) and (4), *the victims* is the *terminus* of the path. The difference is that the (a) examples are atelic, and is not the result of the suffix *-kan* being a 'benefactive marker' or 'dative marker'.

2.2. Kan-*aspect with non-verbs*

It is known, that the suffix *–kan* changes an item, such as a noun or an adjective, into a verb, thus *-kan* is a 'verbaliser', or 'verb converter' (for instance, Tambulonon 1983, Sneddon 1996). Tarigan (1985) includes proper names, including place names, and numbers in his examples of *–kan* affixation. In fact, if we adopted such a theory, any item, including prepositions, prepositional phrase, interrogative operators (*Wh*-), and short phrases, can be changed into a 'verb' by means of the suffix *-kan*. As part of my claim, I shall argue that this is not what the suffix is all about. The notion of *change* holds through, in fact, it can be seen more clearly with derived verbs, which I shall refer to henceforth as predicates, or, *kan*-predicates, because they involve the suffix *-kan*. The

examples that follow show variations of *change,* encoded in the variations of expression.

2.2.1. *Kan*-predicate expresses the final destination of the THEME

In the long form, (5), the predicate is *masuk-kan*, 'to enter/PUT something into X', where X, which in this case is *buku*, 'book', as an enclosure, is the final destination (GOAL) of the translocation, indicated by the prepositional phrase that is introduced by *ke*, 'to'.

(5) *masuk-kan pendapatan ke buku*
enter-KAN income to book
'Put/enter income in the book'

In the concise form, (6), *buku*, as the final destination, is expressed in the *kan*-predicate.

(6) *buku-kan pendapatan*
book-KAN income
'Put/enter income in the book'

Other occurrences include, for instance, (7), with predicates that Hale and Keyser (1993) call 'LOCATION verbs'.

(7) *penjara-kan pencuri/semua kriminal...*
jail-KAN thief/all criminals...
'(To) Jail the thieves/all ciminals'

asrama-kan mahasiswa/tentara/anak nakal...
dormitory-KAN students/soldiers/naughty children...
'(To) Put students/soldiers/delinquents in a dormitory'

kandang-kan kambing/ayam...
shed-KAN goat/chicken...
'(To) Put the goats/chicken in the shed'

makam-kan jenazah
tomb-KAN corpse
'(To) Put the corpse in the tomb/cemetery'

The following expression, (8), occurs daily in the national papers of Indonesia.

(8) *Jenazah telah di-makam-kan pada tanggal (sekian*
corpse PERF PASS-tomb-KAN on date (date)
'The corpse has been / was buried on the (date)'

In keeping with the notion of *change* outlined above, we can see that in examples (7) above, it is the object of *kan*-predicates, such us *pencuri*, 'thieves', *mahasiswa* 'students', *kambing*, 'goats', that undergoes movement (from outside to inside), rather than *penjara*, 'jail', *asrama*, 'dormitory', and so on.

It is important to note that in Hale and Keyser's terms, *to house the poor* is *to provide/give a house for/to the poor* (or, *to provide/give the poor with a house*): the *house* changes hands/possessors. Thus, the interpretation to be retained here is that one does not *offer/provide/give* a *tomb* to a *corpse*, but rather, we *put* the *corpse* in the *tomb*, like in (8). The difference regarding which object is the

moving participant is crucial, especially in terms of THEME-Object correlation in syntax.

2.2.2. *Kan*-predicate expresses the final form/state of the THEME

The *kan*-predicate in (6), *buku-kan* can also occur in another variation of change, namely 'to turn/make something into X', where X is the final form/state, (9).

(9)   *buku-kan*   *cerpen/puisi/artikel...*
       book-KAN   short stories/poems/articles...
       '(To) compile/make/turn them into a book'

Other examples:

(10)   *abu-kan*   *jenazah*
        ash-KAN   corpse   '(To) Cremate the corpse'

       uang-kan   *cheque*
       money-KAN cheque   '(To) Cash the/a cheque'

       materi-kan *ide-ide*   or,   *materiil-kan ide-ide*
       material-KAN ideas   '(To) Materialise the ideas'

Beside (8), the following expression, (11), also occurs daily in the national papers of Indonesia.

(11)   *Jenazah* *akan*   *di-abu-kan*   *pada* *tanggal* *(sekian)*
       corpse   FUT   PASS-ash-KAN on   date   (date)
       'The corpse will be cremated on the (date)'.

When a corpse is cremated, like in *abu-kan jenazah*, (10) and (11), the *change* is not completed until the form of a dead human body completely, or almost completely, turns to *ash*. Here *ash* is the final form of *change*. It is a concise — and perhaps more euphemistic — turn of phrase, rather than saying *burning the corpse until it turns into ash*.

To have a *change*, sometimes the initial form does not *exist*, *ada*, (12), or, if it does, it is lost, or we are not aware of its existence (13).

(12)   *Setiap* *akhir tahun* *mahasiswa* *meN-ada-kan*   *pesta*
       every end year   student   ACT-exist-KAN   fiesta
       'Every end of the year students organise a party'

(13)   *Si*   *kecil*   *meN-temu-kan* *mainan-nya*   *(yang hilang)*
       ART   small   ACT-find-KAN   toy-3sg   (COMP missing)
       'The child found his toy (that was missing)'

In (12), *pesta*, 'fiesta, party', is turned from nothingness into existence. It is not that the *party* is changed from *disorganised* into *organised* as one might interpret the English translation (as in *to organise my room, to organise my life* and so on). In some sense, what is *found* when it has been missing, (13), also undergoes change into existence. The inverse of (12) would be (14), where the change is from existence to non-existence, using the negative phrase *tidak ada*, 'does not exist'.

(14)   *meN-ti.ada-kan*   *kemiskinan*
       ACT-NEG.exist-KAN poverty
       '(To) get rid off poverty'

Sometimes, the *change*, as part of making or turning something into something else happens only in our perception, namely, we only regard, or treat something or somebody as X. In actual fact the person regarded as X is not X, and thus the initial state is retained, (15).

(15)a. <u>Longer form</u>:   <u>Shorter form</u>:
       anggap *seseorang* *sebaga* *dewa*   *dewa-kan* *seseorang*
       regard   somebody as   god   god-KAN   somebody

b.   *Orang* *desa*   *di Jawa* *sering* *meN-anggap* *wayang* *segagai* *dewa*
       person village in Java often   ACT-regard puppet as   god
       'Villagers in Java often regard puppets as gods'

c.   *Orang* *desa*   *di Jawa* *sering* *meN-dewa-kan*   *wayang*
       person village in Jawa often   ACT-god-KAN   puppets
       'Villagers in Java often regard puppets as gods'

Interestingly, modals such as *sering*, 'often', can occur in (15c), but not *selalu*, 'always', in (3b) and (4b). Here the concept of *temporal boundedness* (Tenny 1987, Arad 1998, Ritter and Rosen 1998) applies in examples (3b) and (4b) but not in (15c), both with *kan*-aspect. I assume this is because it takes a certain time for the donation to reach the hands of the victims, but it is difficult to pinpoint, what sort of time it takes to change one's perception. Thus, it is not the case that *kan*-aspect indicates *telicity* (cf. Voskuil 1996). Other examples include, (16).

(16)   *anak-emas-kan*   *seseorang*   *anak emas,*   'beloved child'
       anak-tiri-kan   *seseorang*   *anak tiri,*   'step child'
       nomer-satu-kan   *seseorang*   *nomer satu,* 'number one'
       nomer-dua-kan ·   *seseorang*   *nomer dua,* 'number two'
       tarigan-kan   *seseorang*   *Tarigan,*   a person's name
       saddam-hussein-kan *seseorang*   *S. H.,*   a person's name
                            seseorang: 'somebody'

An example of a phrase with *–kan*:

       meN-tidak-begitu-pandai-kan   *seseorang*
       ACT-NEG-so-clever-KAN   somebody
       'to regard somebody as (being) not very bright'

2.2.3. *Kan*-predicate expresses change of state

It seems to matter whether a *kan*-predicate is derived from a common adjective or a psychological one, although both indicate a *change of state*. Syntactically, expressions with a psych-predicate that include the *kan*-aspect do not have a passive counterpart. The simplest explanation is that the cause of change in psych-predicate is consistently non-volitional (cf. Dowty 1991, Arad 1998), meaning that the event does not occur as a deliberate action. On the other end of spectrum, not only do *kan*-predicates of common adjective ('de-adjectivals') have a passive alternant, they can also occur in an unaccusative construction (in a manner of the English *the gravy thickens*). However, I shall not discuss this matter any further for it is beyond the scope of the present paper.

We are interested in the change of state of the object, which is the object of *kan*-predicate. It is inevitable that we shall also include *i*-aspect, indicating the

lack of change, because some psych-predicates do not occur with *kan*-aspect, while some others only occur with *i*-aspect, and some can occur with both, with some lexical semantic modification.

2.2.3.1. *Kan*-aspect with common adjectives

The occurrence is regular, as regular as the need to use adjective of dimensional states (all sizes), colours (all colours), description (those that mean *good*, *bad*) and so on.

(17) *John*   *sedang*   *meN-panjang-kan*   *jenggot-nya*
      J   PROG   ACT-long-KAN   beard-3sg
      'John is letting his beard grow long'

(18) *Ibu*   *sibuk*   *meN-kuning-kan*   *telur*
      mother   busy   ACT-yellow-KAN   egg
      'Mother is busy making yellow eggs'

In (17) *John* is changing the length of his *beard* from *not long* (i.e., short) to *long*. In (18) *mother* changes the colour of the *eggs* from *not yellow* (usually white) to *yellow*. While both examples above — and also the rest, from (1) to (16) — have a passive counterpart, in the following sub-section we will see some examples of *kan*-predicates that do not have a passive form.

2.2.3.2. *Kan*-aspect with psychological predicates (psych-predicates)

Like psych-predicates widely discussed in the literature, BI psych-predicates are also of interest because they have peculiar syntactic effects. However, the present paper will only include relevant phenomena that relate to *kan*-aspect, namely some aspectual properties of the verbal phrase. For example, when we say in English that *John annoys me*, there is something about *John* that *annoys me*, perhaps it is his voice, his criticism, his wit and so on. In English we can also say *I'm annoyed (by John)*. The BI counterpart, however, does not have the passive form, (20).

(19) *John*   *meN-jengkel-kan*   *saya*
      J   ACT-annoy-KAN   1sg
      'John annoys me'

(20) **Saya*   *di-jengkel-kan*   *(oleh)*   *John*
      1sg   PASS-annoy-KAN   (by)   J
      'I am annoyed (by John)'

As a strategy, a bi-clausal structure such as (21) can be used instead of (20).

(21) *Saya*   *di-buat*   *jengkel*   *(oleh)*   *John*
      1sg   PASS-made   annoy   (by)   J
      Lit. 'I am made (to become) annoyed by John'

Where the active counterpart of (21) is (22).

(22) *John*   *meN-buat*   *saya*   *jengkel*
      J   ACT-make   1sg   annoy
      'John makes me annoyed'

The events of *annoying* somebody as expressed in (21) and (22) remain non-volitional, although the *making* of somebody to become annoyed maybe volitional. Thus, the passive form in (21) is that of a MAKE clause. The distinction

between psych-predicates, (23), and predicates of cognition, (24), is blurred, as apparent in the occurrence of *senang* and *curiga* in both groups.

(23) *senang*, 'BE glad'   *senang-kan (X)*   'to please X', 'pleasing'
      sedih, 'BE sad'   *sedih-kan (X)*   'to sadden X', 'saddening', 'sad'
      susah, 'BE bothered'   *susah-kan (X)*   'to bother X', 'bothering'
      gembira, 'BE joyful'   *gembira-kan (X)*   'to gladden X', 'good'
      curiga, 'BE suspicious'   *curiga-kan (*X)*   'to act suspiciously'
      ...

(24) *senang*, 'to like'   *senang-i*(X)*   'to like X'
      curiga, 'to suspect'   *curiga-i *(X)*   'to suspect X'
      cemburu, 'BE jealous'   *cemburu-i *(X)*   'to BE jealous of X'
      tahu, 'to know'   *(ke-)tahu-i *(X)*   'to know X'
      ...

(25) *iri*, 'BE envious'   **iri-kan (*X)*, *iri-i (*X)*   'BE envious of X'

X, the THEME in (23) may be covert, i.e., implied, and it is obligatorily present in (24). The only example available for a psych-predicate that does not take any aspect, and hence, any object, is shown in (25): *iri*, 'BE envious', is purely a *state* predicate.

Predicates of group (24) behave like ordinary, un-derived, verbs, in that they can take PATIENT object. As a reminder, PATIENT objects are objects that do not undergo *change*. The difference between the object, (i.e., 'X'), of (23) and (24) can be shown in the following examples, (26) and (27).

(26) *Kelakuan*   *John*   *sangat*   *meN-senang-kan*   *Maria*
      behaviour   J   EMPH   ACT-glad-KAN   M
      'John's behaviour pleases Maria very much'

(27) *John*   *sangat*   *meN-senang-i*   *Maria*
      J   EMP   ACT-like-I   M
      'John likes Maria very much'

The argument *Maria* in (26) undergoes *change*; it is *Maria* that *experiences* change of state, who becomes *glad*. *John*, on the other hand may not even be aware of the event (remember, it is his *behaviour* that causes *change* in *Maria's* state of mind). Example (27) is the inverse: it is *John* that experiences being *glad*, and *Maria* may or may not be aware that *John* likes her.

2.2.4. *Kan*-predicate expresses the manner in which the THEME moves

Kan-predicates that express manner of movement can be grouped according to the physical form of the object, such as, whether it is of a liquid, semi-liquid or solid, whether it is flat, sharp, round, and whether the object is a body part, and so on. However, they all have something in common, namely, how the THEME moves or is moved is expressed by the *kan*-predicate. This type of predicate forms the largest body of data, presumably because of the number of shapes that exist, and presumably it has something to do with the fact that in BI a noun must be classified according to its shape for presentation. Denny (1976) argues that in Mandarin Chinese, noun classifiers 'have specialized semantic and syntactic properties' (Denny 1976: 122).

The following examples show the occurrence of *kan*-predicates with two types of mass noun, one type is that of liquid or semi-liquid (e.g., *air*, 'water'), the other is of grains (e.g., *padi*, 'rice'). Both types of noun in the examples function as *incremental* THEME, as a result of event that happens bit by bit. A point to note is that to describe a 'single, indefinite entity' of these mass nouns, two different classifiers should be used: *setetes*, 'a drop', for (28), and *sebutir*, 'a grain', for (29). For (30), *sebuah*, 'a', is used for real/concrete traffic, like those involving vehicles, and *(se-)suatu*, 'a', for an abstract sense, such as, *pikiran*, 'the thoughts', or, *dana*, 'fund'. The English translation is kept literal, which may sound rather unusual in some cases.

(28) *air*, 'water'

tuang-kan pour	*air* water	*(ke ember)* (to bucket)	'(To) pour water (to the bucket)'
ciprat-kan sprinkle	*air* water	*(ke baju)* (to shirt)	'(To) sprinkle water (to the shirt)'
semprot-kan spray	*ari* water	*(ke lantai)* (to floor)	'(To) spray water (to the floor)'
siram-kan shower	*air* water	*(ke tanaman)* (to plants)	'(To) shower water (to the plants)'

...

(29) *padi*, 'rice'

tuang-kan pour	*padi* rice	*(ke karung)* (to bag)	'(To) pour rice (into the bag)'
tabur-kan sprinkle	*padi* rice	*(ke lahan)* (to soil)	'(To) sprinkle rice (onto the prepared soil)'
sebar-kan spray/spread	*padi* rice	*(ke sawah)* (to field)	'(To) spread rice (to the field)' i.e., 'to sow'
rontok-kan shower-like fall	*padi* rice	*(ke tanah)* (to field)	'(To) shower rice (to the ground)', 'to de-stem'

...

While *tuang-kan*, 'to pour', can be used with both water and grains, the rest are not interchangeable, namely, *kan*-predicates that are normally used for liquids, (28), cannot be used for grains, (29), and vice-versa. However, what is more important is the manner, how the object moves or is moved – in an incremental fashion – is expressed by the *kan*-predicate. This seems right, because the manner of *flowing*, for instance, can also be used metaphorically to describe what seems unlikely, such as, 'traffic', as shown in (30).

(30)

alir-kan *alir-kan*	*air* *lalu-lintas*	*(ke sawah)* *(ke luar kota)*	'to flow water (to the field)' 'to flow traffic (out of the city)'
salur-kan *salur-kan*	*air hujan* *uang/dana IM*	*(ke got)* *(ke desa)*	'to channel storm water (to the gutter)'

'to channel money/IMF funds (to rural districts)'

salur: 'flow within an enclosure such as pipes, channels, and so on'.

2.2.5. *Kan*-predicate expresses the direction to which the THEME moves

The strongest and most apparent evidence of *change* is the *expression of direction* that exclusively describes the shift of location. It is the PATH of the shift to be travelled through by the THEME that is expressed by the predicate, as in the following examples, (31) - (33). This type of expression includes *backwards*, *inwards*, *outwards*, *upwards*, *downwards*, *towards*, and so on, where *upwards*, for instance, means 'along the path up' (Gruber 1970: 58, 59). The preposition, *ke*, 'to', that indicates the direction may or may not be included in the predicate, (31), or obligatorily present (32). In (33) the preposition cannot be included, because the predicate already contains a component of directional movement.

(31)
DIRECTION		as *kan*-predicate
ke atas	towards above, upwards	*(ke-)atas-kan*
ke bawah	down, downwards	*(ke-)bawah-kan*
ke samping	aside, side-wards	*(ke-)samping-kan*
ke belakang	toward the back	*(ke-)belakang-kan*
ke muka	to the front, front-wards	*(ke-)muka-kan*

(32)
ke luar	to outside, exit	**(ke-)luar-kan*
ke bumi	into the earth	**(ke-)bumi-kan*

(33)
turun	to descend, downwards	*turun-kan*
naik	to ascend, upwards	*naik-kan*

If *burial*, *meN-makam-kan jenazah*, (8), or *cremation*, *meN-abu-kan jenazah*, (11), is not an option, there is another way of expressing *change* involving a dead body, that is, by expressing the *directional path* to be travelled through by the corpse, before reaching its final destination — rather than its final resting place itself, or its final physical state. Like examples (8) and (11) above, the following example, (34), also occurs daily in the national papers of Indonesia. The predicate *ke-bumi-kan* is taken out of examples in (32) above.

(34)
Jenazah	*akan*	*di-ke-bumi-kan*	*pada*	*tanggal*	*(sekian)*
corpse	FUT	PASS-to-earth-KAN	on	date	(date)

Lit. The corpse will be shifted (in)-to the earth on the date of...
'The corpse will be buried on the date of...'

3. I-aspect and the lack of change

This section reuses some examples from the previous sections. By doing so, we can also see the contrast between *kan*-aspect and *i*-aspect. For instance, if the *final destination* of the move is more important in the expression, rather than the THEME, then *i*-aspect is used. The following (a) examples are taken out from examples (28), (29) and (30) with *i*-aspect for (b) examples replacing the *kan*-aspect.

(35) *air*, 'water'

a.	*tuang-kan* pour	*air* water	*(ke ember)* (to bucket)	'(To) pour some water (to the bucket)'
b.	*tuang-i* pour	*ember* bucket	*(dengan air)* (with water)	'(To) pour the bucket (with water)'

(36) *padi*, 'rice'

a. *tuang-kan* *padi* *(ke karung)* '(To) pour rice (into the bag)'
    pour   rice   (to bag)

    tabur-kan *pad* *(ke lahan)* '(To) sprinkle rice (onto the prepared soil)'
    sprinkle   rice   (to soil)

b. *tuang-i* *karung* *(dengan padi)* '(To) pour the bag (with rice)'
    pour   bag   (with rice)

    tabur-i *lahan* *(dengan padi)* '(To) sprinkle the soil (with rice)'
    sprinkle   soil   (with rice)

(37)

a. *alir-kan* *air* *(ke sawah)* '(To) flow water (to the field)'
    flow   water (to field)

b. *alir-i* *sawah* *(dengan air)* '(To) flow the field (with water)'
    flow   field   (with water)

In all the (a) examples of (35)–(37), where *kan*-aspect is used, the core argument *air*, 'water', or *padi*, 'rice' undergoes *change* in the form of translocation. In all (b) examples, the core argument *ember*, 'bucket', or *karung*, 'bag', or *lahan*, 'prepared soil', or *sawah*, 'field', is stationary. The resulting events, such as, what happens to the *bucket* when it is *poured with water*, or when the *bag* is *poured with rice*, is not stated in the expression. The bucket may become full or half-full, the bag ruptures, the field flooded or just wet, and so on. However, that is beside the point, and besides, results can be expressed by other means, for instance, by the addition of a small clause such as *sampai penuh*, 'until full', and so on.

On the understanding that THEME is an argument that undergoes *change* during the event, and PATIENT is an argument that is stationary and/or unchanged, we can state that *kan*-aspect selects THEME and *i*-aspect selects PATIENT. The present paper claims that the only difference between (a) and (b) examples, in terms of *vP*-aspect, is the argument selection, and that is the crucial part the aspects play in the derivation, without suggesting that one expression is derived from the other.

In describing the contrast between the two aspects, I have used different lexical items as the core argument, refer back to examples (35)–(37). What can happen if we use the same lexical item makes an interesting observation, apart from making a true minimal pair. Select *setiap orang*, 'everybody', as the core argument for both aspects, (38). The *kan*-predicate in (38a) is taken out from examples in (31), as an expression of direction. The following examples are provided without English gloss to see them more clearly as a minimal pair (see (39) for the gloss).

(38)a. *Jangan* *meN-(ke)-belakang-kan* *setiap orang*

b. *Jangan* *meN-(*ke)-belakang-i* *setiap orang*

Both expressions in (38) mean 'Do not put everybody behind you'. Considering the action or event, we can ask a question as to what the expressions mean (for both the English and BI). Do we mean 'Do not take everybody, lifted, shifted them one by one, and put them behind us', or, just 'do not turn around'? In BI the former is expressed as in (38a), where everybody moves except you, the latter as in (38b), where only you move, repeated in the following examples with the English gloss.

(39)a. *Jangan* *meN-(ke)-belakang-kan* *setiap orang*
        NEG   ACT-(to)-back-KAN   every body
        'Do not put everybody behind you'

    Prohibited action: to shift everybody to a place behind you; one by one (everybody moves but not you)

b. *Jangan* *meN-(*ke)-belakang-i* *setiap orang*
    NEG   ACT-(to)-back-I   every body
    'Do not put everybody behind you'

    Prohibited action: to turn around (you move)

The fact that only one argument moves in a given event can also be exemplified in the following examples, (40).

(40)a. *meN-atas-kan persoalan* 'to prioritise the problem'
                                      (the problem is *above* you)

    meN-atas-i persoalan 'to overcome the problem'
                                (you are *above* the problem)

b. *Atas-i-lah*   *persoalan, jangan hanya* *meN-atas-kan-nya*
    above-I-IMP   problem,   NEG   just   ACT-above-KAN-3sg
    'Overcome the problem, don't just prioritise it'

4. Summary and remarks

I have shown that what selects the THEME or PATIENT argument is the aspectual head rather than the base of the predicate (which may not even be a verb). *Kan*-aspect selects THEME, and *i*-aspect selects PATIENT. The difference between the two *vP*-aspects can be summarised as in the following schema (41).

(41) PREDICATE-*kan* THEME   [*kan*-aspect]

      PREDICATE-*i*   PATIENT [*i*-aspect]

From the discussion in the above sections, we see that there is something significant with *kan*-aspect, in that THEME is never expressed by/as the *kan*-predicate: expressions like *to butter the toast* (*butter* is the argument that undergoes *change*, but is expressed by/as the predicate), *to water the plants*, *to salt the stew*, *to gut/skin/bone the fish*, and so on, in BI belong to the *i*-aspect.

(42) *Udara kering sudah waktu-nya kita meN-air-i tanaman*
      air   dry   PERF   time-3sg we   ACT-water-I plant
      'The air is dry, the time has come we *water* the plants'

Other examples of THEME expression:

(43) PUT _____ TAKE/rid of

garam-i	*sayur*	*bulu-i*	*ayam*
salt	stew	feather	chicken
atap-i	*rumah*	*rumput-i*	*ladang*
roof	house	weed	garden
bedak-i	*muka*	*kulit-i*	*pisang*
powder	face	skin	banana

In conclusion, the difference between 'LOCATION' predicates and 'LOCATUM' predicates (Hale and Keyser 1993) is that the former belongs to the *kan*-aspect (*Section 2.2.1*), the latter to the *i*-aspect, (42) and (43).

Abbreviations:

BI   : Bahasa Indonesia, the lingua franca of Indonesia

ACT   : Active

PASS   : Passive

*v*P   : verbal Phrase (of a transitive clause)

PERF   : Perfective

FUT   : Future

COMP   : Complementiser

PROG   : Progressive

EMPH   : Emphatic

IMP   : Imperative

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